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Before the Committee on Appropriations

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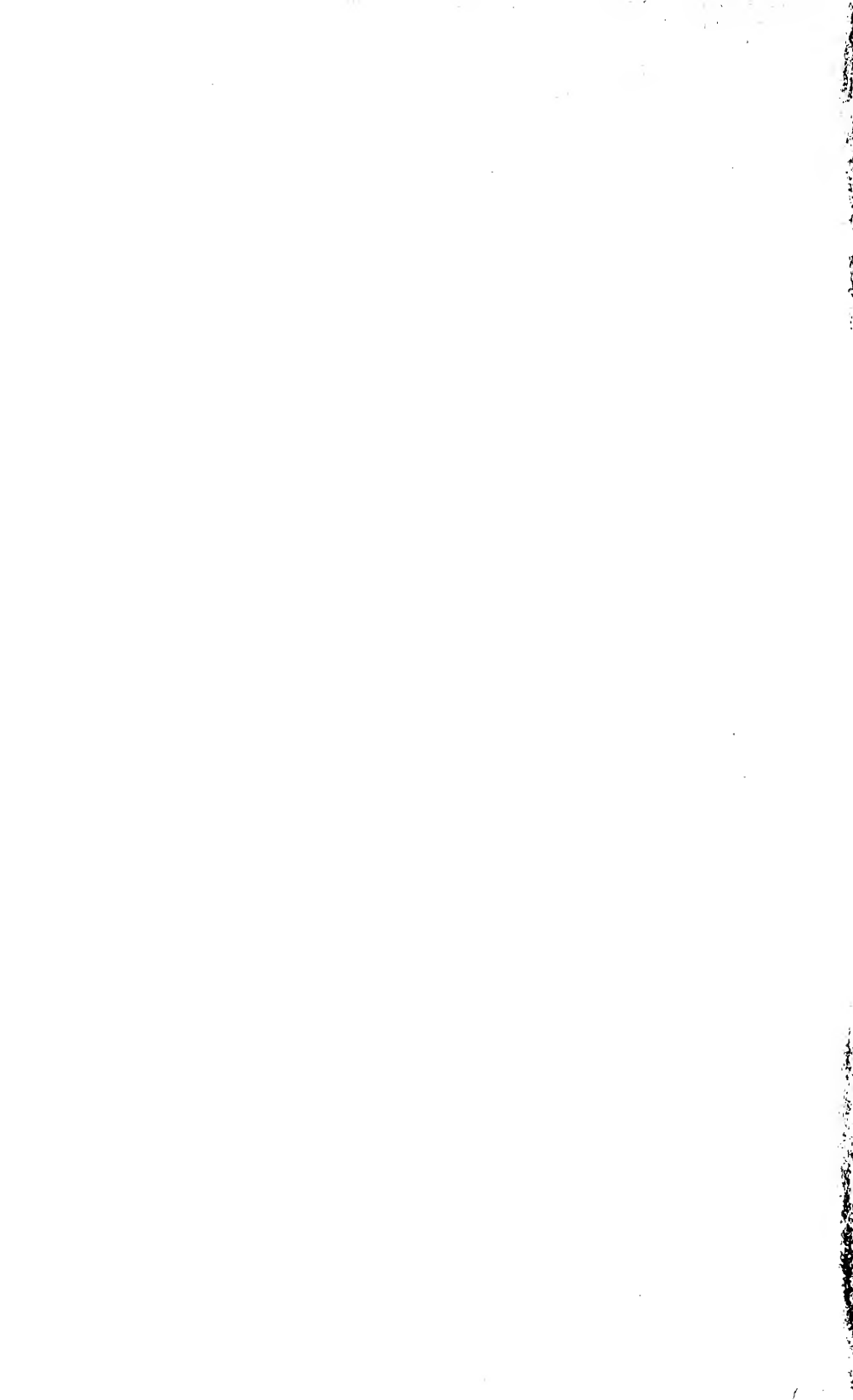
PART 1 (Pages 1-809)

- DEPARTMENT OF TRANSPORTATION
- GENERAL ACCOUNTING OFFICE
- NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK)
- NATIONAL TRANSPORTATION SAFETY BOARD
- NONDEPARTMENTAL WITNESSES

OFFICE OF THE CLERK
U.S. SENATE

JAN 11 1994

U.S. SENATE
OFFICE OF THE CLERK



DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1994

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE
COMMITTEE ON APPROPRIATIONS
UNITED STATES SENATE

ONE HUNDRED THIRD CONGRESS

FIRST SESSION

ON

H.R. 2490/2750

AN ACT MAKING APPROPRIATIONS FOR THE DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1994, AND FOR OTHER PURPOSES

PART 1 (Pages 1-809)

**Department of Transportation
General Accounting Office
National Railroad Passenger Corporation (Amtrak)
National Transportation Safety Board
Nondepartmental witnesses**

Printed for the use of the Committee on Appropriations



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DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1994

THURSDAY, MARCH 4, 1993

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Frank R. Lautenberg (chairman) presiding.

Present: Senators Lautenberg, Mikulski, and Specter.

PANEL I

**NATIONAL RAILROAD PASSENGER CORPORATION
(AMTRAK)**

STATEMENT OF W. GRAHAM CLAYTOR, JR., PRESIDENT AND CHIEF EXECUTIVE OFFICER

ACCOMPANIED BY DENNIS F. SULLIVAN, EXECUTIVE VICE PRESIDENT AND CHIEF OPERATING OFFICER

NONDEPARTMENTAL WITNESS

ASSOCIATION OF AMERICAN RAILROADS

STATEMENT OF BOB BLANCHETTE, FOR THE GENERAL COUNSEL

OPENING REMARKS

Senator LAUTENBERG. I call this hearing to order for the Subcommittee of Transportation of the Senate Appropriations Committee. The subject today is high-speed rail, a favorite subject of mine.

In the last few months, there have been a couple of new arrivals in Washington, DC, that together, I hope, signal the dawn of a new era in passenger rail transportation.

One arrival that most got a pretty good look at—pictures, TV, or otherwise—is the X2000 tilt train. This subcommittee provided funding for this new experiment over the Northeast corridor in order to demonstrate what new high-tech equipment might mean to American passenger rail service.

Personally, I had hoped that it would serve as a catalyst for renewed interest in rail transportation, but even I have been surprised at the popularity and the interest in the X2000, both with the media and the traveling public. In the X2000, people are seeing just how convenient, reliable, and comfortable railroading can be.

Later this year, Amtrak is going to be testing the German ICE train and, possibly, some others. For decisionmakers, experiments like these will help demonstrate that expanded investment in rail service can promote leadership in rail service, increase ridership, and produce benefits that we are fully familiar with: reduced highway congestion, reduced airport congestion, cleaner air, and less energy dependence on others.

Of course, the other, and even more important, new arrival in Washington, DC, is President Clinton. After 12 years of doing battle with the White House merely to keep Amtrak alive, it's been a delightful and refreshing change to have a President in the White House who believes that a Federal investment in high-speed rail is long overdue.

In addition to all of the environmental, energy, and transportation benefits that this investment will yield, it will also yield the thing that America needs most: jobs, jobs, and jobs.

By investing in high-speed rail transportation, we will succeed in creating thousands of new jobs across the country. Indeed, evidence in Germany indicates that investments in high-speed rail transportation projects produce 1.4 jobs for every one job generated by an equal investment in highways.

Investing in high-speed rail transportation will also enable the United States to regain expertise in critical new technologies that should create additional well-paying jobs for many skilled technicians and assembly workers currently facing an unemployment line.

Amtrak will soon be developing specifications to procure dozens of new trainsets suitable for corridors all over this country that will be capable of speeds of 150 miles an hour. I intend to see to it that every one of these trains is manufactured here in the United States.

Nowhere have we better seen the benefits of high-speed rail transportation in the United States than in the Northeast corridor. Each year, about 11 million passengers travel by train in the Northeast corridor. Sixty-five million commuters depend on the corridor to get to work every day. And over 40 percent of all of the people traveling between New York and Washington use Amtrak. And it's estimated that this committee's effort to attain less than 3-hour service between New York and Boston will divert an additional 2.5 to 3 million passengers from our congested highways and skyways to rail.

Currently, almost one-quarter of all traffic out of Boston's Logan Airport heads for New York City. Now, compare the \$1 billion investment that might be required in Northeast corridor electrification with the multiple billions of dollars necessary to expand or construct a new airport in Boston. If Amtrak didn't exist between New York and Washington, we'd have to invent it, because we simply could not accommodate all of those travelers in our airports or on our highways.

We would need at least 40 more shuttle flights a day to service the same number of people without rail service. Anyone who flies out of National, Newark Airport, or LaGuardia, can tell you that our airports just can't handle that additional load.

They can barely handle the current load. And take it from one who knows from experience, I have had longer delays on the ground after getting on an airplane than I have had in total flying time.

Our experience in the Northeast corridor shows that given even moderate high-speed rail service or moderate-speed rail service—that is to say, not truly high-speed—people will take the train. Improvements in elapsed travel time, immediately get attention and direct response from the traveling public.

At today's hearing, the subcommittee is going to focus on how we can emulate the success of the Northeast corridor through the rest of the country. The success of this corridor should be repeated. Several new high-speed corridors have been identified and should be developed. Basically, any place that we have major cities within 200 to 300 miles of one another, rail could provide the type of benefits that we've seen in Washington and New York.

The Clinton administration has embraced this goal by calling for a coordinated program, combining direct Federal expenditures and private sector investment incentives, to establish high-speed rail throughout the country.

At last, we have an administration that's prepared to implement a truly balanced transportation network. The question that faces this new administration, as well as this subcommittee, however, is how do we best invest those funds? And how do we maximize private sector involvement and investment in the expansion of high-speed rail service?

Today, we're going to discuss the ways that Federal investment can be corn seed—can best leverage the maximum level of private sector funds for high-speed rail. And I hope that we're also going to explore what incentives the private sector might need to increase its interest and its investments in rail projects.

We're also going to hear about the role that the States and the freight railroads can play. To address these questions, we have a diverse group of witnesses to testify this morning.

They include representatives of Amtrak and the Nation's freight railroads, the General Accounting Office, representatives of several fledgling high-speed rail projects across the country, and representatives from the investment community.

I welcome all of you here this morning and thank you for your willingness to discuss with us how we can best structure our long overdue investment in high-speed rail transportation.

I'm delighted now to ask my distinguished colleague and friend, Senator Mikulski, if she would like to make an opening statement.

STATEMENT OF SENATOR MIKULSKI

Senator MIKULSKI. Thank you, Mr. Chairman. I'm going to thank you for holding this very important hearing on the future of high-speed rail in the United States of America.

I'm going to thank you, also, for keeping Amtrak alive during this very difficult decade, when everyone wanted to sell it off, cherry pick it, and just would have broken up the system.

We would not be at the point we are at today, had not the U.S. Congress preserved Amtrak. And we want to acknowledge the role of your leadership in Amtrak and sustaining it.

Now, I think we will have opportunity to look for what is the next generation of Amtrak, what is the next generation of American trains, and how this will then generate jobs today and jobs tomorrow.

I look forward to listening to our distinguished panelists discuss maglev and high-speed rail this morning.

Mr. Chairman, I'm also here to say—let's bring, however, the analysis soon to a close and start making some real rail progress. It's time to get moving on maglev.

I happen to believe in that great line from "Field of Dreams." Do you remember when they said, "Build it and they will come?"

Well, that's the way I feel about high-speed rail. And that's the way I feel about maglev. I can't wait until this American-made technology is up and running at 300 miles an hour. I can't wait until I walk out of my little home in Baltimore, go to my favorite diner, pick up coffee and a bagel, zip to Washington, in less than 12 minutes. I won't even have a chance to say "Good morning," to all of those voters of mine.

We know that President Clinton has proposed a lot, a great deal of money for maglev and high-speed rail development. And we know that in the Technology Policy Statement, which he and Vice President Gore released in February, they called for providing funds for a maglev prototype.

We also know, Mr. Chairman, with your support, this subcommittee included \$45 million in last year's transportation appropriation for a maglev prototype development program authorized in ISTEA. Unfortunately, the House chose to fight us on that. And we had to put it aside in conference.

But you and I know the Federal Government has spent \$30 million on studies, preliminary assessments of maglev, which find that the technology is feasible and it's already moving ahead in other countries. However, what we've also found is that there is no one really in charge of the maglev policy in the United States of America.

So, Mr. Chairman, that is why I'm saying today, with the support of Senator Moynihan and other colleagues, we are sending a letter to President Clinton urging the President to put a qualified person in charge of the maglev effort, without delay, in the Federal Railroad Administration.

With the appointment of a maglev project director and the establishment of a maglev project office called for in ISTEA, we will then be able to move on this undertaking.

I want to be sure that when we look at maglev, we do not see it in lieu of the high-speed rail undertakings that are all underway. I support those. I look forward to riding with them. I look forward to working with you on funding them. And at the same time, I'm going to look even beyond the horizon to what maglev could mean in the 21st century that would help America and help us have something to sell around the world, so we could be the Yankee traders and peddlers that we are.

Thank you very much, Mr. Chairman. And I look forward to listening to the testimony of the panel.

Senator LAUTENBERG. Thank you very much, Senator Mikulski. With that sales pitch, it's obvious to those hearing Senator Mikul-

ski's dynamic delivery that we have here someone who used to be an outstanding salesperson. But what you're going to have to do, Mr. Claytor, is make sure that bagels are available on the train, because, in that short time, it's hard to move it along.

We thank you, Senator Mikulski. And I'm delighted that you're here with us. I know of your interest in high-speed rail. We share a common kind of makeup within our States, urbanized States, where relatively short distances can be very congested, and we need alternatives.

PREPARED STATEMENTS

Two of my colleagues on the subcommittee, Senator D'Amato and Senator Sasser, are unable to join us today. I will, at this point, insert their opening statements for today's hearing.

[The statements follow:]

STATEMENT OF SENATOR D'AMATO

Mr. Chairman, I join you in welcoming today's witnesses. Today's hearing promises to be very interesting as we will focus on the development of high speed rail and magnetic levitation rail systems in this country.

I believe that we are at the crossroads as far as this Nation's involvement in the high speed rail program. With leadership and support from Congress, Amtrak, and the Administration as well as the involvement of private sector entities, we can foster the full utilization of this Nation's rail resources. This would aid the environment, reduce airport and highway congestion, and provide better transportation service to the public.

I look forward to hearing from today's witnesses.

Thank you, Mr. Chairman.

STATEMENT OF SENATOR SASSER

Good morning. I join in welcoming all of the witnesses. Today's hearing focuses on the role of rail investments in future United States policy.

Let me begin my comments by saying a few words about Amtrak. It is hardly a secret along these corridors that Amtrak's biggest challenge, apart from operational self-sufficiency, has been its sheer survival. Whereas in recent years past, Amtrak has appeared before this Subcommittee under an ominous OMB cloud, the change in Administrations has favorably improved Amtrak's budgetary forecast.

While Amtrak has established a long, albeit battle-tested, track record, the United States' experience with high speed rail and magnetic levitation technologies is still evolving even as we meet here today. Clearly, there is great promise in the development and operation of advanced rail technologies. However, a fully operational high speed rail and magnetic levitation network will neither come swiftly nor cheaply.

There are undeniable benefits to transportation, the environment, and energy objectives of investing in high speed rail. But the investment is not one that the Federal government can realistically undertake alone. It's going to take a significant public-private partnership to make each and every dollar invested in rail today reap substantial, and long-lasting economic and social benefits tomorrow. It is against this backdrop, this fiscal challenge, that the Subcommittee assesses the role of rail investments in U.S. transportation policy.

The Clinton Administration has already signalled its support for increased government involvement in rail technologies. The Administration correctly recognizes the importance of transportation investments, not only in rebuilding America, but in the overall global economic climate. As a first step, the Clinton economic stimulus package addresses the economic realities of today without losing focus of the kind of long-term commitment to infrastructure that is essential to future economic growth.

Indeed, the realities of the day dictate a change in the way we move people and goods. High speed rail and mag lev promise to relieve congestion, reduce dependence on foreign energy resources, and adhere to high air quality standards. Still, many questions remain regarding how much the Federal government can do, and how

much the private sector will do to make advanced rail systems an operational reality.

The United States already lags behind Germany, Japan, and France in this technology. Western Europe and Japan have already committed billions of dollars to commercial development of advanced rail technologies. As a result, the United States now finds itself at a "make or break" point in the development of high speed rail technologies. The Clinton Administration's support for rail technologies provides an important endorsement at a most critical time in the decisionmaking process.

One of the most important features of ISTEA was its recognition that community transportation needs vary from state to state, and from region to region. The congested Northeast Corridor and the rapid growth areas of the Sunbelt and Southeast, offer uniquely different rail challenges from Middle America, or the South. Yet, each region's unique rail needs must be balanced in a comprehensive United States intermodal strategy.

I would hope that we can proceed expeditiously to make the critical decisions regarding high speed rail and magnetic levitation. At the same time, I believe improvements to existing rail providers, notably Amtrak, must fill the mobility void of Middle America. Amtrak can accomplish this through station improvements, equipment upgrades, increased scheduling, and additional service routes to those areas of the country that have for far too long gone without viable rail service. In short, the most effective rail strategy is one that meets the unique mobility needs of every community.

I thank the Chairman, and look forward to hearing the testimony.

INTRODUCTION OF WITNESS

Senator LAUTENBERG. Mr. Claytor, it is always a pleasure to welcome you. We've watched, with admiration, and I must say, some trepidation, as the rumors developed that the principal engineer on Amtrak may be content one day to just do it with model trains. The thought is a forbidding one. We want you to take vitamin C everyday, Mr. Chairman, and continue your good work.

Despite all of the compliments and everything else, we would ask you to summarize your statement, as we will Mr. Blanchette, and invite you now to proceed.

STATEMENT OF W. GRAHAM CLAYTOR

Mr. CLAYTOR. Thank you, Mr. Chairman. I'm extremely pleased to have the privilege of appearing before this subcommittee today to discuss Amtrak's role in the development of high-speed rail transportation in this country.

I have with me, on my right, Dennis F. Sullivan, Amtrak's Executive Vice President and Chief Operating Officer. And then following me, on my left, is Bob Blanchette, the General Counsel for the Association of American Railroads, who will represent the AAR.

Mr. Chairman, I will very briefly summarize the main points in my prepared statement, but I would like to ask that it be included in the record in full.

Senator LAUTENBERG. The full statement will be.

Mr. CLAYTOR. I also ask that my written statement on our fiscal year 1994 grant request be included in the record, as well.

Senator LAUTENBERG. It will be included, as requested.

Mr. CLAYTOR. Mr. Chairman, we would not even have a high-speed program to discuss today, but for your leadership and courage in this field. Together with Senator D'Amato, this subcommittee has really launched the high-speed rail development in this country.

Now, at the outset, let me just mention again, as I've done before, there are two types of high-speed rail. We must recognize that both of them exist separately.

First, is the 100 to 150 mile-an-hour speeds on existing roadbed and tracks. This, I call, high-speed. The press mixes it all up. And I try to straighten it out, because one must draw a distinction between the two.

Second, is the over 150 miles an hour and up to 200 to 300 miles an hour, requiring a newly constructed dedicated right-of-way. We may have service of either steel-wheel on steel-rail, such as the TGV or the Japanese bullet train, or magnetic levitation, both of which I call ultra-high-speed rail, and both of which Amtrak strongly supports. Amtrak hopes to be the operator of any of those systems that is finally started.

Now, Mr. Chairman, where are we today? Amtrak is the only high-speed operation in the United States between New York and Washington with 125 miles-an-hour Metroliner service.

As a result of your leadership, we are now constructing the only new high-speed rail operation on what has been a largely conventional speed passenger and freight Northeast corridor line between New York and Boston, including electrification of the Amtrak line between New Haven and Boston. This very important project will serve as a model for high-speed corridors elsewhere in the country. And I'm satisfied that that's the way it's going to work.

Now, what about equipment? Amtrak is in the forefront of developing up to 150 mile-an-hour high-speed trainsets for operation on existing roadbeds in this country. You have already mentioned the Swedish X2000 and the German ICE train, to be tested this summer. Both of these are electrically powered for operation on the Northeast corridor, but Amtrak is also taking a lead with New York State in developing high-speed nonelectric power systems for use outside the corridor. This is described in some detail in my formal statement.

We would hope to be able to substitute the fossil fueled power for the electric power on trainsets that we would design for use on the Northeast corridor. In other words, I think the trainsets that we are talking about getting first for the Northeast corridor, which will be electrically powered, could be powered by fossil fueled locomotives at least 125 miles an hour and, hopefully, higher later on, outside of the corridor.

And, with the State of New York, we are in the process of trying to develop that technology. That is an advanced technology that is not in hand today, but I think it can be. And we are working hard to bring it on as fast as possible.

Now, what steps are needed to move ahead on developing high-speed corridors outside of the Northeast corridor? First, while running high-speed trains on existing tracks is far less costly than building new dedicated roadbeds, significant infrastructure costs must still be faced, in addition to the cost of new equipment for that kind of an operation.

What are these costs? These costs include grade-crossing eliminations, new train control and signal installations, some upgrading of track bridges and interlockings. The extent of the latter would

depend, of course, on the existing condition of the railroad and the volume of the existing and anticipated track.

And before any particular high-speed corridor is to be examined in detail, we must have an engineering study of that line, its existing situation, the existing and proposed track, and analysis of what does need to be done. There are these categories of improvements that I've mentioned that will have to be done in all cases. We cannot do this in detail without these studies.

Now, substantial funding will be needed from many sources for these improvements. Amtrak must have a dedicated source of capital. For example, one penny of the fuel tax could provide for equipment and for some contribution to track and signal improvements in the high-speed corridors, as provided in the Swift bill.

Mr. Chairman, I was very disappointed to hear that the OMB plans to devote the entire 2.5 cents that's now marked for deficit reduction to highway operation.

I think that would be a bad mistake. It seems to me that this 2.5 cents ought to be devoted to transportation, but it ought to be devoted to the kind of transportation that can preserve the environment, save money, and as you have pointed out, address congestion in airports and airways and highways. And we ought to do that. To take this 2.5 cents and put it back in highways, I think, would be a bad mistake. And it would make it very difficult for us to go ahead with a lot of these programs.

So, next, we must also get highway funds for grade-crossing eliminations. That could come, in part, from ISTEA, because it's a highway problem. It must be done. You cannot operate more than 100 miles an hour over a grade-crossing with just gates and light protection, because we have demonstrated all too graphically that in this country, people go through and around the gates and lights. And we can't have that. So highway crossing elimination must be provided. And that should come from highway money.

State and local contributions for station, track, and signal improvements have got to be made.

And, finally and most importantly, we must have reimbursement for the costs and liability for potential passenger claims, if we're going to operate on somebody else's freight railroad.

While freight railroads have agreed to work with Amtrak and appropriate government agencies to accomplish high-speed passenger service on the rail corridors that they own, it's plain that Amtrak or any other operator must reimburse the freight railroad owner for any costs actually incurred by them, and most importantly, must indemnify the owner against liability from a passenger train accident without regard to fault or the degree of negligence involved.

Without that, we're not going to be able to get on the railroad. And I'm perfectly satisfied that that problem must be solved. The enormous open-ended potential liability for punitive damages that are now growing every day at a greater rate than ever, means that the uncompensated freight railroad could not afford to have high-speed trains operated without the indemnification.

And Amtrak, in turn, could not afford to do that indemnification for extensive new high-speed operations without, at least, limited relief from punitive damages, just for passenger claims. It's the

passenger claim problem that presents the problem, an insurable problem. And that's the one that we've just got to face.

I believe the problem can be solved, but unless it is, I'm afraid that high-speed train operations may be limited to operation over Amtrak's own or, at least, government-owned properties. And this is a problem we've got to work up to, first, before we actually start the operation on such a railroad.

Now, the above are some of the hurdles we must overcome as we move ahead to develop multiple high-speed corridors in this country. We look forward to working with this subcommittee to overcome them successfully and to continue to move forward with both kinds of high-speed rail development.

Again, Mr. Chairman, we applaud the subcommittee and its chairman for forward looking vision and leadership already demonstrated here.

And while I have emphasized in this testimony, in this oral testimony, primarily, the high-speed rail on existing track, as distinguished from the ultra high-speed, I do not mean to underestimate that.

It seems to me that we're first going to move into the high-speed operation, but we must look at the other two. I think maglev, as well as the TGV type of operations that are being proposed in Texas, offer a great opportunity in this country. And we need to develop them both. Amtrak stands ready to be the operator of any of those and to work with them on doing this.

Thank you, Mr. Chairman.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much, Mr. Claytor. We have your complete statement and it will be made part of the record.

STATEMENT OF W. GRAHAM CLAYTOR, JR.

My name is W. Graham Claytor, Jr. I am President and Chairman of the Board of the National Railroad Passenger Corporation, better known as Amtrak. I am extremely pleased to have the opportunity to appear before the Subcommittee today to discuss Amtrak's important role in the development of high-speed rail transportation in this country.

I want to state at the outset that were it not for the extraordinarily capable and even courageous efforts of the Chairman of the Subcommittee, Senator Frank R. Lautenberg, we would not be here today discussing the future of high-speed rail in the United States. His vision and leadership in this area are directly responsible for the significant progress we are making in implementing high-speed rail on the Northeast Corridor—a project that will point the way to similar developments in other high-density rail corridors elsewhere in the country—and in developing state-of-the-art high-speed passenger rail equipment. We also appreciate the strong support and leadership that Senator D'Amato has provided in the area of high-speed rail, particularly his support for both the Northeast Corridor and the critically important Empire Corridor in upstate New York. I am aware of few public officials who have so positively influenced the development of a technology upon which the future of American rail passenger transportation is so likely to depend.

High-speed rail development will greatly impact and in many areas define Amtrak's future in the national transportation system. We intend to pursue aggressively opportunities to design, build, operate and maintain new high-speed systems. While our ability to help fund the cost of these systems is strictly limited, our goal is to be the high-speed rail operator of choice in this country.

While I know that the Subcommittee is very knowledgeable about the various categories of high-speed rail transportation, there is still some public confusion and misunderstanding about this. Accordingly, I think it is worthwhile to make clear for

the record that there is a substantial difference between what I like to call "high-speed rail," with maximum speeds of 125 to 150 mph, and "ultra high-speed rail" with maximum speeds as high as 200 to 300 mph. Amtrak has already proven the feasibility in this country of providing "high-speed rail" service on existing tracks and roadbeds, built and used for many years for conventional-speed freight and passenger service. The "ultra high-speed" service, however, requires construction of a new and dedicated track system. This may involve the steel-wheel-on-steel-rail system such as those used by the French TGV and Japanese bullet trains, or it may involve the very different magnetic levitation systems that have been tested in both Germany and Japan.

At the outset, let's take a brief look at where Amtrak is today. This is the starting point from which to move into both high-speed and ultra high-speed operations:

- On the Northeast Corridor between Washington and New York, Amtrak's Metroliner Service is the only high-speed rail passenger service operating in the western hemisphere. Daily, our trains travel the fastest and highest density rail corridor in the country at a top speed of 125 mph, with high reliability and growing marketability.
- Amtrak is the only company in the nation actively involved in designing and converting an existing passenger and freight rail line to a high-speed electrified operation. The Northeast High-Speed Rail Improvement Project, initiated through the efforts of the Chairman, will dramatically improve transportation in the Northeast by reducing travel time between New York and Boston. Amtrak has been charged with implementing and managing this important project. The project likely will establish the model for upgrading other rail corridors around the country to permit high-speed rail service.
- Amtrak is at the forefront of developing the nation's first modern high-speed rail equipment, using European developed technology but American construction and safety standards. Following the current operational and market testing of the Swedish X2000 tilt train and the planned testing of the German ICE train this summer, Amtrak expects to procure 26 new high-speed electrically-powered trainsets for use on the Northeast Corridor. This new generation train—capable of a maximum 150 mph operation and with significantly improved passenger accommodations and ridership quality—will be manufactured in the United States and meet this country's strict safety standards. Importantly, Amtrak also plans to design and test a non-electric power system for the new trainsets that will permit their use off-Corridor at initial speeds of up to 125 mph, with the hope that even higher speeds can eventually be achieved. Thus, Amtrak will be developing a standardized family of high-speed rail equipment that can be used nationwide over electric and non-electric rail lines.
- Finally, Amtrak already provides conventional-speed passenger service over most of the potential high-speed rail corridors in the nation, including all of the five corridors recently identified by the Department of Transportation. As a result, Amtrak is the logical operator of high-speed service over these lines and may well be the most logical entity to oversee any high-speed rail improvements on those lines.

Amtrak's interest in fast passenger service extends well beyond the 150 mph threshold of what we call "high-speed" rail service to the operation of new "ultra high-speed"—150–300 mph—systems. The two most promising candidates for ultra high-speed rail are the proposed TGV steel-wheel system between Houston, Dallas and San Antonio and the 15-mile magnetic levitation system planned at the Orlando International Airport in Florida. Amtrak has been designated as the operator of the Orlando project and plans to work with the sponsors of the Texas TGV project and to ultimately play the same role in Texas. We strongly support both of these projects.

Amtrak's intention to play a leading role in the high-speed rail revolution is based on two key motives. First, both types of fast rail will contribute significantly to improving the nation's transportation system and in enhancing regional air quality—both long-term Amtrak objectives. Our Northeast Corridor experience vividly demonstrates this. Although Amtrak's long-distance service is being recognized as increasingly important to the nation, particularly to rural America, we must also address the critical highway, airport and airway congestion and air quality concerns in our most densely populated transportation corridors. With our extensive experience to date and our nationwide coverage, it is most appropriate that Amtrak assume a leadership role in the inevitable increase that is coming in high-speed rail.

Second, our success in the Northeast Corridor demonstrates that high-speed train service can generate a substantial operating profit, and such profit will play an important role in Amtrak's continuing efforts to eliminate its need for federal operating support. Existing Metroliner Service trains, for example, cover up to 200 percent

of their long-term operating costs, thus contributing significantly to Amtrak's overhead and bottom line. Revenues from Amtrak's growing contract commuter operations and from its future high-speed rail operations increasingly contribute to our goal of covering more of our operating costs. However, as discussed in more detail later in my testimony, our experience also demonstrates that it will be virtually impossible for any high-speed system at the outset to fully cover its cost of capital—both construction and long-term infrastructure maintenance costs—without substantial public assistance. Federal and state funding for these capital costs—from the incremental upgrade of existing rail lines to construction of new dedicated rights-of-way—will be essential if high-speed rail is to progress beyond the Northeast Corridor.

I think it would be useful to detail to the Subcommittee the progress we are making in high-speed rail development in a number of areas, as well as to discuss several other issues that I believe are critical to the successful development of high-speed rail transportation in this country.

AMTRAK'S NORTHEAST HIGH-SPEED RAIL IMPROVEMENT PROJECT

Amtrak is making substantial progress towards its goal of reducing travel time between New York and Boston to under three hours. As the Subcommittee is aware, over the next four years, Amtrak plans to electrify and upgrade this portion of the Northeast Corridor to permit up to 150 mph operations. The result will be a rail line supporting high-speed intercity passenger trains, numerous commuter rail operations, and freight rail service. Importantly, between 2.5 million and 3 million additional riders are projected to switch from other transportation modes to rail, thereby reducing congestion on the region's highways and at its airports and contributing to improved air quality. Given the very high cost of building dedicated rights-of-way for ultra-high-speed rail systems, this incremental improvement approach is the likely scenario for most early high-speed rail systems in this country in densely populated transportation corridors.

Amtrak has been charged with the responsibility for implementing and managing this construction project. We take this responsibility extremely seriously and have created a highly competent and efficient project organization. I am very confident of Amtrak's ability to achieve all of the project objectives in a manner that will make it a model for high-speed rail construction throughout the United States.

Considerable work is currently underway. This includes:

- Environmental impact analysis: The environmental review underway by the Department of Transportation should be completed by early autumn following publication of the draft Environmental Impact Statement (EIS) in June and the final EIS in September. The review will determine if the electrification of the rail line poses any significant adverse environmental impacts, and if so, what steps Amtrak will have to take to mitigate those impacts.

- Electrification system: In June 1992, Amtrak awarded a contract to a joint venture consisting of Morrison Knudsen Corporation, L. K. Comstock and Spie Group to design and construct the electrification system. Thirty percent design of the system was completed in February. Initiation of the construction phase could begin later this year following completion of the federal environmental impact analysis and the issuance of permits by Connecticut, Rhode Island and Massachusetts.

- Track improvements: Amtrak is undertaking various track improvements necessary to permit up to 150 mph train operations and to reduce long-term maintenance of the rail line. These include installation of additional concrete ties and new continuous welded rail, undercutting, and installation of four high-speed interlockings to permit trains to switch tracks at speeds of up to 80 mph (compared to 40 mph today). Amtrak expects to have significant track work underway during the spring and summer while awaiting completion of the EIS and subsequent commencement of actual construction work on the electrification system.

- Signal system: Amtrak is well on its way to completing installation of a modern train and speed control signal system to permit high-speed operations between New Haven and Boston on both tracks in either direction. This is essential to enable the rail line to handle safely and efficiently high-speed passenger trains along with slower commuter and freight trains. It also will enable Amtrak to remove the existing pole-strung signal line that now runs along the rail line.

The Northeast High-Speed Rail Improvement project is strongly supported in the Northeast by transportation planners and environmentalists and is expected to help generate important regional economic and job growth. The significant ridership impact will help regional compliance with the Clean Air Act and could help to avoid

the enormous cost of local airport and highway expansion projects. While it is inevitable that there will be some opposition to electrification and additional train movements from some of those living immediately adjacent to the rail line, the concerns that have been raised to date are the focus of review by the federal government and will be addressed in the Environmental Impact Statement.

HIGH-SPEED RAIL EQUIPMENT DEVELOPMENT

Of equal importance are Amtrak's plans to develop a family of standardized high-speed rail passenger equipment components that will result in a consistent high-speed rail service in this country and significantly reduce the cost of producing and maintaining the cars and locomotives. Amtrak is now in the process of preparing specifications for the procurement of the new high-speed trains, resulting in the development in this country of a broader rail car and locomotive manufacturing capability. This will have major implications for national economic development and will act as an important spur to development of high-speed rail elsewhere in the country.

If high-speed rail is to develop outside the electrified Northeast Corridor, however, a new generation of non-electric locomotives capable of high acceleration and sustained speeds of at least 125 mph must be developed. Until recently there has been no market in this country for high-speed rail. Consequently, there has been no incentive for the industry to invest research and development funding for high-speed locomotives particularly for the non-electrified corridors outside the Northeast. Although Congress has appropriated some \$14 million to Amtrak to develop such a locomotive (with the capability to also operate electrically under third rail power), to date Amtrak has not been satisfied with the proposals it has received from its manufacturers.

As a result, Amtrak has adopted a two-prong strategy to push industry as quickly as possible towards development of a satisfactory non-electric high-speed locomotive.

—Amtrak has strongly endorsed and agreed to participate in a proposal made by New York State to develop operating and maintenance data on the latest generation turbine engine. Turbine technology, similar to that used to power a jet airplane, permits a lighter-weight locomotive, thereby generating a higher horsepower-to-weight ratio. This should make it easier to produce higher operating speeds. Amtrak's experience to date with its current turbine engines, however, is that they are more expensive to operate and maintain. In addition, acceleration at higher speeds can also be a problem. Under New York's proposal, two of Amtrak's existing turbine locomotives would be rebuilt with the latest version of the turbine engine—Turbomeca's Makila. The new engines should enable a trainset of two locomotives (each with seating capacity) and three passenger cars to operate at 125 mph. Detailed data will be collected regarding the operation and maintenance of the new engines to determine their capabilities and costs versus the most advanced diesel locomotive technology. Because high-speed non-electric operations may well depend on turbo technology, this test could prove to be an extremely beneficial next step in the development of high-speed locomotive technology for non-electrified rail lines. For Empire Service, these locomotives will also be able to use the electrified third rail system for operation through the Penn Station tunnels to Long Island at acceptable speeds.

New York State has submitted an Expression of Interest for funding from the Federal Railroad Administration under the High-Speed Technology Demonstration Program (under Section 1036c of ISTEA) in part to undertake such a retrofit of turbine locomotives with the new Makila engine. If New York is awarded a grant for this test, Amtrak would fund the overhaul of the passenger sections of the trainset in order to use the test train as a development base for perfecting new seating and interior components that will be used later this decade in the new Northeast Corridor high-speed trainsets and on other Amtrak equipment. The result would be the first Amtrak owned, non-electrified high-speed trainset in revenue service that would be comparable to world standards.

—Amtrak views procurement of 26 new high-speed electric trainsets for the Northeast Corridor as the most important early step in bringing high-speed rail equipment to the rest of the country. The technology currently being evaluated for these trains includes tilting capability, good acceleration at higher speeds, integrated internal communications, standardized power and comfort subsystems, telecommunication, and video systems, and high-speed trucks and suspension systems. A next step would be to integrate these characteristics into a family of high-speed equipment that can be used systemwide, building perhaps on the Makila turbine train mentioned above. As a result, Amtrak will consider including in its procurement for the electrically powered high-speed trainsets

the feasibility of substituting acceptable non-electric power units, with a dual-power third-rail capability. These power units could be substituted for the electric locomotive when used on non-electrified rail lines, such as on the Empire Corridor and other routes radiating off the Northeast Corridor, as well as other potential high-speed corridors including the five identified by the Department of Transportation. The non-electric locomotives will be fossil fueled, with three-phase AC drives or hydraulic transmissions to achieve speeds of up to 125 mph, depending on the route profile and curvature. The key technological milestone will be the ability of the new locomotives—whether diesel or turbo—to provide extra horsepower for short time periods to generate the high acceleration required to reduce travel time on most routes.

With this strategy, Amtrak hopes to be able to encourage the industry to push the technological envelope as far and rapidly as possible in the development of high-speed non-electric motive power. In this way, Amtrak will help set the standard for high-speed rail equipment development in the nation, much as it is setting the standard for upgrading rail lines to permit high-speed operations. Amtrak will work closely with private industry and state and federal agencies in this effort to advance high-speed locomotive development. With our operating experience and the technical know-how in the industry, we believe that this public/private partnership is the best and most practical way to achieve the research and development necessary to attain high-speed rail service in this country. This is an area that holds much potential and challenge for American manufacturing and, indeed, the future of widespread American high-speed rail may well depend on it.

FUNDING HIGH-SPEED RAIL DEVELOPMENT

A critical issue that remains to be addressed is how to provide the capital necessary to upgrade existing or build new railroad infrastructure and to acquire the expensive high-speed rail equipment for new service. Funding for equipment is of particular concern since the same set of equipment may operate in many states and hence is less likely to be a candidate for funding under state transportation programs. As the Subcommittee is aware, Amtrak has urged establishment of an intercity passenger rail capital trust fund to support Amtrak's burgeoning capital needs and to help support development of high-speed rail. Representative Al Swift last year introduced a bill that would have established such a trust fund financed with one penny of the federal fuel tax currently allocated to deficit reduction. The bill was co-sponsored by some 30 members of Congress and was supported by a host of transportation and environmental groups.

The difficulties that have developed in the past in jump-starting high-speed rail service in California, Florida and currently in Texas demonstrate just how essential public financial support for high-speed rail development will be. The Swift proposal provides a reasonable and equitable mechanism for meeting both Amtrak's system-wide capital needs and some (but certainly not all) of the public infrastructure investment so critical to new high-speed rail corridors. I strongly urge members of the Subcommittee to consider the merits of the proposal.

SUMMARY OF COSTS FOR DEVELOPING EXISTING FREIGHT RAILROAD TRACKS FOR HIGH-SPEED PASSENGER CORRIDORS

In addition to funding Amtrak's needs for equipment and engineering for off-corridor high-speed corridor operations, multiple other sources of funding must be tapped to bring these objectives to fruition. As pointed out earlier, while the capital costs needed in high-speed operations over existing freight-owned railroad lines are far less than the costs involved in constructing the whole new dedicated railroad required for ultra high-speed passenger service, these costs are still not small. The infrastructure improvement costs for each corridor will be unique to that corridor and will depend on a great many different factors—quality of track and bridge structure; curvature; signal and train control systems; number of running and passenger tracks; number, location and control of interlockings; number of grade crossings; volume and nature of existing freight and passenger traffic, etc. While it is not practical to reach generalized conclusions about these costs without detailed analysis, it is feasible to list several categories of problems that must as a minimum be resolved in all cases. I list the following as a reasonable sampling of these.

(1) *Highway Grade Crossings.*—All highway grade crossings over which trains will operate at 100 mph or more should be closed or eliminated by overpasses or underpasses. At these speeds, the likelihood of a major derailment with resulting passenger casualties from a collision with an automobile or truck is too great, regardless of the existence of the usual gates and lights protection, which experience shows is often bypassed by irresponsible motorists. These are really highway, not

railroad, problems, and it is believed that the major funding for grade crossing elimination should come from highway funds.

(2) *Signal Improvements.*—Under present (and we think appropriate) FRA regulations, passenger train speeds may not exceed 79 mph without signals that register in the locomotive cab or provision of an automatic train-stop system. As a practical matter today, this means the installation of the essential elements of an Automatic Train Control System (ATCS). In many cases this will significantly benefit the freight railroad operation as well, but it is quite expensive to install. A significant part of this cost must come from appropriate state DOT's, community contribution, ISTEA, or FRA. Signal improvements are a critical safety measure.

(3) *Running and Passing Tracks and Interlockings.*—The extent of running and passing tracks and interlockings needed will depend on the volume and nature of the freight and passenger traffic to be accommodated. In a few cases, extensive additional trackage on the same right-of-way may be required, and in almost all cases, some improvements will be needed if high-speed passenger trains are to be added.

(4) *Rail, Tie, Bridge and Track Improvements.*—In many cases, the rail line may have good welded rail, good condition wood or concrete ties, satisfactory bridges, etc., but again significant expenditures may be required to assure the quality required for high-speed passenger use.

Without a significant assured source of capital funding, Amtrak will not be in a position to contribute to the funding required to adapt to existing freight railroad tracks for high-speed passenger service. Even with a capital funding source, Amtrak could not handle more than a modest fraction of the infrastructure improvement costs on a railroad owned by a freight carrier or anyone else. Other sources must be utilized if high-speed corridors are to be developed on existing tracks.

The freight railroads, through the Association of American Railroads, have indicated a willingness to work with Amtrak and others to develop these corridors for high-speed passenger service, but only if they can be guaranteed with no net cost and adequate protection against liability.

ADDRESSING LIABILITY CONCERNS

A final issue, discussed in Amtrak's 1993 Legislative Report, is presented by the legitimate concerns of freight railroads about potential passenger injury claims resulting from Amtrak, future high-speed or other passenger rail operations over their tracks. Clearly, the potential cost of an unfavorable jury award as a result of a passenger train accident could easily exceed (many times over) the revenues or other benefits received by freight railroads for high-speed operations conducted by Amtrak over their lines.

The factor most responsible for driving up the cost of liability is the ability of juries to award punitive damages when a jury determines, often on highly conflicting evidence, that an employee of a defendant company is guilty of conduct that is more serious than ordinary negligence. Courts have rarely set limits on the amount a jury can award to punish the defendant, and examples abound of punitive damage awards far in excess of the amount required to compensate an injured person for his or her injuries. The threat of such awards often causes defendants (including, unfortunately, Amtrak) to agree to large settlements rather than expose themselves to the risks of a hostile jury.

It is perfectly plain that the freight railroads—including those that own the trackage in most potential high-speed rail corridors—will not permit high-speed passenger operations without at least relief from passenger injury liability. Indeed, as noted above, the Association of American Railroads, which represents the major railroads in this country, has conditioned its support for high-speed rail development over private railroad lines on a requirement that the owners be totally protected from potential exposure to enormously costly passenger injury claims. That condition will require an unlimited indemnification by Amtrak or any other passenger train operator against passenger liability regardless of fault or degree of fault.

Amtrak already faces unlimited liability for punitive damage resulting from injuries it causes to its own passengers. If one were to add to this the liability for punitive damages incurred from indemnifying freight railroads where the freight railroad was at fault, Amtrak likely would be unable to afford to undertake extensive high-speed rail passenger operations outside its own Northeast Corridor. This is why relief from punitive damages is so vital. Only a limited exemption is needed to cover liability to passengers resulting from a passenger train accident. Amtrak is not seeking relief from all punitive damage liability, as is provided for claims against the United States and under various state laws with respect to commuter agencies, but rather only relief from punitive damage awards resulting from pas-

senger injuries. I firmly believe that this is essential if we are to extend our operations to include high-speed trains over freight-owned rail lines.

This is an extremely important issue with enormous repercussions on the development of high-speed rail on privately owned railroad rights-of-way. Amtrak urges Congress to address this issue before liability concerns block the path of high-speed rail development in some of the nation's most heavily traveled transportation corridors.

CONCLUSION

High-speed rail can play an important role in helping to address the nation's transportation and environmental needs. For our part, Amtrak intends to be a leader in developing high-speed rail technologies and in operating the nation's high-speed rail systems. We are the most experienced in the country in this area and, in many ways, our successful involvement in high-speed rail transportation will determine our success in the future. Amtrak looks forward to working with the Subcommittee in shaping high-speed rail and applauds the Subcommittee, particularly its Chairman and ranking minority member, for the vision and leadership it already has demonstrated in this area.

AMTRAK'S FISCAL YEAR 1994 GRANT REQUEST

As President and Chairman of the Board of the National Railroad Passenger Corporation, better known as Amtrak, I am very pleased to present Amtrak's fiscal year 1994 request for federal operating and capital assistance and to outline several important steps we have taken to improve Amtrak's financial performance as the nation's economy strengthens. Also, I will provide the Committee further details on Amtrak's need for a supplemental operating appropriation for fiscal year 1993.

IN THE SHORT-TERM: A TOUGH YEAR IN A TOUGH ECONOMY

It would be an understatement to report that Amtrak has been deeply impacted by the now three-year-old national economic recession. Compared to other companies across the nation, particularly in the troubled travel sector, Amtrak has weathered the slow down in demand for services relatively well. Indeed, when one looks at the impact of the recession on the airline industry—three bankruptcies and four liquidations in three years and losses of \$2 billion in 1992—Amtrak's rather stable financial performance over this period demonstrates important underlying market strength.

Nonetheless, for the first time since 1975, revenues actually declined (\$34.2 million or 3.3 percent) compared to our record performance in 1991. While this should not obscure the fact that Amtrak generated well over \$1.3 billion in passenger and other revenues during the year, our performance failed to meet even our modest expectations for the year. This is the result of several factors:

- Poor passenger demand: the recession took a serious toll on demand for travel services. Passenger ticket revenues fell 3.5 percent, intercity ridership fell some 3 percent, and passenger miles declined from 6.3 billion to 6.1 billion. Three isolated events also significantly undermined ticket revenues: Hurricane Andrew virtually wiped out travel to the south for several weeks; a threatened rail passenger strike and actual freight railroad shutdown forced our passengers to use other travel modes; and a fratricidal airline fare war devastated long-distance rail demand during the peak summer months.
- Weak real estate performance: the poor rental and leasing market, resulting from the recession and significant over-building during the 1980's, seriously undermined Amtrak's real estate revenues. Revenue fell 11.5 percent under last year.

On the other hand, Amtrak's considerable success at reducing corporate expenses last year represents an important achievement and bodes extremely well for future financial improvement as both passenger revenues and real estate development rebound with a stronger national economy. Expenses declined \$44 million from fiscal year 1991—a decrease of 2.1 percent—despite inflation and the costs associated with the operation of several new services. Much of this was due to corporate-wide cost cutting efforts, which included a management salary freeze, decreased staffing of trains and services, and some productivity gains resulting from new labor agreements. Indeed, with the decrease in expenses, Amtrak actually posted its highest revenue-to-cost ratio in its twenty-one year history—.791.

While I am pleased that we were able to reduce costs so effectively during this difficult time, I must emphasize that some of the cost cutting actions have degraded

the quality of service we are trying to—and indeed must—provide if we are to successfully compete with travel alternatives. In particular, we have had to severely reduce the number of passenger equipment overhauls at our Beech Grove maintenance facilities. This cost savings, however, is illusive in the long run. Much of the equipment we are running today simply is too old to withstand a delay in overhaul work and the result—a significant increase in equipment failures and the use of equipment that looks and functions badly—will severely undermine the marketability of our service in coming years. Delaying the overhaul of equipment simply is incompatible with, and directly impacts, achievement of Amtrak's goal of steadily improving the quality of its service.

In order to restore this quality that has been impacted by the short-term need to reduce corporate expenses and in order to avoid a potential severe cash shortage at the end of fiscal year 1993, Amtrak has submitted to this committee a request for supplemental operating funds of \$57.5 million for fiscal year 1993, which is within funding levels approved by Amtrak's reauthorization last year. I want to emphasize that requesting additional funding for current year operations is not a step I take lightly. Only because continued operation of the system depends on this request has Amtrak made the difficult choice to turn to Congress for further assistance. Specifically, the request includes \$57.5 million to increase overhauls; restore on-board, station and reservation safes office staffing; restore advertising and sales support; and restore seriously depleted working capital.

IN THE LONG-TERM: A RETURN TO IMPRESSIVE GROWTH

Despite the setbacks of the past year, I remain extremely bullish on Amtrak's future for the rest of the decade. Interest in the rail passenger alternative—both conventional and high-speed intercity rail service as well as commuter rail—has never been greater in this country, and Amtrak is well positioned to benefit enormously from this interest. The tremendous amount of public interest and enthusiasm over Amtrak's recent testing of the Swedish high-speed X2000 tilt train is reflective of an American public that remains fascinated by the lure of the "iron horse" of yesterday and the high-speed one of the future. Amtrak has proven that Americans prefer to travel by rail where service is reliable and price and time competitive. The challenge for Amtrak, Congress and state governments is twofold: to identify those corridors and routes where the energy efficient and environmentally superior rail mode makes good transportation and environmental sense; and to provide the funding needed to establish reliable, high-quality and time-competitive service over existing rail corridors or on new dedicated rights-of-way.

For its part, Amtrak has taken several critically important steps that will permit it to operate new service in the most efficient way possible and with the highest level of quality.

Quality Improvement.—Amtrak has begun the critical process of revamping its corporate culture to change the way in which its employees manage the corporation. Using the tools of continuous quality improvement, Amtrak is beginning the change-over to a customer-driven, management-led system in which all employees, working in teams, will use a variety of statistical and non-statistical tools to continuously improve the processes that drive our operation. The result will be incremental improvements in the quality of Amtrak products and services to meet or exceed our customers' expectations. Accomplishing these goals will require an evolution in Amtrak's corporate culture to one in which there is more open communication, fewer barriers between departments and between employees, a spirit of innovation and involvement, and a high level of employee satisfaction.

These will not come easily—particularly in an industry that resounds with the phrase: "but that is how it has always been done!" Nonetheless, I firmly believe that Amtrak will succeed in this goal for two reasons. First, senior management is totally behind this effort and is willing to take the steps necessary to change its own way of doing things. Second, many of the new labor agreements for the first time commit the employees to participate in quality improvements. Clearly, Amtrak cannot master the tools of continuous quality improvement without the full commitment and participation of all our employees—management and agreement-covered and their labor union representatives—to train, strategize, problem solve and work together in ways that are innovative for this industry. This will take years to fully implement, but it is a key to establishing the cost efficiencies and quality of service that will be essential if, as I believe, a genuine renaissance in demand for rail passenger service develops.

The growing interest in and demand for both additional conventional intercity rail passenger service and new high-speed rail service is truly breathtaking. Amtrak stands to gain enormously from this recent surge in interest as a result of our long

experience in operating high-speed service on the Northeast Corridor and our steady progress in implementing high-speed service between New York and Boston.

Labor Contracts.—One such step was the resolution of new labor agreements, which will help lay the foundation for our future success. After four years of negotiations, agreements were finally reached with nearly all of Amtrak's 14 labor organizations. Some were reached voluntarily, while others were imposed through congressionally mandated arbitration. While the process was at times divisive, the resulting agreements achieved important objectives for both Amtrak and its employees. Work rule changes, including the right to use part-time workers and increased use of shop craft employees across union jurisdictions, will allow Amtrak to structure its operations more efficiently and cost effectively. Steps to help control the enormous cost of health benefits were also agreed to with the employees. In return, wage increases considerably in excess of those received by workers in other industries (including freight railroad employees) have been provided. In order to prevent the drawn-out contract negotiations process from undermining the financial position of our employees, the contract includes a cost-of-living wage adjustment, to be made every six months, during the negotiation of new contracts. With negotiations now behind us, there is an opportunity for a new commitment by both management and labor to jointly focus on an improved Amtrak.

New Service.—New service between New Orleans and Miami—extending our current Los Angeles-New Orleans Sunset Limited—will start this year, initiating Amtrak's first transcontinental route. New routes in California and North Carolina, as well as efforts to bring service to Maine, reflect the willingness of states to support rail initiatives even during such financially strapped times. The decision by Congress in last year's Amtrak reauthorization act to authorize separate funding for new state-supported rail passenger service sent a clear message to the states that the federal government is willing to support efforts to jointly fund new Amtrak service where it makes sense.

New Equipment.—With the support of this Subcommittee, Amtrak has initiated several important equipment acquisition orders that will help provide the capacity we need to meet growing demand and help reduce our dependence on federal operating support. As the 140 Superliners begin arriving this year, we will gradually be able to upgrade the equipment used on the Auto Train, convert the Capitol Limited and City of New Orleans to Superliner equipment, increase capacity on numerous long-distance routes, and convert the Cardinal to daily service (using single-level equipment released as a result of the delivery of Superliners). In October 1992, Amtrak ordered the first 50 new Viewliner cars that ultimately will replace nearly our entire fleet of Heritage cars. These new Viewliners will begin to arrive two years from notice to proceed. Finally, beginning in May of this year, new locomotives will be arriving at the rate of 5 per month, providing relief to our exhausted and undersized fleet of diesel and dual-power engines.

These cars and locomotives represent the first of many that will have to be ordered as we move towards the next decade. They will be coming on line just at the right time—as the strengthening national economy brings a populace eager to travel again—and symbolize the vision that Amtrak has for the future of rail passenger service in this country.

Commuter Contracts.—During fiscal year 1992, Amtrak was awarded contracts to operate commuter rail service between San Jose and San Francisco, in Northern Virginia, and in the Los Angeles area. These contracts are of major importance for Amtrak and will provide substantial incremental revenue for the corporation. In addition, they further cement Amtrak's role as the commuter operator of choice in the nation. Amtrak is now operating all or portions of the commuter rail service in many of the nation's major cities including Boston, Providence, New Haven, Washington, Baltimore, San Francisco and Los Angeles, and indeed commuter ridership on Amtrak now exceeds intercity ridership. We intend to work hard to win additional commuter service contracts as plans for new systems in over 20 cities nationwide move toward fruition. We are extremely proud of our progress in this area and we believe it demonstrates the high level of confidence in Amtrak held by transportation planners across the country.

AMTRAK'S FISCAL YEAR 1994 GRANT REQUEST

Amtrak has provided the Subcommittee with its fiscal year 1994 request for federal operating and capital support. It disappoints me greatly to report that, as a result of poorer revenue growth than projected last year, and continued weakness in the national economy, Amtrak will seek its first increase in federal operating assistance in over a decade. It is essential that the Subcommittee understand that Amtrak's request for additional funding does not in any way alter our desire and com-

mitment to reduce our need for federal operating assistance. Nonetheless, as we have explained at great length in the past, generating greater revenues relative to operating costs requires both a growing market for our service and the ability, through capital investment, to expand and improve our service and productivity. Clearly, the state of the national economy has deprived us of the strong passenger market that so characterized the 1980's, when Amtrak routinely experienced double digit revenue growth. While our projected fiscal year 1994 revenues reflect the improving national economy, growth remains sluggish and is likely to remain that way for the rest of the fiscal year.

For the fiscal year 1994, Amtrak is requesting \$381 million in operating assistance. It is important to note that Congress foresaw the difficulties posed by the weak national economy for Amtrak by authorizing an increase in operating assistance to the \$381 million level in the recently enacted Amtrak reauthorization. That legislation also provided a separate authorization of \$9.5 million for the operating losses associated with the initiation of new services, and Amtrak is requesting the full \$9.5 million for fiscal year 1994. This funding for new services is critical to Amtrak's ability to comply with report language accompanying recent authorization and appropriations bills and directing Amtrak to begin service between New Orleans, LA, and Mobile, AL, and between Raleigh and Charlotte, N.C.

The Amtrak reauthorization recommended federal capital support in the amount of \$250 million, which is the level we are requesting for the year. This capital, which is so vitally important to us, would support, among others, the following:

- new electric locomotives to augment the fleet, in addition to new high-speed trainsets at the end of the decade.
- overhaul of cars and locomotives that no longer can be delayed.
- accessibility improvements mandated by the Americans With Disabilities Act and waste system improvements required by the National and Community Service Act.
- improvements required to ensure that Amtrak's on-board food service meets strict Food and Drug Administration requirements.
- improvements at Amtrak's maintenance facilities to streamline and modernize operations and improve the efficiency of maintenance activities.

As the Subcommittee is aware, these improvements are essential if Amtrak is to provide the capacity it needs to generate new revenues while controlling costs. Indeed, it should be no surprise at all that the goal of reducing our operating costs simply will be impossible without a significant boost in capital appropriations. Much of our revenue growth during the 1980's was due to the increased capacity of new equipment, and we believe that capital investment in Amtrak will result in those types of increases again.

For the Northeast Corridor Improvement Project, Amtrak is requesting \$250 million, the amount authorized in the recent Amtrak reauthorization act. Of this amount, \$183.7 million will support the ongoing Northeast High-speed Rail Improvement Project. Considerable work is underway in this exciting Amtrak initiative and we are extremely grateful that Congress has provided the funding for it during this difficult financial period. Ongoing work includes:

- Environmental impact analysis: The environmental review underway by the Department of Transportation should be completed by early autumn following publication of the draft Environmental Impact Statement (EIS) in June and the final EIS in September. The review will determine if the electrification of the rail line poses any significant adverse environmental impacts, and if so, what steps Amtrak will have to take to mitigate those impacts.
- Electrification system: In June 1992, Amtrak awarded a contract to a joint venture consisting of Morrison Knudsen Corporation, L. K. Comstock and Spie Group to design and construct the electrification system. Thirty percent design of the system was completed in February, and initiation of the construction phase could begin later this year following completion of the federal environmental impact analysis and the issuance of permits by Connecticut, Rhode Island and Massachusetts.
- Track improvements: Amtrak is undertaking various track improvements necessary to permit up to 150 mph train operations and to reduce long-term maintenance of the rail line. These include installation of additional concrete ties and new continuous welded rail, undercutting, and installation of four high-speed interlockings to permit trains to switch tracks at speeds of up to 80 mph (compared to 40 mph today). Amtrak expects to have significant track work underway during the spring and summer while awaiting completion of the EIS and subsequent commencement of actual construction work on the electrification system.

—Signal system: Amtrak is well on its way to completing installation of a modern train and speed control signal system to permit high-speed operations between New Haven and Boston on both tracks in either direction. This is essential to enable the rail line to handle safely and efficiently high-speed passenger trains along with slower commuter and freight trains. It also will enable Amtrak to remove the existing pole-strung signal line that now runs along the rail line.

The project is strongly supported in the Northeast by transportation planners, environmentalists, and high-speed rail advocates. In addition, this project will contribute important regional economic and job growth. Amtrak projects that three-hour New York-Boston service will pull between 2.5 million and 3.0 million travelers from congested airports and highways onto the train, resulting in important air quality improvements and helping to delay the enormous cost of regional airport and highway expansion projects. While there is always some opposition to increased service and electrification from some of those living immediately adjacent to the rail line, the concerns that have been raised are the focus of review by the federal government and will be addressed in the environmental impact statement.

Of the funds requested for the project, some \$68 million would be used to support the acquisition of the 26 new high-speed Metroliner service trainsets. We currently are projecting the trainsets to cost about \$450 million. As directed by the Senate report to the fiscal year 1993 transportation appropriations bill, Amtrak will be providing the Subcommittee with a report on options for financing the new equipment. We will keep the Subcommittee fully updated on the status of the procurement for this new equipment.

The NECIP request also includes \$67 million for improvements south of New York on the Northeast Corridor. These include safety improvements to the rail tunnels under the Hudson and East Rivers and upgrading of the electric traction and communication systems.

The Northeast Corridor is providing the only high-speed rail service in the hemisphere and, with improved infrastructure and new high-speed equipment, it can be a show case for the world. Importantly, it is doing so while at the same time providing service to over 65 million commuter rail passengers and numerous freight customers. Americans should be proud of the commitment Congress has made to preserving and upgrading this enormously important national transportation asset.

CONCLUSION

While the past year has brought some disappointments, Amtrak succeeded in setting the course for what should be a very successful decade. With an improving economy and an increase in travel demand, Amtrak revenues should resume the high growth rates achieved during the 1980's, provided Amtrak is given the capital it needs to invest in new equipment and facilities. We look forward to working with the new Congress and Administration in developing a national rail passenger system that meets the country's growing transportation and environmental needs.

NATIONAL RAILROAD PASSENGER CORPORATION 1993 LEGISLATIVE REPORT

INTRODUCTION

The National Railroad Passenger Corporation (Amtrak) is required to submit a legislative report to the President and to the Congress pursuant to section 302(b) of the Rail Passenger Service Act, 45 U.S.C. 548(b). That provision directs Amtrak to report on its operations and to recommend desired changes in the law that could improve productivity, enable the corporation to operate more efficiently, or reduce Amtrak's need for federal financial support.

Revenue growth over the last ten years has enabled Amtrak to dramatically reduce its dependence on federal operating support. Amtrak now covers about 80 percent of its operating costs with its own revenues, up from 48 percent a decade ago. Given adequate capital investment and a growing economy, Amtrak believes it can continue to move toward covering more of its operating expenses. Capital investment in the latter part of the 1970's helped Amtrak to average double-digit percentage increases in revenue during the 1980's, allowing revenues to grow at a much more rapid rate than costs. Additional capital investment will enable Amtrak to continue that type of revenue growth and service expansion. With a healthy infrastructure and a stable and fairly compensated work force, Amtrak can play a critical role in improving the environment and reducing congestion at airports and on roads as we move into the 21st century.

On October 27, 1992, Public Law 102-533, the Amtrak Authorization and Development Act, was signed into law. In addition to making changes recommended in

previous Amtrak legislative reports, this law authorized federal funding for Amtrak for fiscal years 1993 and 1994, with a level of \$381 million for operating support and \$250 million for capital investment for each year. Funds for the Northeast Corridor Improvement Project (NECIP) were also authorized at \$220 million for fiscal year 1993 and \$250 million for fiscal year 1994. For the current fiscal year, fiscal year 1993, Congress appropriated \$331 million for operating expenses; \$165 million for capital expenses; \$150 million for mandatory payments; and \$204.1 million for NECIP.

Amtrak is requesting \$381 million in federal operating assistance for fiscal year 1994. Although this request is an increase in federal operating support over fiscal year 1993, the increase is essential in the current economic environment if Amtrak is to operate its existing national rail passenger system and avoid reductions in forces and services. Indeed, because of the continued weakness in the national economy, and particularly the travel sector, an increase in operating support to \$381 million was contemplated by Congress in the Amtrak Authorization and Development Act. With an improving national economy, Amtrak fully expects to continue its past success at reducing its need for federal operating support and improving its ratio of revenues to costs.

Amtrak also is requesting \$250 million for capital improvements, particularly for use in acquiring new equipment and overhauling its existing aging fleet of cars and locomotives. This capital investment is an essential part of Amtrak's program to eliminate its need for federal operating support. Finally, Amtrak is requesting \$250 million under the Northeast Corridor Improvement Project to progress its New York-Boston high-speed rail improvement program and to address critical capital improvements between Washington and New York.

There are a number of states that are interested in pursuing new state-supported 403(b) rail passenger service. Specific states include Wisconsin, Illinois, Nebraska, and Iowa in the Midwest; Washington and California in the west; Louisiana, Mississippi, Alabama, and North Carolina in the south; and Maine in the northeast. Like many new services, these trains will suffer operating deficits in the early years. As a result, Public Law 102-533 separated funding required to operate new state-supported 403(b) service from that required for Amtrak's basic system. With this change, Amtrak can continue to minimize its operating losses without limiting the ability of states to test the viability of new intercity rail passenger service options. Amtrak requests that this provision be funded at the a newly authorized level of \$9.5 million for fiscal year 1994.

This report proposes several legislative changes that would permit a more efficient and less costly operation for Amtrak. First, however, it offers a vision of the role Amtrak can play in this country's struggle to stimulate the economy and to make long-term investment in the nation's rail infrastructure through the development of high-speed rail and other capital investments in the passenger rail system.

ELIMINATING ROADBLOCKS TO HIGH-SPEED RAIL

The nation is at a critical juncture in the development of high-speed rail. Interest in and demand for fast rail or magnetic levitation passenger service have never been higher, driven by increasing congestion on our highways and at our airports, as well as by concerns over the quality of the air we breathe and other environmental issues. In addition to New York's Empire Corridor and the Northeast Corridor, the Federal Railroad Administration has previously identified additional corridors that appear to have the potential for successful high-speed rail service. They include Washington-Richmond-Charlotte; Chicago to Detroit, Milwaukee and St. Louis; San Diego-Los Angeles-Bakersfield-Bay Area-Sacramento; Eugene-Portland-Seattle-Vancouver; Tampa-Orlando-Miami.

At the outset, however, we should distinguish between two different areas of fast surface rail passenger operation. The first, which Amtrak has called "high-speed," involves the operation of passenger trains at speeds from 100 to not over 150 mph on existing railroad tracks and rights-of-way. The second category, "ultra high-speed," involves rail or magnetic levitation operations at speeds in excess of 150 mph; they may operate as fast as 200-300 mph. Ultra high-speed operations will require the construction of an entirely new railroad or maglev guideway and are not suitable for operation on existing freight or passenger lines.

Ultra High-Speed Surface Transportation Systems.—Federal interest in magnetic levitation, as well as Bullet train or TGV ultra high-speed steel-wheel rail technology, has grown significantly under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). Since both of these technologies require construction of a totally new guideway or roadbed at very considerable capital investment, neither has so far been financed nor has construction been started. The two that appear

closest to fruition are the proposed 15-mile maglev operation between Orlando Airport and International Drive in Florida and the proposed TGV rail operation between Houston, Dallas and San Antonio in Texas. Amtrak supports both of these projects, as well as others that have been proposed elsewhere. As the only operator of intercity passenger service and as a major operator of commuter rail passenger service we are well suited to operate and maintain these systems. Amtrak is not, however, in a position to provide capital funds for ultra high-speed operations such as these.

High-Speed Rail Passenger Operations on Existing Railroad Rights-of-Way.—As noted above, these high-speed operations involve maximum speeds in the 100 mph to 150 mph range. The Department of Transportation recently identified five existing rail corridors, outside the Northeast Corridor, eligible to receive special funds to eliminate at-grade highway/rail crossings in order to promote high-speed rail passenger service on existing freight railroad-owned rights-of-way. Numerous state and regional authorities are studying the potential of such high-speed rail operation in their regions. In addition, the General Accounting Office is currently completing a detailed analysis of the status of high-speed and ultra high-speed rail in the United States and is expected to recommend federal actions which could facilitate its development to help meet the transportation needs of the next century.

In the Northeast Corridor, Amtrak is undertaking an ambitious high-speed rail project of its own to reduce the travel time between New York and Boston to under three hours. This will be accomplished through electrification of the existing Amtrak rail line east of New Haven, improvement of the tracks and signals to permit higher average speed and a top speed of 150 mph and reduction in the number of low speed segments, and acquisition of a new generation of state-of-the-art American-built high-speed rail equipment. Amtrak is currently testing a prototype, the Swedish X2000, and this July another, the German ICE, will also be tested in our Northeast Corridor. This Northeast Corridor project will serve as a test bed for the incremental upgrade of existing rail lines located on many of the nation's most densely populated transportation corridors. Three-hour New York-Boston service is expected to draw up to three million passengers from existing modes of transportation, resulting in significant congestion relief and improved air quality in the region.

Unfortunately, two fundamental issues threaten to undermine the development of high-speed rail in this country: funding the significant initial capital infrastructure costs of new systems, including equipment, grade crossing elimination, and track and signal upgrading; and the potential of liability costs related to high-speed operations over existing freight railway lines. Unless these issues are addressed, it is unlikely that "high-speed" rail passenger service will be able to develop to the extent we think both feasible and desirable on potential corridors outside the Northeast Corridor.

Funding Both Conventional and High Speed Rail Projects.—Unlike other modes of transportation, which are heavily subsidized by dedicated federal funding sources such as the Highway Trust Fund, no dedicated capital funding has ever been established to support the capital costs of Amtrak's conventional or high-speed rail systems. Despite support for rail passenger service, competition for scarce federal resources in a deficit environment has limited the availability of capital resources for Amtrak and has made development of high-speed rail corridor initiatives outside of the Northeast Corridor impossible. Similarly, absent federal or state policy that both encourages this development and funds substantial capital investment, as well as relief of liability concerns, the future of any new high-speed rail project in the United States remains in question.

Amtrak has proposed in the past that a mechanism be established to support the facilities and equipment costs associated with its existing national rail passenger system as well as to provide the initial capital required for equipment and maintenance for new high-speed rail systems. Last year, H.R. 4414, which would establish a capital fund financed by one cent of the current two and one-half cent federal fuel tax now allocated to deficit reduction, was introduced in the House of Representatives with over 30 co-sponsors and was widely supported in the environmental and transportation industries. The Bill would have two major impacts. First, under the proposal, Amtrak would for the first time have access to a secure capital funding source necessary to plan for and acquire modern rail passenger equipment and to upgrade and expand its system, resulting in a national system that would be of significantly higher quality than today's system. Second, a funding mechanism of this nature is necessary if this country intends to support efforts for the development of new high-speed rail corridors.

As Congress studies ways in which to stimulate job creation, new domestic manufacturing capability, economic development and an improved national transportation infrastructure, Amtrak urges it to consider establishment of a dedicated fund that

will change the nature of rail passenger transportation in this country and at the same time create jobs in manufacturing, construction and service industries. For the first time, rail passenger service would be placed on an even footing with other transportation modes, thereby allowing transportation planners to make decisions based on the merits of a proposed transportation project and not just the availability of federal funding for a particular modal proposal. In the process, the United States could again establish itself as a world leader in the design and manufacture of state-of-the-art rail passenger equipment and rail infrastructure.

It should be emphasized that such a funding mechanism would and should not be the only source of funding for high-speed rail. Indeed, many of the localized rail infrastructure improvements that would have to be undertaken to reduce travel time should be funded from state transportation programs, particularly those established under the ISTEA. Amtrak believes that the intercity rail passenger trust fund would be particularly important as a means of funding equipment capital costs—rolling stock that will often operate in several states—and other related facilities.

In this regard, Amtrak supports two recent proposals that would provide an important stimulus to the development of high-speed rail systems and a rail equipment manufacturing capability in this country. The first is an investment tax credit that would include investments in conventional and high-speed passenger rail equipment. The second would remove barriers on tax-exempt authority for the rehabilitation of rail passenger facilities and equipment. These two proposals would dramatically reduce Amtrak's costs of financing equipment purchases vital to the realization of high-speed rail in the United States.

Addressing Liability Concerns.—Another fundamental issue creating a barrier to the development of high-speed rail service is the threat of huge damage awards that could result from rail accidents. Clearly, the potential cost of an unfavorable jury award as a result of a passenger train accident could easily exceed (many times over) the revenues received by freight railroads for high-speed operations conducted by Amtrak over their lines.

The factor most responsible for driving up the cost of liability is the ability of juries to award punitive damages when a jury determines, often on highly conflicting evidence, that a defendant is guilty of conduct that is more serious than ordinary negligence. Courts have rarely set limits on the amount a jury can award to punish the defendant, and examples abound of punitive damage awards far in excess of the amount required to compensate an injured person for his or her injuries. The threat of such awards often causes defendants to agree to large settlements rather than expose themselves to the risks of a hostile jury. Indeed, it is for this very reason that Congress enacted legislation to make the United States exempt from the award of punitive damages in the Federal Tort Claims Act. Regional commuter rail authorities are also generally protected from such high awards from operations within the state, limiting liability concerns and protecting taxpayers against unduly expensive jury awards because their function is in the public interest.

It is unlikely that freight railroads—including those that own the trackage in most potential high-speed rail corridors—will permit high-speed passenger operations without this issue being addressed. The potential exposure to enormously costly punitive damage jury awards from passenger train accidents is simply too great and too real. In addition to the understandable concerns and expected opposition of railroads who own tracks required for operation of passenger services by Amtrak and local commuter authorities, the excessive cost of liability exposure continues to drain resources from Amtrak and other passenger service providers that could better be used to improve safety of operations or expand service. However, Amtrak cannot afford to give an unconditional guarantee against risk of liability for high-speed service unless it is insulated from the high cost of punitive damages.

Amtrak will work with the new Administration and the Congress in an effort to seek a consensus on the best way to control the liability costs associated with public transportation by passenger trains. This issue is extremely important and timely, and Amtrak encourages Congress and the Administration to examine the issue.

1993 LEGISLATIVE PROPOSALS

Amtrak has identified below several changes that would assist Amtrak in becoming a more efficient operation.

Assigning Appropriate Environmental Responsibility.—In 1976, Congress transferred to Amtrak title to several properties formerly owned by other railroads, primarily the bankrupt Penn Central Railroad. However, neither Congress nor Amtrak were aware at that time that these properties would be subject to subsequently enacted federal and state legislation that imposes liability on the title holder for the

enormous costs of cleaning up contamination and pollution that had occurred prior to the transfer of the property in 1976. Amtrak believes that the costs for cleaning up pollution that occurred prior to April 1, 1976, should be the obligation of the responsible party—the owner which caused the pollution.

Aside from the consideration of fairness, it would be illogical for the federal government to impose these clean-up costs on federal taxpayers through Amtrak appropriations, particularly if the responsible party can be identified and has the ability to pay to clean up the pollution it caused. In the event that the previous owner is protected by bankruptcy laws, then Amtrak, and the taxpayers who would eventually have to pay the bill, should not be required to pay for cleaning up pollution it did not cause on property transferred to it by the federal government.

Unless some relief is provided, Amtrak may be required by EPA to pay multi-million dollar clean-up costs for a commuter train yard at Paoli, Pennsylvania, which was never sought by Amtrak nor used for Amtrak train operations. The PCB pollution at this site resulted primarily from operations over several decades by the Pennsylvania Railroad, and its successor, Penn Central Transportation Company. Any payment by Amtrak would have to be appropriated as an addition to its operating subsidy.

Removal of Barriers to Private Financing.—Currently Amtrak is authorized to issue various forms of financial obligations, and Amtrak utilizes this authority in connection with private financing initiatives. However, Amtrak must obtain the consent of the Secretary of Transportation to issue even routine obligations with a liquidation interest superior to the preferred stock held by the Secretary or secured by a lien on Amtrak property. Amtrak can compete effectively for funds in the private financial markets only if its ability to incur the necessary obligations is not conditioned by a statutory requirement to obtain the Secretary's prior consent.

CONCLUSION

Amtrak welcomes the present debate about reinvesting in the nation's infrastructure and is eager to work closely with Congress and the new Administration in formulating a comprehensive plan that will provide immediate economic stimulus through job creation, offer long-term economic development, and establish an environmentally sound, energy efficient transportation system. High-speed rail is now widely recognized to be an integral part of such a system and, with the suggestions included in this report, Amtrak stands ready to develop the full potential of rail passenger service in this country.

STATEMENT OF ROBERT BLANCHETTE

Senator LAUTENBERG. Mr. Blanchette, we'd like to hear from you now. Again, welcome.

Mr. BLANCHETTE. Mr. Chairman, Senator Mikulski, thank you very much for the opportunity to appear before you.

My name is Robert Blanchette. I am the chief legal officer of the Association of American Railroads, but let me say, Senator Mikulski, that if you do take that maglev from Baltimore to Washington, if you will go by Bethesda, I can assure you that my family will be out and waving at you as you munch on your bagel and drink your coffee.

Mr. Claytor is a good, longstanding friend of mine. And I can say, in all candor, that I share the desire of everyone in this room that I be brief, so you can get on with your questions of him.

I have my prepared testimony. And I'd ask that it be incorporated in the record of these hearings.

Senator LAUTENBERG. Without objection, so ordered.

Mr. BLANCHETTE. Let me only say that I have spent more years than I care to count worrying about the continuation of passenger service and high-speed passenger service in the United States.

I started as general counsel of the New Haven; nursed the TurboTrain into creation and extinction. I served, later, as a trust-

ee of the Penn Central, where we tried to keep the payrolls going and maintain Metroliner service.

I then served as Federal Railroad Administrator and worked very closely with Mr. Claytor to bring Amtrak to the commendable business basis that it's now on. I later served as the counsel for the French TGV interests in the United States.

So I am delighted to see the way this committee is proceeding to look ahead of it and rather than the way it's always proceeded in the past, and that has been to look behind and say, "Well, we've got to have something. Let's start Tuesday morning at 9 o'clock. We don't know what the technology is. We don't know whether it will work. We don't know where it's all going to end, but we'll force everybody to do it our way."

I think the deliberate manner in which you have approached it, encouraged by Mr. Claytor and his associates, is most commendable. And I do hope it augers a new era and one in which the freight railroads of this country would be pleased and proud to be a contributor and a participant.

Thank you, Mr. Chairman.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you, Mr. Blanchette. Your complete statement will be inserted in the record.

STATEMENT OF ROBERT W. BLANCHETTE

Mr. Chairman and Members of the Subcommittee, the Association of American Railroads (AAR) is pleased to respond to your invitation to appear today on the subject of high-speed rail passenger service.

Recently, AAR broke new ground with the announcement of a major policy position regarding the railroad industry and the burgeoning high-speed rail evolution in the United States. The position was of particular significance in that AAR's member roads include Amtrak, the nation's rail passenger service carrier, and its major freight railroads. These roads comprise 92 percent of the route miles operated in the United States and they carry over 90 percent of the nation's freight. Apart from the Northeast Corridor, Amtrak's passenger trains operate over the national freight system; as a result, close cooperation and coordination are required. In years to come, many corridors recommended for high speed development could operate along or adjacent to intercity railroad rights-of-way.

In consequence, the recently issued policy statement offers definitive guidelines where, in the past, considerable ambiguity existed.

I attach the policy statement and incorporate it by reference in this testimony. It is brief and requires little interpretative comment. I should, of course, be pleased to answer your questions.

In the past, the relationship between freight and passenger service was beclouded by historical precedents. Long after passenger service ceased being able to pay for itself, its deficit operations were imposed upon the railroads as compelled public service obligations. Early experiments into improving rail speeds—the TurboTrains on the old New Haven line between New York and Boston, the original Metroliner service between New York and Washington on the Penn Central—failed to reflect the balance that must be struck between public and private entities in order to create successful partnerships and projects.

With the formation of Amtrak in the early 1970's, the relationship changed. To be sure, there are statutory requirements which affect the relationship between Amtrak and the underlying freight system. Nevertheless, the pattern of dealing has become more businesslike. And that evolution has resulted in better service to the public.

Just as high-speed rail is an emergent feature on the American transportation scene, the policy statement affords us a new basis for dealing with the relationships that can be formed—and with those that cannot be. The new alignment of interests is businesslike; it addresses the realities and is promising.

In conclusion, Mr. Chairman, the Association of American Railroads and its member companies stand ready to assist in the development of any high speed rail initiative and I welcome your questions.

HIGH-SPEED RAIL PASSENGER AND FREIGHT SERVICES: OPPORTUNITIES FOR PARTNERSHIP

EXECUTIVE SUMMARY

(1) Rail transportation offers America significant economic, environmental and safety benefits, and is a solution to increasing highway congestion.

(2) America's freight railroads are ready to cooperate in the extension and advance of high-speed rail passenger service, as well as in other rail passenger services.

(3) There are distinct types of passenger services: commuter, conventional inter-city (Amtrak), high-speed and ultra high-speed. These differences must be understood because they control the extent to which rail freight and passenger operations can operate over the same rights-of-way.

(4) In general, ultra high-speed rail service (over 150 miles-per-hour) cannot operate compatibly on the freight railroads' rights-of-way. There are fewer limitations on high-speed service (up to 150 mph), but strict safeguards are necessary. Freight railroads already accommodate conventional Amtrak service and viable partnership arrangements normally are possible. The same is true in most commuter areas. Essentially, partnership possibilities must be examined on a case-by-case basis.

(5) The formation of partnerships among railroads and sponsors of new passenger rail projects will benefit the public.

(6) The full costs of changes in existing freight rail operations to accommodate new passenger operations must be borne by the entity sponsoring the new service.

(7) Freight railroads must be indemnified and insured against any and all financial liability arising from accidents affecting passenger services.

AMERICA'S RAILROADS SEEK TO ENHANCE PASSENGER SERVICE

Greater use of railroads will permit America to alleviate highway and airport congestion, decrease dependence on foreign oil, reduce pollution, and eliminate injuries and fatalities associated with automobile and truck transportation.

In both urban and rural areas, highway congestion is growing, and many airports are taxed well beyond their design capabilities.

In some areas, railroad rights-of-way offer already assembled corridors that can be utilized without the cost and environmental degradation associated with highway and new airport construction.

The public interest favors increased reliance on rail service. Railroads are substantially more energy efficient than any form of highway transportation; and energy efficiency implies less air pollution. Railroads are far safer than highway to move both passengers and freight—and the railroads' safety record has improved over the past 10 years.

For these reasons, policy makers support greater use of railroads to move both passengers as well as freight; similarly, many policy makers support the introduction of high-speed rail passenger service as a national priority. In fact, the High Speed Rail Association has identified more than 40 candidate high-speed rail corridors in the United States and Canada.

America's freight railroads are ready to cooperate in the advance and introduction of high-speed rail passenger service.

Admittedly, technological and operating differences between various forms of railroading sometimes impose limitations on the shared use of some track. As America moves to increase its use of rail to move both passengers and freight, high-speed rail initiatives must be considered on a case-by-case basis to determine their compatibility with existing train operations.

America's freight railroads are prepared to continue their history of cooperation in identifying and solving engineering and operational difficulties, and in assisting public policy makers to reach economically sound choices.

DIFFERENCES IN PASSENGER OPERATIONS MUST BE ANALYZED

Many potential high-speed corridors do not appear to have the potential ridership economically to justify dedicated rights-of-way, and therefore may seek to share trackage with freight operations.

Launching mixed freight and high-speed rail passenger service on the same tracks must, of course, be accomplished without compromising safety or interrupting the efficient movement of freight.

The concept of shared use requires an analysis of the four distinct rail passenger services that might share rights-of-way with freight railroads:

(1) Commuter rail provides mass transportation between suburbs and core cities and within combined metropolitan areas. Commuter rail is the fastest growing segment of rail passenger service, and includes lines operated by regional transit authorities (New Jersey Transit, South East Pennsylvania Transit Authority, Metro North, Long Island Railroad, and Metra) or for such authorities by contract (Amtrak, Burlington Northern, Chicago & North Western, and CSX).

(2) Amtrak is a federally owned company that operates coast-to-coast, primarily on rights-of-way owned by freight railroads, and at top speeds ranging from 79 to 90 mph, depending on the availability of cab signals.¹ Apart from its conventional trains, Amtrak owns the right-of-way in the Northeast Corridor between Washington and Boston. Between Washington and New York, Amtrak operates high-speed rail passenger service at speeds up to 125 mph.

(3) High-speed rail passenger service is well established in Europe and Japan, and operates at speeds of 100–150 mph between cities generally fewer than 300 miles apart. Federal funding will permit Amtrak to extend its high-speed corridor from New York to Boston. Joining city pairs such as Washington-New York and New York-Boston will result in high-speed service in a corridor of some 500 miles length.

(4) Ultra high-speed rail passenger service includes the French TGV and Japanese Bullet trains that operate at speeds at or above 150 mph. Ultra high-speed rail requires new rights-of-way entirely dedicated to this kind of service. It also includes transportation systems using magnetic levitation technology. Except for existing rail lines that are or may be abandoned, it is doubtful that the freight railroads have any assets appropriate for the development of ultra high-speed rail passenger services.

In integrating these types of rail passenger services into rights-of-way owned and maintained by freight railroads, planners and engineers must focus on four key areas:

(1) *Significantly Different Operating Speeds.*—High-speed passenger trains travel between 100 and 150 mph, while the speed range of freight trains generally is 30–60 mph. This difference of speed constrains the scheduling of freight operations, or requires construction of additional track capacity. Accommodation may not be feasible in all cases.

(2) *Signal Systems.*—Generally, signal systems for America's freight railroads are visual trackside systems. High-speed rail passenger operations require speed control and cab signals.² Most freight trains, because of their slower operating speeds, do not utilize speed control, and not all freight railroads utilize cab signals. Therefore, additional investments will be required where high-speed rail can be operated over existing rights-of-way.

(3) *Right-of-Way Protection and Grade-Crossings.*—High-speed rail passenger operations require total rail-highway grade-crossing protection, which generally means the construction of highway underpasses or overpasses to prevent highway traffic from crossing a rail line at grade. Additionally, high-speed rail corridors may require special protection such as fencing to prevent trespassing and vandalism.

(4) *Maintenance Requirements.*—High-speed rail passenger maintenance requirements are substantially greater than those for freight operations. Obviously, ride quality is paramount, and for safety purposes more visual inspections are necessary. In curves, track elevations vary with speed, and this constraint may further limit the areas of compatibility.

PASSENGER/FREIGHT PARTNERSHIPS REQUIRE CASE-BY-CASE REVIEW

Because local circumstances and rail transportation goals vary by region, each passenger service project must be evaluated on a case-by-case basis. While passenger and freight operations can be compatible on the same track, the differences between freight railroad service and ultra high-speed rail passenger service create

¹ Cab signals allow for continuous display in the locomotive cab of upcoming trackside signals. Cab signals allow the locomotive engineer to adjust speed promptly, rather than waiting until the next trackside signal is in view.

² Cab signals are defined in fn. 1.

Speed control is a system that detects an overspeed condition by the locomotive and automatically gives an audible warning. If the locomotive is still not operating within the speed restrictions within 25 seconds, the train automatically is brought to a halt.

obstacles that cannot be overcome. In other areas, the potential depends upon the facts.

Recently consummated projects involving commuter rail in Los Angeles, Houston, Denver, Salt Lake City and Northern Virginia are evidence that joint-use agreements can be made that are beneficial to all participants.

After the facts are known, the nature of the partnership between the freight railroad and the passenger service proponent can be assessed. The partnership must be on a business basis. Railroads no longer bear entrepreneurial risk for passenger operations and will enter the arena only on a fully compensatory basis.

It is therefore a matter of equity that the full costs of changes necessary to accommodate high-speed rail passenger service be borne by the public entity sponsoring the high-speed rail passenger project.

Where mixed freight and high-speed rail passenger operations are feasible, leases, parallel easements and/or trackage rights agreements should be negotiated in an arm's length manner.

Another matter of importance is liability in the event of accidents. Freight railroads have no incentive to allow high-speed operations on their lines if they must accept potentially catastrophic, uninsurable financial liabilities. Thus, the freight railroads believe equity demands that they be indemnified against any and all financial liability in the case of passenger operations.

SUCCESS OF THE X2000 TEST

Senator LAUTENBERG. Mr. Claytor, I think, to kind of start, we may just get a quick summary of what the results have been with the X2000 thus far on the existing railbeds and the character of the lines over which it travels.

Mr. CLAYTOR. There are two phases. The first phase was the engineering phase to check out the safety, the ability to reach the necessary speeds, and the operation. That has all been 100 percent successful.

We have operated the train at just over 150 miles an hour on our track up in New Jersey in the test run. We have checked the tilt mechanism. And we're now being permitted by the FRA in the present market test, to operate at 135 miles an hour, instead of just limiting it to 125.

And, I believe, if we get the trains in this country, they will be built in this country. Amtrak is not going to buy anything abroad. We import the technology, but we build the trains here. We hope that we'll be able to operate at up to about 140 miles an hour.

It's going to depend, of course, on the ability to accelerate and other things like that, that we finally develop in the final model. But I'm satisfied that this has been successful.

Second, we've done a market test to see what the reaction of passengers is. So far, it's been almost 100 percent favorable. The passengers think it's a great ride.

My own view is that the somewhat improved running times from here to New York are not the big deal. We may get 20 minutes out of the schedule, which would be very important if we're talking about competing with airplanes. But I think the most important factor is that this train rides as smoothly as your desk rides right now, not moving. It really does.

The problem with our existing equipment, all of which was designed for speeds of basically 80 miles an hour some years ago, because there wasn't anything else available, is not really designed to ride smoothly at 125 miles an hour.

So it jiggles and it vibrates and it's noisy. And a businessman can't write. That is a great drawback. I think that a lot of businessmen who are still on the shuttle would be on the train, if they

could ride the X2000 quality of ride everyday. You can have conferences. You can write. Lawyers can write briefs. And they love to get the time to do that on a train without interruption.

So, I think the market test has been equally good. We plan to do exactly the same thing with a competing train that the Germans have developed called the ICE, the InterCity Express. And we want to test all of the same factors with it, as well as we've done with the X2000.

POTENTIAL TIME SAVINGS

Senator LAUTENBERG. You said that there was a savings, a time savings, even under the existing conditions. Are you comfortable with that reduction in travel time?

Mr. CLAYTOR. We don't know, until we get the final model and we can test it out completely. We'd like to have more power on the train than this one has, because we need more acceleration.

One of the important things is to have a lot of acceleration, so that when you slow down—as even the tilt train must do for curves, to some extent—you can then speed up quickly and make up time on the straight. And so there are a number of other things that we will be developing.

I don't think we're in a position to say exactly how much time we can save between here and New York with the ultimate model, but it obviously will be something significant.

Senator LAUTENBERG. Does it presently save time even in its demonstration mode?

Mr. CLAYTOR. We have saved, I believe, above 10 minutes on the nonstop run between Philadelphia and New York, for example.

On the nonstop runs, we have saved some time, but our regular trains, the X2000, is running on a Metroliner schedule. We have to leave each station at the same time that's listed in the schedule, so we can make up time between stations, to some extent, but not in the overall picture. That's the way we're now doing it.

Senator LAUTENBERG. OK. By the way, I confirm what the passenger response has been, since I rode the train. We rode together. And it was a wonderful ride. One can write even if one couldn't write before one got on it.

Mr. CLAYTOR. That's right.

Senator LAUTENBERG. It's so smooth. But it was an excellent ride, very comfortable, and none of the swaying and shaking as you made the trip.

ADMINISTRATION'S HIGH-SPEED RAIL PROPOSAL

Mr. Claytor, President Clinton has called for an investment program of \$1.3 billion in maglev and high-speed rail projects over the next 5 years. How do you see us allocating these funds in order to maximize the expansion of high-speed rail systems across the country? Where and how would you see those investments develop?

Mr. SULLIVAN. This is the \$1.3 billion, Mr. Chairman, that the administration is proposing—

Senator LAUTENBERG. Pull the mike closer.

Mr. SULLIVAN [continuing]. That the administration has proposed. We haven't actually sat down and laid out how that money

should be used from Amtrak's standpoint, but certainly funds should be put into high-speed rail corridors, which the administration has identified throughout the country.

We are working with the FRA now to do a demonstration run of the X2000 around this Nation, including the high-speed rail corridors. And we would encourage consideration of investment in some of those corridors.

New York State is one that we work very closely with. They have put in a 1036 application for ISTEA funds to do a demonstration project in New York State for high-speed rail. And we're already running 110 miles an hour in New York State with our TurboLiner trains. And so that could be one corridor in which some investment could be made.

Senator LAUTENBERG. Do you think that the funds ought to go into a couple of high visibility projects or should we use these funds to finance several projects across the country? Because you're going to have to do some selling, or I'm going to have to do some selling. We've tried to get friends from this body and from the House to join in. Some of them may not quite see the value in a particular congressional district or a State, but we've got something on the market here. And that's why I asked that question.

Mr. CLAYTOR. Well, Mr. Chairman, as I pointed out in my testimony, a major part of the work that has to be done on a corridor has got to come from other than Amtrak and Federal sources. It's got to come from highway funds. It's got to come from the local community.

For example, I've just learned that the city of Seattle is going to put \$600,000 right away into rebuilding the Chain Street Station. That type of expenditure is going to have to be done in the local corridors.

And my own view is that you can make the greatest progress by picking a corridor and working on that as the first of the off-corridor areas to really develop high-speed, rather than trying to spread it over several, because there won't be enough money to do very much if you try to do it across the board.

Now, one of the things we could do is to say, "Which one are you going to pick first?"

We'll pick the one that will produce the most other money from the State and the local community. We will not have enough money in \$1-plus billion over a 5-year period to do all of the work that has to be done on these corridors. It must be done locally. And whoever comes up with the most money to do the most locally, I would say, ought to be given consideration to be the first trial.

ALLOCATION OF GAS TAX REVENUES

Senator LAUTENBERG. It sounds reasonable. You mentioned earlier that the 2.5 cents that was allocated for deficit reduction would be going into highways. I think a small correction there is it's going into the highway trust fund.

Mr. CLAYTOR. Right. There is a highway trust fund. Yes.

Senator LAUTENBERG. Right. And, therefore, we might, legislatively, in the future or through a regulation, be able to call on some of those funds for use in rail passenger service.

When we originally drafted the Intermodal Surface Transportation Efficiency Act [ISTEA], I proposed making intercity rail eligible for highway funds. And it passed the Senate, but, unfortunately, in the conference, it fell off of the table.

We're going to be here. And we're going to keep working on getting it back.

Mr. CLAYTOR. Yes; to me, that's of critical importance, if Amtrak is really going to keep going as a vibrant alternate means of transportation.

PRIVATE SECTOR FINANCING

Senator LAUTENBERG. I'm with you. Amtrak has worked with the private sector to try to finance some of its capital programs. What's been the experience to date? Are there any lessons learned that we ought to note?

Mr. CLAYTOR. Well, we are financing a significant amount of new equipment, largely, privately. I had said that we ought to try to have 50 percent of our new equipment costs paid by a Federal Government investment and the other 50 percent raised from private sources. Unfortunately, so far, we haven't gotten the Federal Government investment. We've gone ahead and financed up to 70 and 80 percent privately.

The problem is that you've got to service the investment and you've got to pay it back. And we don't think we can afford to do very much more of that until we can get Federal Government investment.

I think doing more than 50 percent private financing is going to put Amtrak in a debt hole that we can't afford.

POTENTIAL FOR HIGH-SPEED TO COVER COSTS

Senator LAUTENBERG. In your formal remarks, you stated that Metroliner service trains cover over 200 percent of their long-term operating costs.

Mr. CLAYTOR. Most of them do, yes.

Senator LAUTENBERG. Do you think it's reasonable to expect the 100-percent long-term operating result from other high-speed corridors?

Mr. CLAYTOR. I think it would be reasonable to do that. I would hope that we would pick a corridor with that potential and that we could do that. Remember, that is the long-term operating costs. It does not include the necessary contribution to overhead, which includes an awful lot of very heavy expenses, especially in the Northeast corridor.

Senator LAUTENBERG. In Amtrak's experience, we've learned that it's virtually impossible for any high-speed rail system, at the outset, to fully cover their capital costs without Federal money, public assistance.

Mr. CLAYTOR. Yes.

Senator LAUTENBERG. Representations have been made that the French TGV system and other European systems will be able to fully cover their capital and operating costs. Are those assertions ones that hold water?

Mr. CLAYTOR. Let me comment on that, Mr. Chairman, if I may. The capital costs for the TGV construction has already been raised by French Government money with bonds. The effort is being made, and is successfully being made, to pay those bonds off ex post facto. You don't raise the money to start. The government puts the money up. And then if the system is successful, you can then pay the bonds off.

Now, France has got a situation that is extraordinarily favorable for that, that I'm afraid we don't have. The French Government has a national policy that makes a great deal of sense for a country the size of France—it's a densely populated country—without any domestic source of oil.

Oil that is used for transportation or anything else has to be imported. They have developed an electric grid that's entirely owned and operated by the government, all nuclear power, all nuclear generated power. As a result the power available to pull the electric trains—and electrification is very extensive in France—is very cheap.

The attempt to travel by anything else that uses oil is extremely expensive. They have taxed the use of oil to the absolute maximum, to what would be considered in this country impossible levels, as a matter of national policy, because they have to import.

And they don't want to import it. They want to use domestic sources. They want to use their electricity. And the combination of making it practically impossible to travel by any other means and then making the fuel used relatively cheap, gives you a tremendous step up.

If we prevented people by enormous tax costs from driving their own automobiles, which is what happens in France over any distance, or from flying airplanes, because air's cost of fuel is much bigger than the rail cost of fuel—we would have an additional push.

So we don't quite have the situation that they have in France. France is unique. The other countries do the same thing, but to a lesser extent. France is the best example of a national policy that makes it necessary to travel by train.

And then you make the train travel so superbly good, that it's a good thing, too. So it's a combination of the two, but you must have the inability to travel other ways, which is one of the things that puts it on ice.

Senator LAUTENBERG. That's going to be very difficult for someone in our position, I think.

Mr. CLAYTOR. I'm afraid so.

Senator LAUTENBERG. But we can do the positive thing and make it so good that it's irresistible.

Mr. CLAYTOR. Yes.

Senator LAUTENBERG. And, frankly, I think that can be done at a cost that's very competitive with highway construction—

Mr. CLAYTOR. Right.

Senator LAUTENBERG. And with improving our national airway system. If you've just noticed, there's some sad commentary about the investment that we've put thus far in the automated airspace. Highway projects, also, traditionally, run way over.

And we're going to continue to use and build highways in the country, as needed, but we've got to make room for a balanced transportation network. And that includes an investment in high-speed rail, which, on a passenger-mile basis is relatively small, compared to the subsidies and encouragement we give the others.

Mr. CLAYTOR. Mr. Chairman, the point you made is such an important one that I'm going to emphasize it, too. The difficulty we have is that money assigned for airports and airways is in category A. Money assigned to build highways is in category B.

To try to get the money away from the interests that want to spend it on those things is extraordinarily difficult. But, if one looks at the big picture, we can actually save money by building high-speed rail and not building, as you pointed out, new airports that would otherwise be needed, whole new lanes of interstate highways.

Our whole new interstate highway system is incredibly expensive. The amount of money that it costs is enormous, compared to what it would cost to do what we want to do, but we've gotten in the habit of spending that kind of money in those areas. But if we look at the overall picture, it is cheaper, as well as more environmentally sound, to investigate in high-speed rail than to let that money continue to go into more new airports and airways.

The airways are terribly crowded, too; particularly around New York, Chicago, and Los Angeles. The airways themselves are presenting a tough problem.

Senator LAUTENBERG. If you listen to some of our constituents who live on the approaches to the airports, they'd be supporting rail—

Mr. CLAYTOR. Yes, sir; I'm one of them. [Laughter.]

Senator LAUTENBERG. In a burst of energy—I, too.

Mr. Blanchette, before we turn to my colleague, who has been very patient—Senator Mikulski, we will get to you in just a couple of minutes. I wanted to ask Mr. Blanchette a couple of questions.

Because we get into the question, and I thought that Mr. Claytor handled it very well, of whether or not freight rails can be used effectively and whether we can expropriate property here. I mean, there has to be some compensation.

Mr. Blanchette, in your paper on high-speed rail, you state that "Railroads will enter the high-speed rail arena only on a fully compensatory basis."

One of your member railroads, Conrail, has stated that it must be completely reimbursed for any capital improvements, maintenance and overhead costs associated with passenger service requirements.

Isn't it true that track improvements for high-speed rail, however, will also enable freight trains to move faster and deliver their products quicker than their competitors?

Mr. BLANCHETTE. Well, I think there may be instances in which that is the case. And in that fortuitous circumstance, I would anticipate there would be a joint venture type of arrangement where each would contribute according to his resources and each would derive benefit according to his enhanced benefits from the joint venture.

So I would say that that may be a different use of words, but I think that both the Conrail and the general policy statement attached to my testimony are compatible.

Senator LAUTENBERG. Well, then, I don't think—let me not prejudice any point of view here, if I can avoid it. Should the freight railroads be completely reimbursed for enhancements that also benefit them?

It seems that they ought not to be looking to passenger rail service to make improvements for the national good that otherwise would not be made, while expecting to get a return that would otherwise not be there.

Mr. BLANCHETTE. Mr. Chairman, I think that history will reflect that there have been few, if any, subsidies that have worked in the direction of the Government's to the freight railroads in respect of passenger service within the last 50 years.

So I don't think that's much of a fear. I think that we ought to concentrate our efforts—and Mr. Claytor stated the instances quite well—on instances that are kind of beyond the passenger and freight railroads to control; for example, grade-crossing protection.

We know that very few trains have been known to leave the tracks in search of an automobile. And consequently, that is really a highway problem. And I think that there has to be a contribution there that doesn't enhance freight service and it doesn't enhance passenger service. It's just a reality of life. Just as you don't have truck lanes going across the runways at LaGuardia Airport, you shouldn't have automobiles traversing the rights-of-way of high-speed rail without some kind of protection.

So that's something that doesn't benefit the rail mode. It benefits the highway mode. So we can take a whole series of things, such as single lane and protection and things like that way that don't—that enhance the public interest and don't enhance private interest.

Senator LAUTENBERG. I think that there's a risk, a high risk, to extending that argument, because there are lots of people who would say, "OK. If that's a highway enhancement, stop sending trains over these things and just let's not have the delays that are caused by rail service going through there."

So is there any operating or maintenance costs for high-speed rail for which the freight railroads will not be looking for compensation? Can you think of any areas?

Mr. BLANCHETTE. We will not be looking for any compensation. I think that—I'd hate to have an exhaustive list of examples, but where a freight railroad system is planning, for example, to improve its dispatching or its cab signal capacity, and the high-speed rail system will also require that in those corridors, there could be a useful dialog as to combining the investment.

You wouldn't want the rail mode to make an investment that's incompatible with the passenger mode. In those instances where rail freight and rail passenger would both serve and benefit by an enhancement, then I think there could be a useful joint venture in those areas; heavier rail, welded rail.

So I think that there are instances, without enumerating them, where there could be, but I must say, Mr. Chairman, that it bemuses me somewhat the concept that anybody would consider that the solution to the highway grade-crossing problem would be to

have the train stop, because if you stop the trains which carry 38 percent of the intercity traffic in this country, you're going to talk—you will not be able to see New Jersey while standing in it.

Senator LAUTENBERG. We agree. And that was a counter to your commentary about the fact that rail crossings were a highway problem and not a rail problem. I mean, you can't shift the burden of responsibility that way.

It's good for everybody if we can eliminate those crossings. And that's what we ought to do.

Mr. CLAYTOR. Mr. Chairman, could I mention just one thing? The way I'd like to put this, in general terms, is that the freight railroads should be reimbursed for their net costs.

Now, I can give you an example. Suppose we were going to put in an automatic train control system that would enormously benefit the railroads, that they don't have the money to do, weren't going to do, but it sure would be good for them if it were done. We would pay for that.

That's a net plus, but there's some other things that are net minuses. I balance them off and look at this as a net—anything that's net costs to the railroads has got to be reimbursed, but you have to balance that against benefits that they need, that they can use.

Now the main benefits they can't use, for example, just putting cab signals in, would be of no use at all to the freight railroad. It would enable us to run faster under the FRA rules, but that, alone, is not an improvement that would save them any money. It would not do any good.

So when I say net, I mean we have to look at what is a real benefit to the railroad versus the real cost of the railroads and then net it out. And that would be the way I'd try to approach it.

Senator LAUTENBERG. I think, also, it's important to note that if the Federal Government hadn't designated or granted millions of acres for rail access, there wouldn't be a freight railroad. So there's very few freebies or subsidies that aren't shared along the way.

Senator Mikulski, thank you for your patience.

Senator MIKULSKI. Thank you, Senator Lautenberg. Actually, my line of questioning was going to go to freight railroads.

In Maryland, and particularly the Baltimore-Metropolitan area, freight rail is really bread and butter in terms of jobs and keeping core industries going. One day's delay of freight delivery to General Motors Mini-Van, now, with their new ontime delivery, could be very costly to the line as a whole.

So we're very conscientious about the need to maintain dual use—what I call dual use compatibility—between passenger and freight, which then takes me to my question to you, Mr. Blanchette, just to be sure I understand your comments to the chairman.

Under the existing system that we now have in the Northeast corridor, there is what I think you would regard dual use compatibility. Am I correct in that?

Mr. BLANCHETTE. Yes; in which the freight fragment is—

Senator MIKULSKI. When I say dual use, I mean between freight and passenger.

Mr. BLANCHETTE. Yes; in which the freight aspect of it is increasingly decreasing and to the benefit of all, in my judgment, so that it is not minimal, but it is dwindling and will continue to decrease, but it is shared use at present.

Senator MIKULSKI. Now, but there are issues continually around safety, where there is dual use, not only in terms of the scheduling, the switching—we all remember the tragedy between Amtrak and Conrail, which was both human and technological—but also these things at crossings, where there is both a highway and rail intersection, is this correct?

Mr. BLANCHETTE. Well, between—on the Northeast corridor, between New York and Washington, if memory serves, there are no longer any unprotected crossings. So the right thing has been done.

Senator MIKULSKI. Right. But, nationwide, where we are—

Mr. BLANCHETTE. Well, nationwide, you're right, Senator. There are hundreds of—

Senator MIKULSKI. But when we talk about public investments that generate jobs, that save jobs and save lives, this railroad crossing issue would be a significant one.

Mr. BLANCHETTE. It's a significant problem for the freight railroads alone, much less one in which there's high—and I concur completely in Mr. Claytor's analysis that at speeds in excess, I think he said, of 100 miles an hour or whatever the threshold speed was in his testimony, there ought not to be unprotected crossings.

Senator MIKULSKI. Yes; but when I'm talking about dual use compatibility, my question's now related to the existing system, not the high-speed system and not the ultra high-speed.

Mr. BLANCHETTE. OK.

Senator MIKULSKI. Which then, also, to continue that, does the freight rail community see any benefits—just to be clear what you said to the chairman—to itself, if America moves to the high-speed framework, which we are doing; existing tracks, modernization of the tracks, new types of cars themselves, which has been amplified, do you see benefits to yourselves for really rapid delivery of the same product?

Mr. BLANCHETTE. I think it is more—each railroad can speak for itself, obviously, but I think they see more of a business opportunity, just as railroads are getting into various aspects of commuter service, where they once eschewed any thought of staying in that area. Across the country, right around here with MARC and with the Virginia Expressway System, you see railroads looking at an opportunity—

Senator MIKULSKI. But that would be diversification. I'm talking about the actual delivery of freight.

Mr. BLANCHETTE. I think that probably—

Senator MIKULSKI. Will we look forward to rapid freight trains?

Mr. BLANCHETTE. Yes; I think, Senator, that in the corridors that I can think of, I haven't heard an awful lot of discussion that it would benefit the freight service. That does not diminish the enthusiasm which the freight railroads have for increased use on a contractual basis with the passenger service. The freight railroads already do a fairly good job on increased service.

Now, there's obviously going to be a case where with the addition of passenger service, there may be an enhanced opportunity, but I'm saying that that has not been the key that turns this policy statement.

It was an opportunity, a business opportunity, to see greater exploitation of the right-of-way, and an opportunity to show that the railroads, indeed, can be significant contributors to the reduction of pollution and congestion in urban and rural areas.

Now, in areas where, as Mr. Claytor points out—and he is a skilled and excellent negotiator and I can see he's already started the initial negotiating initiative—in areas where a rail freight service would be materially enhanced by an improvement to the right-of-way, we see now what the opening gambit would be in the negotiation. And I think it's not an unreasonable gambit.

Senator MIKULSKI. Well, I don't know about negotiations and gambits. What I do know is, I think the Congress is committed to the fact that we need two types of rail service in the United States of America.

One to move passengers, and the other to move freight. Both are important to our economic development and our economic security. What we're looking forward to is what are those things that would have dual use compatibility and also attitudes from the private sector, as well, that would be trying to look ahead with us, as to what those opportunities are and how the private sector would want to participate in them. And that's what the chairman was getting at.

That's what I'm getting at. We want to have freight service, but it can't always be looked at that it is a cost to or an obstacle to and/or inconvenience about. And whether, in addition to diversification, if they've looked forward to those benefits themselves, recognizing issues around safety, the need to invest in new types of stock.

Mr. BLANCHETTE. Well, I think, Senator, that your point is well taken. And I saw among the chief executive officers who participated in the formulation of this policy, no negative views or no reluctance to endorse this policy. In fact, it was unanimously endorsed by the freight railroads and by Amtrak.

So there wasn't any reluctance to advance the breakthrough that's announced in this policy statement.

Senator MIKULSKI. I'm glad to hear it.

Mr. Chairman, I think that kind of—other questions I have will be for the next panel, if I can stay.

Senator LAUTENBERG. Thank you very much, Senator Mikulski. I couldn't agree more than with your statement about—do we have to search for ways to have our rail service enhanced, whether it's for freight rail or for passenger rail? And they ought not to be at loggerheads.

And when I talked about compensation, I was talking about compensation that results as a matter of increased expense for the freight line. There are going to be benefits, if we enhance the rails for the use of high-speed rail. And they ought not to be done to inconvenience the freight lines.

So, but the worst thing I can imagine would be a tug-of-war between the two interests, because a result would not be for the long-term well-being of our country.

Mr. CLAYTOR. And Mr. Chairman, our joint announcement some weeks ago, in which all of the presidents of the leading railroads to the AAR and myself jointly announced that we are going to be working together.

Two-thirds of our passenger miles come from operations over the freight railroads. And, roughly, two-thirds of our revenue does the same.

So we are working day in and day out with the freight railroads. My experience has been that the only way you're going to do this in a way that benefits both parties is we both have to work together. We're a team.

And I think we've developed with the freight railroads a teamwork approach on, not only our conventional service, but the announcement that we are both going to work together to find a fair way to put high-speed rail on appropriate corridors.

And I think that's the key thing, but we do have to do this in a cooperative venture. In the early days of Amtrak, we spent all of our time litigating with the freight railroads about one thing or another. The result was chaos. You can't do that. We have to be partners.

We were running trains over the same railroad tracks. We've got to work together on it. We are now doing that. And I think we're going to be able to do it in high-speed rail. And I think that there will always be differences of opinion. We argue about things. We negotiate various arrangements, but together we've got a common objective. We've got to stick to that common objective or neither one of us is going to get any where.

Senator LAUTENBERG. I couldn't agree more. I thank you both. We have additional questions which will be submitted for the record. We have other witnesses. And at this point, we'll say thank you.

Mr. CLAYTOR. Thank you, Mr. Chairman.

PANEL II

GENERAL ACCOUNTING OFFICE

STATEMENT OF KENNETH M. MEAD, DIRECTOR, RESOURCES, COMMUNITY, AND ECONOMIC DEVELOPMENT DIVISION

ACCOMPANIED BY DR. FRANK MULVEY

NONDEPARTMENTAL WITNESSES

HIGH-SPEED RAIL ASSOCIATION

STATEMENT OF JOSEPH VRANICH, EXECUTIVE DIRECTOR

TEXAS TGV CORPORATION

STATEMENT OF LARRY SALCI, PRESIDENT

URS CONSULTANTS, INC.

STATEMENT OF ROGER FAULKNER

FLORIDA DEPARTMENT OF TRANSPORTATION

STATEMENT OF CHARLES H. SMITH, MANAGER, HIGH-SPEED RAIL PROJECTS

INTRODUCTION OF WITNESSES

Senator LAUTENBERG. Mr. Ken Mead, Mr. Joseph Vranich, Mr. Larry Salci, Roger Faulkner, and Charles Smith.

In order to try to move this along, we're going to get somewhat more strict about the time for opening statements. And we'll try to follow on with shorter questions from the Senators, as well.

In the following order, we'd like to hear your testimony—5 minutes. The light will indicate when we've used our time. And I would ask you to stop promptly at that point.

First, let's hear from Ken Mead.

STATEMENT OF KENNETH MEAD

Mr. MEAD. Thank you, Mr. Chairman. Accompanying me is Dr. Frank Mulvey, who heads our work in the high-speed rail area.

We have a very straight forward message today. First, I'd like to establish a frame of reference. There are a number of approaches to high-speed ground transportation. Not surprisingly, the cost increases with speed. Incremental improvements to existing rights-of-way, such as those planned for the Northeast corridor, will allow speeds between 125 mph and 150 mph, at a cost of about \$2 to \$10 million per mile.

Speeds achievable with TGV type of technology, that is between 150 mph and 200 mph, require new, dedicated, and reasonably

straight rights-of-way, raising the cost to between \$10 and \$20 million per mile.

Maglev systems, which are the top tier, require very expensive guideways, which further raise the cost to between \$20 and \$60 million per mile.

For a hypothetical system of about 200 miles in length, achieving speeds greater than 150 mph, will range between \$2 and \$12 billion, depending on the approach used.

A number of systems have been proposed. These proposals include the five corridors designated for grade-crossing improvements, as well as the French TGV style systems, as in Texas, and maglev, as proposed for the route between Anaheim and Las Vegas.

These proposed systems plan to rely mostly on private financing. None of these projects have moved much beyond the planning stage.

We've met with bankers at a number of the major investment houses to discuss financing, Mr. Chairman. And this is, I think, probably the most important part of my message today.

They were virtually unanimous in their view that no high-speed ground transportation systems will be built in this country without a greatly increased Federal commitment.

There are three key risk areas. The first is that there is no U.S. experience with high-speed ground transportation. And there was a general view that at least in the near term, revenues will not cover capital costs.

Second, these are very large-scale projects which could be subject to construction delays and cost overruns.

Third, there are major political risks in permitting, obtaining rights-of-way, securing environmental clearances, and the like.

If the Federal commitment were to increase, it could take a number of forms. The Federal Government could provide financial assistance during the high-risk initial development and construction phase of the project. This could take the form of equity capital or loan guarantees to induce private investment.

The Federal Government could also exempt high-speed ground transportation bonds from the State volume cap on private activity bonds thereby, putting high-speed ground transportation on the same footing as airports and seaports. I note that there's recent legislation on this point.

Direct loans, through a revolving loan fund, is another option. That has been recommended by the recently issued report from the Infrastructure Investment Commission.

Value-capture is another technique. The value-capture relies on the use of the expected increase in property values and the use of those revenues to repay government investment in a project.

Because the size of these projects is going to be enormous, some combination of financing techniques will be necessary.

How much the Government should invest in high-speed ground transport depends on the expected benefits. The Government must balance these benefits, of course, with the likely cost of the systems. Unfortunately, key data are lacking. And this makes it very difficult to forecast traffic diversion, particularly, from the automobile.

This is a very important issue, because the data would bear directly, not only on ridership forecasts and how many people will pay to ride high-speed rail, but also what impact high-speed rail will have on congestion, air quality, and energy consumption.

A quick word on where we are in terms of the Federal commitment. Most of the Federal Government's effort has focused on the Northeast corridor; \$2.5 billion to date, and about \$1.3 billion to go by the turn of the century to achieve speeds of 150 mph.

There has been some planning money appropriated under the ISTEA legislation that was enacted by the U.S. Congress. For example, \$30 million has been authorized, for eliminating grade crossings in five potentially high-speed corridors.

Also, the ISTEA authorized, but Congress did not appropriate, \$725 million for a national maglev prototype development program. And President Clinton has proposed a \$646 million program dedicated to maglev and high-speed rail. Because of the confusion regarding Clinton's proposal, we were not sure whether the \$646 million was in addition to the authorized \$725 million.

In summary, we see three tiers of questions facing the Congress, Mr. Chairman. First, should the Federal commitment be increased? Second, by how much? And third, what type of technology and in which corridors?

Thank you.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you, Mr. Mead. Your complete statement will be inserted in the record.

[The statement follows:]

STATEMENT OF KENNETH M. MEAD

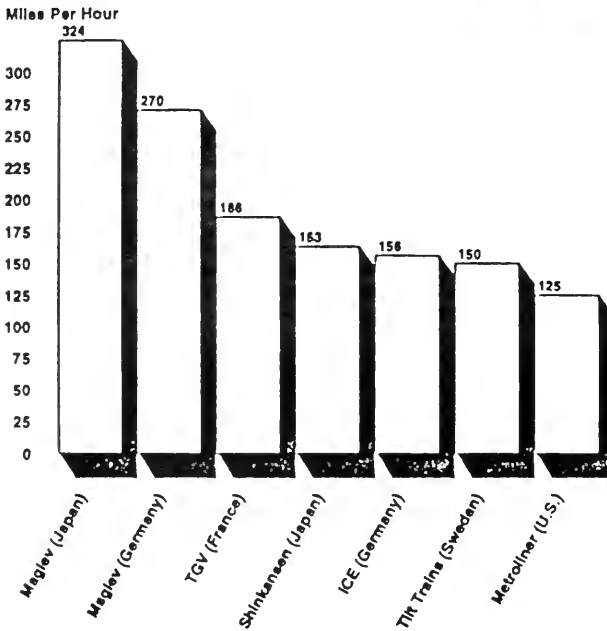
Mr. Chairman and Members of the Subcommittee: We appreciate the opportunity to testify on the issues surrounding the introduction of high-speed ground transportation (HSGT) in the United States. Our work to date on HSGT is based on meetings and discussions with members of the financial community with experience in financing these types of projects, Amtrak and other railroad officials, HSGT project planners, and other transportation analysts. We have analyzed the available data on the progress of HSGT both in the United States and abroad, and to gain some first-hand experience, we have ridden on several of the new systems, including the Swedish X2000 train. Our work is being done in response to interests expressed by both the Senate and House Appropriations Committees and the House Committee on Energy and Commerce.

By high speed we refer to systems capable of sustained speeds of at least 125 mph.¹ Advanced high-speed rail systems, such as the French TGV and the Japanese Shinkansen, have carried millions of passengers over the years at speeds between 130 and 185 mph, and magnetic levitation (maglev) technology is being developed in Germany and Japan that could carry passengers safely and efficiently at speeds over 250 miles per hour. Progress toward increased speeds in the United States has been limited to incremental improvements to existing Amtrak routes, especially in the Northeast Corridor, where Amtrak's Metroliner trains achieve 125 mph speeds over some stretches between Washington and New York. (See fig. 1).

Policy choices with significant financial impacts will have to be made before HSGT is developed in the United States. High speed systems, like those of Europe and Japan, will be very expensive to build and no organization, thus far, has been willing to bear the risk of investing in HSGT in America.

¹In the United States, most Amtrak trains travel at speeds below 79 mph, and often average only 50 to 60 mph.

Figure 1: Relative Top Speeds of High Speed Ground Transportation Systems



Types of High Speed Ground Transportation Systems

Our basic points are as follows:

- The United States could pursue several levels of technological improvements to make HSGT a reality here. Each higher level of improvement would result in greater speed, but only at a greater cost. Generally, incremental approaches that build on the existing rail infrastructure would allow increased speeds of up to 150 mph and would incur the lowest capital cost. This has been Amtrak's strategy in the Northeast Corridor. More advanced approaches, such as the French TGV or maglev, are much more costly and are perceived as being more risky by potential investors. Because these systems are untried in the U.S. environment, there is uncertainty about whether they could generate revenues sufficient to cover operating costs, repay lenders, and produce an acceptable return on investment.
- In addition to Amtrak's efforts, more than a dozen HSGT projects have been proposed around the nation, but none has obtained private funds to begin construction and federal support has been minimal. These proposals have tried, unsuccessfully, to rely largely on private capital to fund system construction, but our review shows that it is unlikely that any major HSGT projects will be built if developers must rely primarily on private capital. Until HSGT systems are proven to be successful in the United States or until the public sector decides that there are sufficient public benefits to justify underwriting some of the risk, private financing sufficient to launch a major HSGT project will not be forthcoming.
- If HSGT systems are to be built in the United States, increased federal leadership and financial commitment will be necessary. To date, federal involvement has concentrated on underwriting Amtrak's program to bring about incremental improvements in the Northeast Corridor and to authorize funds for further research on HSGT. The financial community believes that federal commitment, especially through substantial financial assistance for the initial HSGT systems, is necessary to leverage significant amounts of capital from the private sector and to help establish public-private partnerships to develop additional HSGT systems.

—Both private and public investors require realistic forecasts of potential ridership. Private investors need the data to project expected returns on investment. The public sector requires better data to judge the appropriate commitment of public resources. The federal commitment to HSGT must be proportional to the expected net social benefits, such as congestion relief and reduced pollution, that could result from investment in HSGT. Accurate estimates of the size of these benefits also depends on reliable forecasts of ridership. However, some data, especially for auto travel, are lacking and without these data accurate estimation of system use and social benefits is problematic. In addition, many social benefits are not easy to monetarize making it difficult to compare benefits with costs. While the data can never be perfect, there is room for considerable improvement. Given the size of the investments at stake, the data bases and benefit estimates should be improved.

I would like to turn to a more detailed discussion of these points.

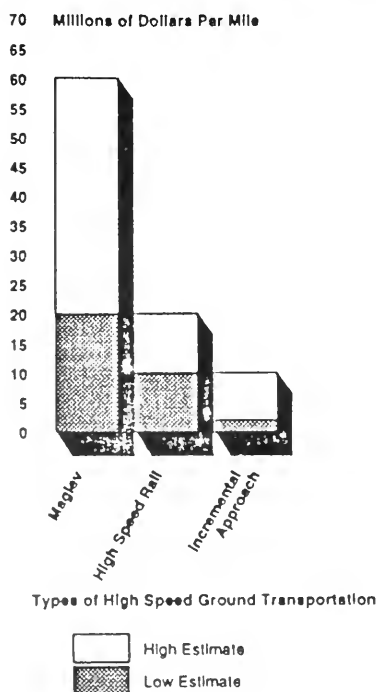
QUESTIONS TO BE ADDRESSED BEFORE INCREASED COMMITMENT TO HSGT

Federal participation in developing HSGT in the United States depends on the answers to some basic questions: who? what? where? and why? Who will elect to ride such systems (and how much will they pay)? What kind of system should we build—rail or maglev? Where should such systems be built—in densely traveled corridors or between airports? Why should the federal government be involved—what are the social benefits from such systems? These questions are not easy to answer, and they are interrelated. Where we choose to build a system will help determine what type of system we should build. Who chooses to ride the system can help answer what public benefits might accrue. There is one other question, however, for which we do have at least a qualitative answer, and that is how much will it cost to bring HSGT to America? Quite a bit; the exact amounts depend on which technologies are chosen.

PERFORMANCE AND COSTS VARY FOR DIFFERENT HSGT TECHNOLOGIES

Each of the technology options performs differently and carries a different price tag. Not surprisingly, the cost of these options increases as the design speed increases. According to a recent estimate, the capital costs of achieving high speed operations for a hypothetical 200-mile-long system ranges from \$500 million for incremental improvements to existing tracks that could bring speeds up to 110 mph to more than \$12 billion for a maglev system that might allow speeds of more than 200 mph. (See fig. 2.)

Figure 2: Relative Costs of High Speed Ground Transportation



The lower cost option would achieve higher speeds by improving the existing track, roadbed, and signal systems, and eliminating grade crossings. According to the National Research Council, the cost to upgrade an existing rail line to allow speeds of about 110 mph would be about \$2.7 million per mile.² For most Amtrak routes outside the Northeast Corridor, this would represent a significant improvement over current conditions. Speeds on most Amtrak routes are restricted to below 79 mph, and on some sections of track, considerably below 79 mph. To achieve speeds of up to 150 mph while continuing to use existing rail infrastructure would require electrification of the rights-of-way and construction of additional track to permit high-speed passenger trains to pass slower freight and commuter trains. The capital cost to achieve speeds approaching 150 mph could range up to \$10 million per mile.

PROGRESS SO FAR LIMITED TO INCREMENTAL IMPROVEMENTS IN NORTHEAST CORRIDOR

To date, most of the improvements in rail operating speeds have been in the Northeast Corridor. Metroliner trains travel over electrified rights-of-way between Washington and New York at speeds up to 125 mph. North of New Haven, Amtrak must use diesel locomotives and speeds are further reduced due to the numerous curves between New Haven and Boston. Amtrak is currently experimenting with the Swedish X2000 tilt train. Tilt trains can traverse curves at higher speeds and, if adopted, can help shorten trip times significantly between New York and Boston after Amtrak completes its electrification of that part of the corridor. The X2000 is a part of an "incremental" approach to attaining higher speeds, and it is such incremental improvements that Amtrak plans for other corridors around the nation. By using technologies like the X2000 and continuing to eliminate grade crossings, im-

²Transportation Research Board, *Special Report 233: In Pursuit of Speed-New Options for Intercity Passenger Transport* (Washington: National Research Council, 1991).

proving signalling, and making other improvements Amtrak hopes to be able to offer 150 mph service in the Northeast Corridor by the end of the century.

The only major segment of the U.S. rail network owned by Amtrak is the Northeast Corridor. Outside of the Corridor, the railroad network is owned by freight railroad companies. Amtrak recently reached an agreement with the nation's freight railroads over the issue of liability for accidents on freight railroad-owned tracks where high-speed trains would share the track with freight trains. The agreement recognized the need to protect freight railroads from the consequences of accidents involving high-speed passenger trains, but does not remove the numerous logistical obstacles to operating freight and high-speed trains on the same track. Assuming that high-speed passenger service would be relatively frequent, there would be serious interruptions to freight operations. In the Northeast Corridor, some freight traffic is limited to night operations to accommodate passenger trains that operate over the same track during the day. Other costs, such as those for maintaining rights-of-way, will be higher if heavier freight trains share the track with high-speed passenger trains. Regardless of who bears the added costs from joint operation, the nation's privately owned freight railroads will, understandably, examine the impact on their operations before acquiescing to high-speed passenger trains over their tracks.

HIGH-SPEED SYSTEMS BEYOND INCREMENTAL IMPROVEMENTS WILL BE EXPENSIVE TO BUILD

Proposals to go beyond incremental improvements have been advanced by groups other than Amtrak. While Amtrak is often viewed as a potential operator of these systems once built, it has been independent state and regional interests that have advanced HSGT thus far. For HSGT service over 150 mph, new track, new rights-of-way, or entirely new guideways will be required. The French TGV, for example, operates mostly over a dedicated right-of-way and achieves speeds above 180 mph. These types of systems reduce rail travel times so much that they might be competitive with air travel for many trips shorter than 400 miles. Both the French and the Japanese recorded substantial traffic shifts from air to rail following the introduction of high-speed rail systems.³ The National Research Council estimated that capital costs for a TGV-type system could exceed \$3.5 billion for a 200-mile system, or more than \$17 million per mile. Alternatively, lanes could be added to expand capacity of interstate highways. Additional lanes would serve multiple users not just intercity travelers—although not at such high speeds. However, there are problems with widening highway rights-of-way that could frustrate such efforts to expand capacity. In some places where congestion is greatest, the highway is already bounded by development making expansion impossible without acquiring more land—often an expensive proposition.

A maglev system could allow even faster speeds, but also would require an entirely new guideway infrastructure, making maglev more costly than all high-speed rail alternatives. Although successfully tested at 320 mph in Japan and 270 mph in Germany, no high-speed maglev system has ever been placed in revenue service. In fact, the Germans have not chosen to introduce maglev on major routes, but have proceeded, instead, to introduce a new high-speed train that uses conventional railway track—the Intercity Express or ICE trains. A maglev system could cost between \$20 million and \$60 million per mile. The National Research Council estimated a cost of \$6.4 billion for a 200-mile maglev system, or about \$32 million per mile. Some advocates of maglev believe that it is the coming technology and that only maglev can offer Americans such a dramatic improvement in speed and service that they will switch to HSGT in large numbers. Other supporters believe that if the United States chose to develop its own version of maglev, the investment could generate new jobs and develop a new high-tech industry. Still, the cost of building a 200-mile system to serve one route could be twice as high as the \$3.1 billion it cost to build the new Denver Airport, and while the maglev route serves only one corridor, the new Denver Airport connects Denver directly to hundreds of cities around the nation and the world. Like highways, however, airports face serious restrictions on new construction and expansion.

Any HSGT systems that operate at speeds over 150 mph require dedicated rights-of-way except in urban areas, where new rights-of-way are difficult to obtain. There-

³ European nations and Japan have historically followed policies that favor rail over air and auto travel for intra-national trips. Air fares are much higher and investment in the highway systems came later than in the United States, and so rail has preserved a higher market share than in the United States even in markets not served by high-speed trains. Nevertheless, the rail share increased significantly in French and Japanese markets after high-speed service was introduced.

fore, a major part of the cost of such a system will be right-of-way acquisition. As reported last year in our study of HSGT right-of-way issues, both high-speed rail and maglev systems will require new, relatively straight, and level rights-of-way compared with existing rail rights-of-way to eliminate safety and passenger discomfort problems.⁴

Operating and maintenance (O&M) costs of HSGT systems are also likely to be high, relative to those for conventional rail for several reasons. Track and guideways must be maintained to very high standards, and safe operation of HSGT requires expensive signal and control systems. One analysis reported that track maintenance costs are 5 times higher for 125 mph trains than for trains traveling 60 mph. The O&M cost per train mile for a maglev system has been estimated to be about 20 percent higher than that for a high-speed rail system. However, as there is no U.S. experience with operating HSGT systems, O&M costs in the U.S. operating environment can only be roughly estimated until a system is actually put in operation.

PRIVATE FINANCIAL COMMUNITY VIEWS HSGT AS A RISKY INVESTMENT

A general unwillingness to commit private and public financial resources to American HSGT projects is the principal reason why no such projects have progressed beyond the planning stage. On the basis of the projects and analyses that we reviewed and on discussions with members of the financial community who have experience with major infrastructure investment projects, we believe that unless the federal government underwrites a large part of the risk and assumes a larger role in HSGT financing, these projects are unlikely to be built. HSGT development will require a long-term commitment of capital and resources. Because there is little assurance that these systems can earn a positive return on invested capital, they are considered to be very risky investments by private investors.

Private investors will review HSGT projects to determine if the potential returns on investment are commensurate with the level of risk. Equity investors want a correspondingly high rate of return, as high as 30 percent according to some analysts, for investing in a high-risk venture. Providers of debt-capital also want to be certain that the system will generate revenues to pay the interest and repay principal. Moreover, while the discussion below focuses on the risks to private investors, there are also risks associated with public investments. Ridership and revenues may be less than projected leading to larger operating subsidies and to fewer social benefits. Public funds that could have gone for other projects or to deficit reduction would be lost.

According to members of the financial community to whom we spoke, there are several sources of risks for these projects that explain why private investors are unwilling to go it alone.

First, because of the lack of experience in the United States with HSGT, ridership and revenue forecasts may be exaggerated. The financial community typically discounts demand forecasts for demand-sensitive start-up projects, like toll roads and, presumably, HSGT projects. Furthermore, projects are usually expected to generate revenues sufficient to more than cover their debt service needs. For some projects, these "coverage factors" can be as high as 150 percent of actual debt service needs or greater. These relatively high levels of coverage are desirable because they can offset various uncontrollable events that could affect demand and revenues. Unless the financial community believes that HSGT projects can generate enough revenues to both cover debt service and provide a return on investment commensurate with the risks, it is unlikely that private capital will be forthcoming.

Financial analysts with whom we spoke agree that in the near term most HSGT projects will not generate enough revenues from their operations to pay off their capital debt, making such projects unattractive to debt investors. Moreover, new technologies on the horizon, such as tiltrotor and teleconferencing, may compete favorably with all forms of transportation including HSGT.

Second, the large scale of proposed HSGT projects adds to the risk. The larger the project, especially when new technologies are being introduced, the greater the likelihood that delays and cost overruns will undermine the financial feasibility of the project. Generally, projects that issue debt to raise capital will need to begin repaying the debt by a specific date. A concern of potential lenders is that unless adequate revenues or other cash are available on that date, the project could go into default. Furthermore, system start-up delays cause interest to accrue on outstanding debt.

⁴ *High-Speed Ground Transport: Acquiring Rights-of-way for Maglev Systems Requires a Flexible Approach* (GAO/RCED-92-82, Feb. 10, 1992).

Third, large-scale projects like HSGT systems face a number of political risks, in part, because many jurisdictions at different levels of government will be involved in issuing the permits and other clearances needed to build and operate the system. In our review of the problems associated with acquiring rights-of-way for HSGT projects, we uncovered numerous constraints. For example, the proposed maglev route between Anaheim and Las Vegas would face scrutiny by the Bureau of Land Management because of possible disruption of the habitat of several endangered species. These are not the only risks associated with investing in an HSGT project, but they are representative of the concerns of the financial community.

Obtaining either equity or debt financing from private investors may prove problematic for developers of HSGT projects. Investments of equity in a project are often needed before commercial lines of credit can be obtained or investment-grade debt can be issued. However, equity investors often demand high rates of return and a relatively quick payback. Because HSGT projects will have lengthy development and construction periods, it will be difficult to provide the timely payback that equity investors want. Therefore, HSGT developers may find it difficult to obtain private equity for capital purposes. By contrast, bond buyers are generally interested in a secure investment with a guaranteed return over time. Debt instruments are typically rated on the probability that they can be paid off by the project. Equity in the project can bolster confidence in the project's chance of success and thus enhance the ability to raise capital through debt instruments.

FEDERAL COMMITMENT TO HSGT NEEDED TO ENCOURAGE PRIVATE INVESTMENT

Members of the financial community familiar with large-scale projects told us that in order for major HSGT systems to be built, the federal government must make a greater commitment. They stated that until the federal government assumes a major role in HSGT development, thereby reducing the perceived investment risks, private capital generally will not be available. Government involvement in financing could take a number of forms such as providing financial and administrative assistance and equity capital at an early stage, providing loan guarantees, exempting interest income from taxation, establishing revolving loan funds, and participating in value capture strategies. However, any federal financial involvement would need to be evaluated to determine its budget and deficit impacts. If the federal government concludes that a greater commitment to HSGT is warranted, it could help lower the risk to private investors in several ways.

SEVERAL STRATEGIES COULD BE PURSUED BY THE FEDERAL GOVERNMENT TO REDUCE THE RISKINESS OF INVESTMENTS IN HSGT

The federal government could provide financial and administrative assistance during the initial development and construction phase of HSGT projects. This stage is typically a high-risk period for new infrastructure projects because many time-consuming regulatory and financial obstacles must be overcome. Further, several analysts suggested that the federal government is the entity best suited to be the principal provider of equity capital during the early phase of an HSGT project. The early phase—between designing the system and commencing construction—is often the most risky period. Private financial markets want the project to have equity in it before lines of credit or other private assistance will be extended. The federal government could also provide financial assistance through loan guarantees and tax exemptions.

Provide Loan Guarantees.—The federal government could become a guarantor for different components of a project. Under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), a loan guarantee program for HSGT was authorized as an amendment to the Railroad Revitalization and Regulatory Reform Act of 1976, although no appropriations for new commitments have been made under this program. According to HSGT proponents, contingent loan guarantees such as these could induce private debt and equity investments in HSGT. Similarly, the federal government could become a guarantor of revenues for HSGT projects. Such guarantees could be particularly helpful during the first few years of operations, giving the system time to build up ridership and revenues. Again, with such guarantees behind the project, an HSGT developer's ability to secure private financing would likely be enhanced.

Extend Tax-Exempt Status.—The Congress could extend tax exempt status to debt issued to build HSGT systems. HSGT proponents believe that tax-exempt status is critical if these systems are to be built. Tax-exempt bonds are an attractive mechanism for raising capital because bond issuers pay a lower interest rate than on taxable debt, thereby lowering the cost of capital. While the current tax code does not restrict the amount of private activity, tax-exempt bonds issued for airports and wa-

terways, it restricts tax-exempt bond issues for high-speed rail. The limitation on these bonds was imposed in 1986 in response to a proliferation of such bonds for private, profit-oriented projects, and the resultant loss of revenue to the federal government. However, some financial community representatives believe that HSGT, even if developed and operated as a private venture, would clearly serve a public purpose. The Congress last year considered but did not enact legislation to remove this restriction for HSGT. The Congress has again taken up removing the restriction on using tax-exempt bonds to finance HSGT development. However, the benefits to HSGT will need to be weighed against the potential impact on the federal deficit as well as against other initiatives that may also seek to receive favorable tax treatment.

Create a Revolving Loan Program.—Direct loans, through a revolving loan program, is another option for a federal role in HSGT development. Some members of the financial community, as well as the Infrastructure Investment Commission, have suggested that the federal government should establish its own revolving loan fund for infrastructure development or help fund state-level funds for the same purpose. To capitalize such a fund would require a large initial appropriation or several smaller appropriations over the span of several years. HSGT projects, however, are likely to be so large that only a portion of their financing needs could come from such a fund, particularly since HSGT will have to compete with other infrastructure projects. However, loans from such a fund would presumably carry below-market interest rates. Thus, they could help lower the cost of capital for HSGT and enhance their financial feasibility.

Use Value-Capture to Fund Parts of Projects.—Finally, value capture is a way for other government entities to assist the development of HSGT. Under a typical value capture strategy, a local or state government would provide funding for components of an HSGT system, such as a station, in anticipation that property values would increase in the vicinity of the HSGT property after the system is in place. Rising property values could generate increased tax receipts or other assessments which could offset the state's initial expenditure. In this sense, the HSGT system "captures" the benefits of higher future property values, and uses them as a source of funds. In the past, value-capture strategies have been used successfully to provide revenues for several urban transit systems. An innovative value-capture-type financing strategy was used in California, where a new publicly administered but mostly privately financed toll road has imposed fees on new construction in the areas that will presumably benefit from the toll road. These fees will be used to help leverage private capital investments to build the road.

For HSGT, however, value capture could be used to finance specific components of a system, but could not be the major funding source. The plan to build the Tampa-Orlando-Miami HSGT system initially relied on a strategy similar to value capture as the major source of finance, but found that it would not generate sufficient funds and has since revised its financial strategy. Furthermore, it may take several years to generate any revenue from value-capture strategies, since land value increases and development around an HSGT system might not occur until the system's construction or operation is well underway.

Nevertheless, there are a number of options for increased government involvement at all levels in financing HSGT projects. Furthermore, it seems likely that some combination of these options would be necessary to bring an HSGT project from concept to reality. Different financing methods could be used at different "risk points" during a project's development period. For example, the Texas HSR Corporation plans to use different financing techniques in various phases of its plan to bring TGV-style service to the "Texas Triangle" cities of Dallas, Houston and San Antonio. The plan includes using initial equity contributions, tax-exempt debt backed by long-term letters of credit, and after operations and revenues become steady, a public stock offering.⁵ Such a combination of approaches spreads, and therefore minimizes, risk over time and across investors and creditors, thereby making investment in such a project more plausible.

Regardless of how creative high-speed rail developers are with their financing plans, it seems apparent that the private sector alone will not assume all, or even a substantial share of, the risks associated with HSGT development financing. Many states and localities are experiencing financial difficulties, with little, if any, funding resources available for financing high-risk, large-scale infrastructure projects. While the federal government is also faced with making difficult spending choices, it is the only entity capable of underwriting the sizeable risks associated

⁵ The system was originally scheduled to begin service in 1998. Obstacles, including financial ones, have seen the schedule slip and the start up date is now uncertain.

with HSGT projects. Therefore, the federal government would need to assume a major role in financing HSGT if such projects were to be built in this country.

FEDERAL INVOLVEMENT TO DATE

The federal government has provided assistance to Amtrak to improve speeds on the Northeast Corridor. Amtrak has spent about \$2 billion to date and expects to spend an additional \$1.5 billion to complete improvements which it expects will allow 150 mph speeds by the turn of the century.

The federal government has also sponsored the National Maglev Initiative (NMI), which is a 3-year effort to assess the potential role of maglev in the United States. Funding for the NMI, has totaled \$36 million, according to figures provided by the Federal Railroad Administration (FRA). The report is due in the Spring of this year.

In 1991, as part of the ISTEA, the Congress authorized \$725 million for a National Maglev Prototype Development Program. The Congress has not appropriated any funds for this program for fiscal year 1993.

In fiscal years 1991 and 1992, the Congress appropriated \$3 million for HSGT studies in specific corridors, contingent on matching funds. Additionally, FRA has used some of its R&D funds to develop safety regulations for HSGT systems.

President Clinton often offered HSGT as an example of the kind of infrastructure spending that the nation should be making. The new administration has now proposed to spend \$646 million between 1994 and 1997 above and beyond what is already been appropriated for HSGT. Whether this increased spending will signal a change of commitment to the investment community remains to be seen.

FEDERAL GOVERNMENT NEEDS TO WEIGH CAREFULLY THE BENEFITS AND COSTS OF HSGT BEFORE MAKING MAJOR RESOURCE COMMITMENT

Federal resources are scarce and becoming increasingly so. At a time of national belt-tightening, all new projects must be given careful scrutiny to ensure that they are cost-effective. If the federal government decides to invest in HSGT, it will need to be certain that such investments are cost-effective over the long term—that is, that investing in HSGT is an efficient way to capture desirable social benefits.

In order to determine the amount of federal resources that might be committed to developing HSGT in the United States, the Congress and the Clinton administration need good data to determine what social benefits might result from such systems. But, the data often do not exist or can not help determine whether HSGT is the best way to achieve these benefits. HSGT must be evaluated in comparison to alternative approaches. Airport congestion could be relieved by building HSGT or it could be relieved by adding another runway. Air pollution emissions could be reduced by diverting auto traffic from congested highways onto HSGT or stricter emissions standards could be adopted.

In order to determine the relative cost-effectiveness of HSGT, better estimates of potential demand are needed, but there are gaps in the necessary data. The data are either too aggregated or do not exist at all. For example, diverting auto traffic can be an important source of public benefits, but there are virtually no data on intercity auto travel that could be useful for forecasting demand for HSGT. In addition, there are problems with translating social benefits into comparable monetary terms. For example, how much is it worth to remove a ton of automobile-generated air pollution? How does the fact that the reductions occur over a widespread, often non-urbanized area affect the estimates of the benefit? How reliable are the estimates of the relationships between emissions and health costs? How much, if anything, beyond the current market price of energy is reduced reliance on foreign petroleum worth?

While there are many problems with calculating the potential social benefits from investing in HSGT systems, the federal government could consider investing in developing better data on which to base demand forecasts for HSGT. Although data collection can be costly, the cost will be relatively insignificant compared with the size of the investment at stake. Gaining improved prior information on the likely success of an investment in HSGT seems to be the prudent course of action.

CONCLUSION

The decision to increase spending for HSGT is an important one that must be made at a time when efforts to pare down the size of the federal deficit are making discretionary dollars increasingly scarce. Yet, without an increased federal commitment, HSGT will not advance in the United States.

If the Congress decides to increase the federal role in developing HSGT, the Congress will need to balance the resources it provides between continued support for

incremental improvements by Amtrak and underwriting the risks of more ambitious projects through forging public-private partnerships. The Congress will also need to decide where to target the resources it makes available for specific HSGT projects. This will require a fuller understanding of the benefits and costs of individual HSGT projects, and gaining that understanding requires, in turn, reasonably reliable data. Better information will help the Congress as it sets priorities for the future of HSGT in America.

Mr. Chairman, that concludes our testimony. We would be happy to respond to any questions you might have.

STATEMENT OF JOSEPH VRANICH

Senator LAUTENBERG. Mr. Vranich, you're next, please.

Mr. VRANICH. Thank you very much, Mr. Chairman, Senator Mikulski. We appreciate the opportunity to appear here today.

I represent a diverse coalition. We're now named the High-Speed Rail/Maglev Association, because interest in that has been growing so much. And our coalition is united in supporting both steel-wheel and maglev train systems.

We have a membership that includes railway suppliers, aerospace companies, labor unions, electrical utilities, universities, and others.

At the outset, on behalf of our board of directors and members, I want to express our appreciation to you, Mr. Chairman, for your work to improve Amtrak's Northeast corridor.

I'm convinced that the demonstration of the X2000 train, which is, indeed, drawing rave reviews, is an outgrowth of your commitment to improving conditions for America's beleaguered travelers.

And, also, Senator Mikulski, your support of the maglev program has been an inspiration to many of our high-technology members.

We also are pleased that President Clinton has gone on the record that he would bring about the development of high-speed rail. And this is a new day for us.

Our submission for the record is not the usual testimony, but it's what we call our blueprint for high-speed rail, which we hope you will put in the record in its entirety.

Senator LAUTENBERG. It's noted.

Mr. VRANICH. The document represents specific proposals to induce private funding into high-speed rail, public-private partnerships, as well as, of course, sharing the cost through public moneys.

There are a number of tools that could be used or a menu of things, so to speak, like tax-exempt bond financing, a guaranteed obligations program, investment tax credits, diversion of defense funding and, of course, stable capital funding for Amtrak's Northeast corridor.

And I want to offer a specific plug for Senator Bob Graham's bill, introduced on Thursday, S. 438, a bill to put high-speed rail tax-exempt bonds under the same rules as airport tax-exempt bonds.

I think the most important sentence I could say here today is this: Technology is not the issue. We could build these high-speed trains, but to bring them from concept to reality, we need to eliminate the institutional and the financial roadblocks.

The interesting thing about our proposals is that the recommendations for high-speed rail include only those programs comparable to aviation or highway programs already in place or that have served those modes for many, many, many years.

And also for the record, high-speed rail systems can create jobs. And I believe that representatives from the Ohio or Texas or Florida projects and so forth could better tell that story than I. I think this is a way to create jobs in an environmentally benign way.

If we really want to be serious about reducing oil imports in this country, then we ought to get to this high-speed train business.

If we are serious about providing safer travel, we ought to be building high-speed train systems. The most startling virtues of these trains is that in Japan, the Japanese bullet trains have operated for 27 years; in France, the TGV's for 10 years. Together, they've carried almost 3.5 billion passengers. And, Senator, there's never been one, not one, passenger fatality.

If the United States built transportation systems based on safety considerations alone, we would have high-speed rail up and running in some of our busiest travel corridors.

Prior to concluding, I do want to, more or less, adlib one point here. I'm a very strong supporter of Amtrak. Those of you who have read my book, "Super Trains," know I gave no quarter in making the case for Amtrak, but, for the record, I do want you to know that I get disturbed when I hear Amtrak appear in a public forum and make a couple of comments like they made today.

I have a high regard for Graham Claytor. And in a couple of instances, I think he's being not as well advised as he could be. I believe that it should be noted for the record that the French TGV system, the original line, was built with private funds, indeed, through the Government guaranteed loan process. It should be known that the second system was built 85/15 percent—85, private funding; 15 percent public.

I'm saying this, not because I think these same formulas will work in the United States, but it plays into the opponents of high-speed rail hands when the chairman of Amtrak sits here and lets people assume that the whole system, the TGV system, was built totally with private funds. And that was an inference that people in this room could have drawn.

I'm also becoming increasingly concerned about the term "high-speed rail" for trains as slow as 100 miles an hour. We had trains doing 120 miles an hour, 110 miles an hour, back in the 1930's. And I think, while I'm in favor of incremental improvements to Amtrak, totally in favor of it, I would like to point out that the Amtrak organization is now starting to take the term "high-speed rail" and water it down. It's watering it down to where I fear it might become a low goal kind of thing.

And what I'm worried about is—well, let me put it this way: I used to be the Boeing public affairs director in Washington, DC. And with Boeing, I never argued for small airplanes for DC-3's to land on. No; you argue for big airplanes. When I was with the roadbuilders, we didn't argue to build small two-lane country roads. We argued to build new interstates, the best.

And I, as long as I am president of this organization, will define high-speed rail as trains capable of traveling at sustained speeds of 150 miles an hour and above. True high-speed rail, we can make a true contribution to removing people out of our congested aviation system.

And I think, with that, I'll simply conclude by thanking you, again, for the opportunity to be here. Our members, coast to coast, are gratified with your interest, Mr. Chairman.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much, Mr. Vranich. We have your prepared statement and it will be made part of the record.

[The statement follows:]

BLUEPRINT FOR HIGH SPEED RAIL

HOW THE FEDERAL GOVERNMENT COULD HELP BRING ABOUT HIGH-SPEED GROUND TRANSPORTATION SYSTEMS

SUMMARY

President Bill Clinton has gone on the record during the campaign that he would bring about high-speed rail to the United States. The Clinton Administration could assist many states and industries that now are in various stages of planning high-speed rail systems.

This paper presents a Federal Action Plan, with specific proposals outlined as follows:

- I. Financial and Institutional Incentives
 - A. Divert Defense Funding
 - B. Tax-Exempt Bond Financing
 - C. Guaranteed Obligations Program
 - D. Investment Tax Credit
 - E. Amtrak Corridors/Stable Funding

- II. Long-Term R&D and Competitiveness Issues
 - A. Fund Maglev Program

This plan is comprehensive. The recommendations for high-speed rail include only those programs comparable to aviation or highway programs already in place or that have served those modes for many years. The Administration could consider highlighting the following rationales for undertaking a high-speed rail initiative:

- The need for more transport capacity
- Job Creation
- Environmental Benefits
 - Energy Savings
 - Reduction in Pollution
 - Land Savings
 - Safest Form of Travel

President Dwight Eisenhower is known for establishing the Interstate Highway System. President John Kennedy, the Apollo program. It's time once again for visionary thinking. Bill Clinton has a golden opportunity to be known as the President who launched the latest transportation innovation in the United States -- high-speed, high-tech, super-safe trains.

INTRODUCTION

President Bill Clinton went on the record repeatedly during the campaign as being in favor of a high-speed rail program for the United States. He presented the public with sound reasons for such a program, saying:

"I strongly support the development of high-speed rail because we need to ensure that we possess a transportation system that boosts American productivity and international competitiveness."

"Passenger rail service creates jobs, conserves energy and provides an opportunity to avoid airport expansion."

"I think we ought to take defense cuts and invest them in building an economy of the 21st Century, including ... high-speed rail in particular. A half a million Americans would ride fast trains every day if we built them ... It will create an unbelievable number of jobs and really help our economy. Also, as you know, it will be good for air pollution out there in California and on the East Coast."

"A Clinton Administration will use a portion of transportation funding and possibly funds transferred from defense to create a high-speed rail network between our nation's major cities. Bullet trains in five major corridors could serve 500,000 passengers a day at speeds up to 300 miles an hour."

Vice President Al Gore, in his book *Earth In The Balance*, wrote, "We should be emphasizing attractive and efficient forms of mass transportation ... New and improved forms of mass transit, like the magnetically levitated trains should be enthusiastically encouraged."

The incoming Administration could help numerous programs, which generally fall into three categories:

Planning For High Speed Rail Construction

California-Nevada
Florida
Northeast Corridor
Ohio
Pittsburgh
Texas

High Speed Rail Studies Planned/Underway

California
Illinois/Wisconsin/Michigan
Maryland
Massachusetts
New York
Washington State

Interest in High Speed Rail Starting

Arizona
 Georgia
 Louisiana
 Missouri
 North Carolina
 South Carolina
 Tennessee
 Virginia

FEDERAL ACTION PLAN

The High Speed Rail/Maglev Association is the umbrella group concerned with all forms of high-speed surface transportation. We offer a wide range of information and capabilities because of the broad nature of our coalition.

Growth in transportation will be so significant that the United States will spend hundreds of billions of public and private dollars in the next 20 years on expanded transport capacity. There is no doubt about that -- all the experts in all of the modes agree. The question becomes not will we finance transport infrastructure, but how.

Technology is not the issue. To bring high-speed train programs from concept to reality, we need to eliminate institutional and financing roadblocks. The Federal government needs to put equity into the nation's transportation policies.

The Intermodal Surface Transportation Efficiency Act (ISTEA) passed in November, 1991, contained provisions that could advance development of high-speed train systems. However, they are "enhancing" rather than "enabling" provisions. More needs to be done.

What follows are ideas provided for the benefit of the incoming Administration and the benefit of the public, ideas distilled from years of research, planning and other activity.

High-speed rail can lead the way for a new era in public-private investment in infrastructure. With that theme in mind, the following proposals are oriented to stimulate existing private-sector and state and local initiatives. These proposals include:

- I. Financial and Institutional Incentives
 - A. Divert Defense Funding
 - B. Tax-Exempt Bond Financing
 - C. Guaranteed Obligations Program
 - D. Investment Tax Credit
 - E. Amtrak Corridors/Stable Funding

- II. Long-Term R&D and Competitiveness Issues
 - A. Fund Maglev Program

I. Financial and Institutional Incentives

A. Divert Defense Funding

The concept of committing defense dollars to investment in infrastructure could measurably aid development of high-speed rail systems. Such funds could be the basis for direct grants to bring high-speed systems from the drawing boards to reality. Examples of activities that could qualify for such grants could be (a) environmental assessments; (b) route planning; (c) right-of-way acquisition; (d) preliminary and final design plans; (e) construction of fixed facilities and rolling stock; and (d) personnel training.

B. Tax-Exempt Bond Financing

There is a role for significant private funding for high-speed train systems throughout the United States. Projects planned in California, Nevada, Texas and Florida all were predicated on substantial private investments. However, the risks to private investors were too great to go it alone without some financing incentives, such as tax-exempt bonds. For private financing to play any role, however, a minor change is needed in the tax code whereby private-activity high-speed rail tax-exempt bonds (which already exist) would be put under the same rules as airport tax-exempt bonds.

Senator Bob Graham has been exceptionally active in support of this provision, with support from Senator Arlen Specter and others.

This measure would facilitate the investment of private capital into high-speed rail and maglev system construction. The bill would remove the requirement that an allocation under the state volume cap must be obtained for 25 percent of the bonds issued for such systems. Congress already has recognized the importance of tax-exempt bonding authority for the development of airports, seaports and high-speed train systems. However, the cap allocation applies only to high-speed train systems. Since many states are already operating near their volume caps, the 25 percent limit serves as an illogical barrier to the use of tax-exempt bonds to build such systems.

Specifically, an amendment to Sec. 146 of the Internal Revenue Code is needed to remove the requirement that an allocation under the state volume cap must be obtained for 25 percent of the bonds issues for high-speed train systems. For most high-speed systems, this 25 percent constraint proves too restrictive due to the initial capital requirements for such systems.

No transportation technology in the U.S. has developed commercially without meaningful Federal participation. Tax-exempt financing will facilitate the investment of private capital and will provide a limited but effective form of Federal involvement to help bring about high-speed train systems.

C. Guaranteed Obligations

We ought to begin the process that will permit use of Federal guarantees for high-speed rail obligations, permitted under ISTEA last year, to provide a positive signal to the investment community that private financing is welcome in high-speed rail infrastructure. Consideration also should be given to expanding the program by establishing a guaranteed loan program insured through a Federal Infrastructure Insurance Corporation.

High-speed rail planners are often encouraged to learn how the overseas experts financed their high-speed lines. Let the record show that most of the French TGV lines were financed through loans guaranteed by the French government. That means private financing from the United States and many other countries flowed into France to help build important infrastructure. American institutions are earning a profit from loans to the French. Let's let America permit American investors to do here what foreign governments let American investors do overseas.

Section 1036 of ISTEA made high-speed steel-wheel projects eligible for loan guarantees under the Railroad Revitalization and Regulatory Reform Act. When Congress adopted this provision, it recognized that the Federal government has an important role to play in assisting developing technologies in attracting private investment. It is for this reason that for many years government guaranteed loans were available under certain conditions to airlines for the purchase of new aircraft.

Beginning in fiscal 1993, high-speed steel-wheel planners should be in a position to apply to the Secretary of Transportation for loan guarantees for projects to develop or establish high-speed rail facilities. We request that the spadework begin in the appropriations process to bring ISTEA guarantees to the point where they can be utilized while consideration is given to establishment of a Federal Infrastructure Insurance Corporation to issue additional guarantees.

Such efforts will send a strong signal to the investment community that the Federal government welcomes their participation in building an important future component of the U.S. transportation infrastructure.

D. Investment Tax Credit

As a further inducement to private investment in high-speed surface systems, the Federal government should provide an investment tax credit for new rail technology. The credit could be determined by the purchase price of new equipment placed in service during a tax year. It should be noted that investment tax credits exist in the aviation industry.

E. Amtrak -- Corridors/Stable Funding

Amtrak remains capital starved. Many corridors in the nation are not yet quite ripe for all-new high-speed lines, but the public deserves the benefits that come from making carefully selected "incremental improvements" to Amtrak.

In particular, it's time to provide adequate capital to Amtrak's Northeast Corridor Improvement Program. Amtrak requested \$272 million in Fiscal 1993 to invest in the entire Northeast Corridor, with \$220 of that dedicated to electrification and other badly needed work between Boston and New York. Its appropriation, however, will total \$204.1 million, only \$168 million of which is for the Boston-New York portion of the route. A Fiscal Year 1993 supplemental appropriation could quicken the pace of this Amtrak program.

We support Amtrak in its goal of initially reducing Boston-New York travel time to three hours or less. We agree with Amtrak Chairman Graham Claytor's recent testimony before Congress that "Completion of the improvement is of utmost importance to transportation in the entire Northeastern part of the country. . . . In an era of \$5 billion urban highway tunnel projects and \$15 billion airports, support for a \$1.2 billion program that is projected to pull three million riders off other congested transportation modes makes sound transportation and financial sense."

On a related point, the Bush Administration designated five routes around the nation as having potential for high-speed service, designations that were required by the Intermodal Surface Transportation Efficiency Act. The law allocates \$30 million over five years to improve safety at highway-rail grade crossings and permit train speeds to be increased moderately on short segments of the routes. For the record, the routes are: A three-pronged corridor from Chicago to St. Louis, Milwaukee and Detroit; Miami-Orlando-Tampa; Washington-Richmond-Charlotte, N.C.; San Diego-Sacramento via Los Angeles and San Francisco; and Eugene-Portland-Seattle-Vancouver, B.C. The Boston-New York-Washington and New York-Albany-Buffalo routes were also given "special status," although that meaning was left unclear.

On a broader note, to make meaningful progress, we simply must find a way to put Amtrak capital funding on a more stable basis. We draw attention to a recent bill, H.R. 4414, introduced by Representative Al Swift, to put some rationality into the Amtrak investment process. He proposes that one penny a gallon from the 2.5 cents Federal motor fuels tax now collected for deficit reduction be redirected to Amtrak.

We do have a concern that the bill's language regarding funding from the "Intercity Rail Passenger Capital Improvement Trust Fund" contains ambiguous language regarding non-Amtrak high-speed systems. We believe this measure should apply to high-speed rail projects undertaken independent of Amtrak. To fail to do so would be to ignore the many public and private efforts over the last decade to build high-speed systems. It has been estimated that approximately \$60 million of primarily

non-Federal investments have been made to bring high-speed rail planning to the point it has reached today. Indeed, such efforts have been thwarted by the lack of Federal involvement. Let us not now penalize the pioneers who, for two decades, forged ahead while Washington ignored high-speed rail; let us encourage those pioneers.

II. Long-Term R&D and Competitiveness Issues

A. Maglev Program

The nation needs to adequately fund the development of high-speed magnetic levitation technology to insure a brighter technological future for domestic industry and labor.

We believe the Federal Railroad Administration/Army Corps of Engineers' National Maglev Initiative should be brought to a speedy close so that the focus of maglev efforts will be toward selecting the national maglev prototype pursuant to Sec. 1036, ISTEA. We urge that the \$45 million authorized in ISTEA be appropriated in 1993 for the purpose along with the \$26 million appropriation for the National Maglev Initiative. Only with a Federal program of research and development in maglev, just as we have aeronautic R&D, can we as a country hope to meet the transportation challenges of tomorrow.

We are concerned that the Bush Administration zero-funded the maglev prototype program for Fiscal 1993. This will result in a one-year delay in the issuance of the program's first phase Request For Proposals. It is the position of the Association that it is not necessary for the National Maglev Initiative to issue its final recommendations prior to the issuance of the maglev prototype program RFP. Our members advise us that American industry is prepared to meet the schedule for the maglev prototype program established in ISTEA.

The nation should, in conjunction with industry, support development of a high-speed magnetic levitation train system. A maglev program is vital to our long-term technological prowess. We hope the Congress will give full support to Senator Daniel Patrick Moynihan and others in their drive to develop a maglev program.

The Congress, in passing ISTEA last year, recognized that the private sector cannot by itself invest the substantial sums necessary to produce a maglev technology in the United States. ISTEA offers a necessary financial stimulant to U.S. industry to establish expertise to insure long-term American competitiveness. We supported that legislation and we support the full funding of the program under the timetable established by Congress.

PERSPECTIVE

This Action Plan is comprehensive. It should be noted that the recommendations for high-speed rail include only

those programs comparable to aviation or highway programs already in place or that have served those modes for many years.

What would help the public debate on this topic is to use the same terms to describe government budgeting for aviation and rail. A double standard is applied in the appropriations process where funding for rail is labeled a "subsidy." However, that same appropriations process identifies general-fund subsidies to aviation as "investments," "obligations," "capital items," or "line items." This double standard put advocates for high-speed rail at a disadvantage.

We call for fair treatment by labeling expenditures for rail in the same way, or by labeling all general-fund appropriations for aviation as "subsidies." On a related point, we endorse the Clinton campaign call to label infrastructure spending as "capital items" in the budget and not "subsidies."

In proposing any major initiative, the administration could consider highlighting the following rationales for undertaking a high-speed rail initiative. These include the following benefits.

ADDITIONAL TRANSPORT CAPACITY NEEDED

Numerous reports are available from transportation agencies that identify the need in the United States to greatly expand transport capacity in future years. In our busiest travel corridors, insufficient space exists for an unchecked expansion of airports and highways. High-capacity, high-tech, high-speed trains are the answer to mobility problems in selected high-travel-density corridors.

EMPLOYMENT BENEFITS OF HIGH SPEED RAIL/MAGLEV

The President is correct that the United States needs an investment orientation to infrastructure. Investment is not a liability; it is an asset. Federal investment in high-speed rail should occur by direct appropriation as well as by facilitating the flow of private investment into construction of such systems.

Many new jobs could be created through institution of high-speed rail programs. One estimate is that construction jobs on five major corridors would exceed one hundred thousand full-time positions.

Approximately 85 percent of all capital expenditures for high-speed surface systems are in infrastructure (tracks or guideways, stations, parking lots, electrical and signaling systems, maintenance bases, etc.) while only 15 percent would be expended for the actual trains. Even those, which may be of foreign design, would be manufactured in the United States to the benefit of domestic industries.

The Federal government could boost employment related to high-speed rail in the following ways:

Accelerate Construction: Existing plans to upgrade Amtrak's Boston-New York-Washington line (including electrification of the Boston-New Haven portion) could be accelerated by advancing work schedules. "Incremental" improvements could be undertaken to improve schedules on other short distance routes, such as New York-Buffalo, Milwaukee-Chicago-Detroit and Los Angeles-San Diego. Such incremental improvements are worthwhile on selected routes, but would not bring about truly high-speed trains, which is defined by the Railway Safety Act as trains capable of sustained speeds in excess of 150 mph. Other projects such as the Florida maglev project, which is proceeding to final design, could be accelerated by further Federal investment in a "pre-construction funding" program. Short-term employment benefits: Employment would be created fairly quickly in engineering and surveying firms and in the grading, construction, bridge-building, fabrication, electrical, signaling and railway supply industries. Long-term employment benefits: Approximately two years from now, orders could be placed for locomotives and passenger cars specifically for use on such lines, equipment that would be operated faster than equipment in use today.

Accelerate Planning: Existing plans to build high-speed rail or maglev systems in Florida, Pennsylvania, Ohio, Texas and California-Nevada could benefit from an expedited process. Methods ought to be examined to expedite the environmental review process -- while insuring that all stringent environmental requirements are left in place -- as well as conduct additional needed route studies. Short-term employment benefits: Engineering firms, environmental review firms, surveying firms, law firms (because of the permitting process). Long-term employment benefits: Within a year, employment could be created in the grading, construction, bridge-building, fabrication, electrical and supplier industries for the Florida maglev demonstration project; such employment could come within a two-to-five year period for other projects. As with other large infrastructure projects, the numbers can be sizable. Examples:

One study showed that if a Pittsburgh-Philadelphia high-speed line were built that between 7,000 and 29,000 jobs would be created per year over a seven-year construction period. After that, additional personnel would be required to operate the line, just as staff is require to operate an airline.

The California-Nevada Project would create 25,000 to 30,000 jobs as well as aid the long-term economies of both states.

In Texas, during a four-year construction period, approximately \$3.8 billion in direct construction expenditures are expected to occur in the counties where rail infrastructure will be located, generating 17,000

person-years of direct construction employment. The total impact in the Texas economy could result in more than 100,000 person-years of work.

Accelerate Research & Development: The Intermodal Surface Transportation Efficiency Act contained a number of provisions designed to spark U.S. investment in high-speed technologies -- both maglev and steel-wheel -- provisions that have gone unfunded. The most visible project is the \$725 million Maglev Prototype Development Program while the others are a \$25 million Research & Development program and a \$50 million Technology Demonstration Program. Implementation of these provisions would create short-term employment in some of America's aerospace and computer industries, high-tech firms that are reeling from the impact of the recession as well as defense-related cutbacks. The provisions would also benefit America's railway supply industry, which is lagging behind overseas firms in technological development. The same long-term employment would result from construction of new high-speed surface technologies that would result from the first two categories outlined above.

All of these programs create direct employment, of course, but the indirect benefits would include jobs in various supplier and manufacturing industries, jobs that create additional spin-off economic benefits.

After construction, thousands of additional personnel will be required to operate and maintain the trains, tracks, signal systems and train stations. Our nation will see the growth of a new generation of engineers, conductors, track and signal maintainers, and related crafts, necessary for the smooth functioning of high-speed train lines.

An often overlooked benefit is that virtually all of the high-speed systems in planning call for placement of train terminals in the city centers. On a short-term basis, that would create employment in distressed areas. Long-term, the location of stations in city centers would help revitalize and redevelop such areas as economic activity always is encouraged where new transportation terminals are located.

Further, placement of high-speed train terminals at airports could improve operations at the nation's most crowded airports by diverting short-distance passengers from planes to trains. Using limited landing and takeoff slots could in turn, improve the operational efficiency of the airline industry. This is an example of how the nation could make wise use of transportation technology -- aircraft for the longer-distance flights that make sense and trains for the shorter-distance trips. Such an "intermodal" spirit is sorely needed in our transportation planning process.

ENVIRONMENTAL BENEFITS OF HIGH SPEED RAIL SERVICE

The creation of high-speed rail systems can stimulate the economy while bringing about environmentally benign transportation infrastructure.

The benefits of high-speed rail are thoroughly documented. Therefore, only a summary need be presented here:

Energy Savings: The nation would benefit by shifting travelers from oil-dependent air and auto travel to electrified trains for selected short- and medium-distance travel. No form of intercity travel is as energy-efficient as high-speed trains. The Edison Electric Institute reports that U.S. powerplants generate only four percent of their electricity with oil. Therefore, a shift to electrified high-speed trains on any one route would benefit the entire nation. (See Appendix A.)

Reduction in Pollution: Such trains would reduce air pollution in some of our largest urban areas because electrical power plants place far fewer pollutants in the air than the accumulation of individual auto and jetliner exhausts. According to Southern California Edison, studies sponsored by the Natural Resources Defense Council show that electric high-speed trains are up to 98 percent cleaner than the autos and planes they displace. That is true even in cities heavily reliant on coal-generated electricity.

Land Savings: High-speed trains are high-capacity systems requiring only small amounts of land. Such trains would reduce the "land take" required for an expansion of transport infrastructure (e.g., the land required for the entire French high-speed rail system is less than that required for the Charles de Gaulle Airport in Paris alone).

Safest Form of Travel: High-speed trains are the safest form of transportation ever devised. Such systems have operated in Japan for 28 years and France for a decade. Together, the trains have served more than 3-1/2 billion passengers. Yet, there has not been a single passenger fatality. If America made transport decisions based on safety alone, it would have high-speed trains in service on a number of high-travel routes.

SUPPORT FROM THIS ASSOCIATION

The High Speed Rail/Maglev Association was formed ten years ago. We would welcome the opportunity to discuss the recommendations contained in this paper with Congress and the Administration.

Our views are based on a wide range of research and experience. We are an "umbrella group" with broad support -- more widespread than typically found in a trade group -- because we include a variety of interests. Active are construction firms; railway suppliers; electric utilities; aerospace companies; universities; law and engineering firms; maglev scientists; labor unions; transit operators; tourist boards; railroads; and the investment community. Membership also includes every state Commission and Transportation

Department active in high-speed rail, as well as employees from city, state, and Federal agencies.

SEGMENTAL FINANCING

Long-term, the nation also must reevaluate how it commits public investment in transportation, with a review of trust funds. This Association has worked to create a new dimension in rail funding by leveraging public and private transportation financing. One area that needs consideration is reorientation of trust fund financing based on need as opposed to mode.

A flexible use of trust funds can aid travel in America's skies and on its highways, provided we integrate high-speed rail into our existing transportation systems. We should remove artificial funding constraints by putting more flexibility in aviation and highway trust fund financing so that the most appropriate transportation systems can be built in appropriate areas.

This could be termed a strategy of "segmental financing," whereby selected funds would be committed to constructing selected portions of high-speed rail projects.

A recent report entitled *In Pursuit Of Speed* issued by the Transportation Research Board, a unit of the National Academy of Sciences, stated that high-speed ground transport systems could be an effective alternative in corridors where travel demand is increasing, but where adding capacity to reduce highway and airport congestion and delays is difficult. The study stated that no mechanism exists for introducing a new mode based on the savings achieved by reducing the need for more airports and highways or extending another mode's economic life. It suggested that if public outlays for high-speed rail are justified, they could include contributions from the aviation and highway trust funds because users of those systems will benefit.

The Aviation Trust Fund specifically should be opened to allow funding for access to airports for high-speed trains. Airports are intermodal facilities and create significant travel demand within their regions. Because most major U.S. airports are located within 25 miles of the cities they serve, legislative language should require that aviation trust fund financing of high-speed rail lines include intermodal stations located at airports as well as all terminal, track and signal facilities necessary to access and adequately serve aviation travelers. Provisions could require that such facilities do not exceed 25 miles in length per airport served and that maintenance shops, offices and rolling stock would be excluded. Facilities constructed with such funds would be publicly owned.

Highway fund financing could be limited to those projects that require all-new construction, the very projects that benefit grading, construction and bridge contractors (as well as their suppliers) experienced in building new highways. To

further limit the scope of such funding, language could require that highway trust fund financing of high-speed surface systems be limited to those systems powered by electricity that will serve communities now in violation of air-quality standards. Financing of maintenance shops, offices and rolling stock would be excluded. Facilities constructed with highway funds would be publicly owned.

CONCLUSION

A substantial number of short-term and long-term efforts should be placed on the nation's agenda to improve prospects of building and operating successful high-speed rail systems. In particular, the program outlined on pages 3 through 11 of this report is key to development of high-speed rail.

Whatever the specific content of a high-speed rail program, it is clear that the Clinton Administration and the new Congress should set as a goal that America will have the world's finest high-speed rail system. It is an achievable goal.

President Dwight Eisenhower is known for establishing the Interstate Highway System. President John Kennedy, the Apollo program. It's time once again for visionary thinking. Bill Clinton has a golden opportunity to be known as the President who launched the latest transportation innovation in the United States -- high-speed, high-tech, super-safe trains. He can do that with the legislative program outlined above.

APPENDIX A

Excerpt from:

Supertrains: Solutions To America's Transportation Gridlock

by Joseph Vranich

U.S. Energy Policy & High Speed Trains

"Our public fails to understand that America's Achilles Heel is our over-dependence on foreign oil," said Ohio's Lt. Gov. Paul Leonard, in a 1989 speech promoting high-speed trains. He wants to see Americans riding in trains powered by electricity, not pumping gas shipped over from the Mideast oil cartel.

According to the Federal Highway Administration, California led the nation in 1989 in total gasoline use for highway travel, Texas ranked second, while Florida took third place. *These very states are in the forefront of high-speed train planning, and any shifts from auto to train travel will reduce oil imports. The energy savings, as well as reduced pollution, on just one route will be substantial. Look at the Los Angeles-Las Vegas train:*

"Over a million interstate travelers and between 1-1/2 million and 2-1/2 million commuters would leave their cars to ride this new, fast, quiet, non-polluting system," said Richard Katz, former chairman of the California-Nevada Super Speed Train Commission. "Approximately 70 million vehicle-miles would be trimmed from the region's trips each year, resulting in reduced tailpipe pollutants by hundreds of tons and saving millions of gallons of fuel. In fact, estimates in the Las Vegas to Southern California corridor alone are a fuel reduction of 17 percent."

Similar savings will occur in other states. High-speed trains powered by electricity in

Florida would result in a reduction of 20 million gallons of imported oil in one year alone.

The Senate's 1989 maglev advisory committee report said that maglev trains are "twice as efficient as autos and four times as efficient as airplanes, in terms of gross energy used."

Trains like the French TGVs are fuel-stingy, too. Their per-passenger energy consumption is so low that TGVs use about one-sixth as much energy per mile as a narrow-body aircraft. Clearly, the French TGVs help minimize France's oil imports. Considering that gas-guzzling airplanes in the United States use about 16 billion gallons of fuel annually -- much of it wasted on short-hop flights better served by fast trains -- the potential savings are enormous.

An example of concern over energy can be found in Germany. Peter Haelner of the German Federal Railway explained: "We want major independence from oil, especially from imported oil. The electric train is the only means capable of using all kinds of energy and at the same time has the lowest specific energy consumption of all modes. This is why our government believes it's sensible to interfere and steer investments into rail."

When it comes to wise use of energy, the United States can learn from several of its industrialized competitors -- Japan, France and Germany.

Copyright, *Supertrains: Solutions To America's Transportation Gridlock*, published by St. Martin's Press, New York, January 1992.

APPENDIX B

HIGH SPEED RAIL/MAGLEV ASSOCIATION

FOR IMMEDIATE RELEASE

Contact: Joseph Vranich
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The High Speed Rail/Maglev Association applauded President Bill Clinton for his endorsement of the high-speed rail idea. A statement by the Association's new president, Joseph Vranich, follows:

"We're cheered by the President's inclusion of this issue in his State of the Union speech.

"If President Clinton wants to leave a legacy of progress, he started on the right foot regarding high-speed rail. As communities are served by all-new trains traveling at more than 200 mph, perhaps as early as 1998, we will have Bill Clinton to thank.

"President Clinton may call for change, but this initiative is cautious and evolutionary. The President is starting to put some equity in transport policies. He is opening a door. On the other side of that door high-speed rail planners will now find some help, encouragement and a prudent investment of public funds to induce private investment.

"His plan includes two excellent proposals.

"The recommendation to fund high-speed rail-maglev development under the Intermodal Surface Transportation Efficiency Act would leverage public funding to induce private investment. As we understand it, the proposal includes an additional \$646 million for the 1994-1997 period. That is helpful.

"The plan to use tax-exempt bonds to lure private investment to high-speed systems would put such bonds on an equal footing with tax-exempt airport bonds. The Clinton Administration would do this by removing the rail bonds from state bond volume limitations just as airport bonds are exempted from such limits.

"Further, a BTU tax also would work in favor of fast-train systems. Electrified high-speed rail is the most energy-efficient form of transport ever devised. Thus, the impact of BTU taxes would be minimal on such systems."

(end)

STATEMENT OF SENATOR SPECTER

Senator LAUTENBERG. Mr. Salci.

Senator SPECTER. Mr. Chairman, I wonder if I might say a word at this point?

Senator LAUTENBERG. Sure.

Senator SPECTER. First, I thank the Chair for convening these hearings. I believe that high-speed rail transit is a matter of enormous importance. It's a subject that I've been working on for more than a decade.

Some very substantial leadership has been provided by State representative, Rick Geist, from Altoona, on plans for a high-speed line, which would travel from Pittsburgh to Philadelphia, illustratively, in 2 hours and 7 minutes with a number of intermediate stops and an additional projection to move beyond to south New Jersey.

Pittsburgh has been the center of the development of maglev technologies, which is now ready to go on a 19-mile demonstration program, which would go to the airport and with an extension which would tie into West Virginia and Ohio.

It is my sense, that given the problems in air travel and the problems in fuels, some of which you have referred to, Mr. Vranich, and others have in their prepared statements, that this is a line which we really ought to proceed on.

There is no reason that a country with the technology of the United States in proposing the super collider and the space stations, should not be moving ahead on high-speed rail development.

High-speed rail and maglev technology are something that I have pushed and will continue to push. These technologies are something that we have put some funding into the appropriation bills in the immediate past, but something that we have to do more of.

Thank you, Mr. Chairman.

Senator LAUTENBERG. Thank you very much. Senator Specter, we're from the same region, with densely populated States, and the needs of the populations of these States can be very well served by high-speed rail. And you have had a long and abiding interest in this. We appreciate your participation.

Senator SPECTER. Oh, I agree with you about that, Mr. Chairman. Certainly, when you take the eastern end of my State which abuts to your State and the very heavy demands for transit into south New Jersey, which would tie right into a Pittsburgh-to-Philadelphia line, and the very heavy needs for high-speed transit in the Northeast corridor, which traverses both of our States, those are items which really command our joint attention.

Senator LAUTENBERG. If you look at the map here, one of the areas identified as deserving of attention, vis-a-vis high-speed rail, was the—indicated there from Philadelphia—I guess that's to Pittsburgh—and just an ideal kind of corridor; Harrisburg, also.

There are several cities in Pennsylvania that could benefit. And we're going to continue to pursue this. I'm delighted that you are a new member of this subcommittee, because we have a commonality of interest. And it's good to have allies as we work the problem through.

And, Mr. Vranich, I don't want to interrupt the flow of statements, but your testimony, as was Mr. Mead's, was very interesting. We'll continue along. And then if you can stay, we'll have our questions then.

Mr. Salci, please proceed.

STATEMENT OF LARRY SALCI

Mr. SALCI. Thank you, Mr. Chairman, Senator Specter. Thank you for inviting me to testify before you on behalf of the Texas TGV Corp. My testimony, as the others, will be submitted for the record. And I'll be brief, Mr. Chairman.

Senator LAUTENBERG. Without objection, it will all be included in the record.

Mr. SALCI. I would like to take just a moment to briefly describe the Texas TGV project and move directly to suggestions to promote the development of high-speed rail in the United States.

The Texas TGV will provide nonstop 200-mile-per-hour service between Houston and Dallas, between San Antonio, Austin and Dallas, and between Dallas DFW Airport and Fort Worth. This is a service area, commonly referred to as the "Texas Triangle."

The rolling stock will be specially adapted for the Texas TGV and will be based on the design of the operationally proven TGV Atlantique, the second generation of TGV technology. This was the same design which established the world ground speed record for fixed guideway vehicles of 320 miles per hour in May 1990.

The system planned for Texas will go beyond the Atlantique in terms of onboard services and amenities to its passengers. I want to emphasize, Mr. Chairman, that while the Texas TGV project will incorporate French technology through technology transfer from GEC-Alsthom of France and the significant United States presence of Bombardier Corp., manufacture of the rolling stock will fully comply with Buy America requirements.

Moreover, the engineering and the civil work construction, which is by far the largest component of the project's cost, will be performed by U.S. corporations and managed by our corporate shareholder, Morrison-Knudsen.

Based on our studies, the Texas TGV project is expected to provide between 30,000 to 35,000 construction phase jobs and nearly 10,000 direct jobs once the system becomes operational.

We would offer the following suggestions to encourage high-speed rail development in corridors beyond the Northeast corridor. One, Federal assistance for planning, feasibility, ridership and environmental studies, as well as other Federal mandates should be considered.

Today, every other mode of passenger transportation is eligible for Federal assistance in the planning, engineering, and environmental impact analysis phase of a given project. In the case of highways and rapid transit new starts, 80 percent of these costs are assisted by Federal grant funds.

In an effort to reduce modal bias, we would suggest a similar structure of assistance for high-speed rail projects. Following the efforts of ISTEA to minimize the bias among surface transportation modes, we believe that Federal funding for these essential steps, which minimize engineering and financial problems later, is a rea-

sonable Federal investment and an appropriate Federal promotion role.

Two, high-speed rail transportation trust fund account. Given the President's and Congress' dual focus on infrastructure investment and reducing the deficit, we would suggest a user fee concept. Specifically, in exchange for extending eligibility to high-speed rail programs for highway trust funds today, we would propose a plan to repay today's investment with a 10-percent ticket tax to be imposed on high-speed rail passengers, the proceeds of which would be returned to the highway trust fund.

This concept is similar to the user fees employed by both surface transportation and aviation modes.

Three, permit States to use right-of-way revolving funds for high-speed rail projects. Mr. Chairman, you will no doubt recall your efforts in 1991 to have this very concept included in the final version of ISTEA. Section 128 of Senate bill 1204, the Senate version of what became ISTEA, proposed passenger rail facilities as eligible projects for the use of right-of-way revolving account funds. Although this provision was dropped in conference, we would suggest its reconsideration.

Four, Senior Grade Bond Insurance Program. Last week, the Commission to Promote Investment in America's Infrastructure, which was established under ISTEA, issued its final report.

Among its recommendations is a proposal to establish an insurance mechanism to enhance the rating of infrastructure projects, which might include high-speed rail, to attract private capital to a project. By providing this bond guarantee, project ratings are raised, potentially, to investment grade, attracting investors which otherwise might ignore such investment opportunities.

And five, tax-exempt bond treatment for high-speed rail projects. Under current law, bonds issued for high-speed rail projects are tax-exempt. They are, however, subject to the State private activity volume cap which renders them almost useless because these caps are so low, given the scale of the projects. By allowing bonds issued for high-speed rail projects to be treated in an identical fashion to bonds issued for airports or other surface transportation projects, that is, outside these volume caps, significant private investment can be attracted to high-speed rail projects.

Mr. Chairman, these five suggestions are offered as an array of ideas which will greatly assist in the attraction of private capital to high-speed rail. Clearly, what we are proposing also involves direct Federal expenditures for high-speed rail, a clear change in the Federal policy which has prevailed over the past decade.

Perhaps the most difficult capital to find is the venture capital needed to begin these projects. For this reason, we have suggested direct Federal assistance on par with that historically accorded to other modes of transportation.

We have also suggested direct funding for construction. While we have not settled on any match levels, it is our assessment that overmatches of private funds similar to the overmatch of State or local funds for the Federal Transit Assistance Section 3 New Start Program might be considered.

In closing, Mr. Chairman, let me say that while the President's leadership in high-speed rail has attracted national interest in this

technology, I wish to thank you for the many years of leadership you have provided in advancing interests of all Americans through your support of high-speed rail, new transportation technologies, new applications of old technologies and investment in our Nation's infrastructure. Those of us who have spent our career in transportation know well the important role you have played in improving our nation's transportation system.

I thank you for inviting me to testify. And I'd be pleased to answer any questions.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much, Mr. Salci. We have your prepared statement and it will be made part of the record.

[The statement follows:]

STATEMENT OF LARRY E. SALCI

Mr. Chairman, and members of the Subcommittee, thank you for inviting me to testify before you on behalf of the Texas TGV Corporation. The scheduling of this hearing is indeed timely, coming just two weeks after President Clinton's announcement of important policy initiatives to assist the start-up phase and construction of high speed rail projects, this hearing presents the unique opportunity to suggest a structure for the President's initiatives. I applaud your quick action in holding this hearing and appreciate your hearing our views on high speed rail.

I would like to take just a moment to briefly describe the Texas TGV Corporation and the project we are pursuing. The three major industrial shareholders are Morrison-Knudsen, Bombardier Corporation and GEC-Alsthom.

ROUTE ALIGNMENT

The Texas TGV will provide nonstop 200 MPH service between Houston and Dallas, between San Antonio, Austin and Dallas, and between Dallas DFW Airport and Fort Worth. This is a service area, commonly referred to as the "Texas Triangle," which contains 60 percent of the state's population and which generates over 75 percent of the state's gross domestic product.

Travel between these cities will be on a non-stop schedule with half hour departures through most of the day and with fifteen minute departures during peak periods. The TGV will provide service at a very high level of reliability, comfort, and ease of use. Stations or terminals are planned for:

- Houston, Central Business District;
- Houston, Northwest Suburban;
- Dallas/Fort Worth International Airport;
- Fort Worth;
- Austin; and
- San Antonio.

In addition to these principal stations, service is being planned for the cities of Bryan-College Station and Waco, and possibly Houston Intercontinental Airport though frequency and method of service to these communities has yet to be determined.

The route for the Texas TGV is appended to this statement.

PASSENGER ROLLING STOCK AND ON BOARD SERVICE

The rolling stock will be specially adapted for the Texas TGV and will be based on the design of the next generation of the operationally proven TGV Atlantique which currently operates at 186 M.P.H. This was the same design which established the world ground speed record for fixed guideway vehicles of 320 miles per hour in May of 1990. The system planned for Texas will go beyond the Atlantique; it will initially operate at 200 M.P.H. and the system infrastructure is designed to accommodate speeds up to 250 M.P.H. Also, in terms of on-board services and amenities, features have been specifically developed to enhance the productivity of the Texas TGV passenger, and include:

- Three classes of passenger accommodations: First Class, Business Class and Coach.

- Expanded seat spacing and legroom in all accommodations which approaches First Class seat spacing in airlines.
 - Reserved seating for all passengers.
 - Several small group seating arrangements with conference/work tables.
 - High quality commercial phone service available throughout the train. Free phone calls may be made to either destination or departure terminal cities. All long distance carriers will be accessible for calls outside of the Triangle simply by using the "Dial O" service which is available on most public phones today.
 - Business productivity features including on board rental car services as well as facsimile transmission and receive capabilities.
 - A food and beverage car at the center of train, with in-seat service to First and Business Class passengers.
 - Integrated tickets with selected airlines will allow for smooth feeder operations to major hub airports, such as DFW. Check in service provided at TGV terminals by host carrier personnel will include baggage check through and seat assignments for all trip segments.
 - A total "Customer Service" approach has been contemplated to provide seamless service for all passengers including those with an airport connection.
 - Arrival and departure schedules at half hour intervals throughout the day with increased frequency during heavy demand periods.
 - Specially designed seating and other accommodations—including level platform access—will enable persons with disabilities to easily board and use the high speed train services.
 - Texas TGV expects a fare structure that will be competitive with or less than the airline fare structure.
- A detailed analysis of the revenue impacts of these features is currently underway.

TEXAS TGV CAN EFFECTIVELY LINK WITH LONG HAUL AIR OPERATIONS

With these kinds of amenities and reliable performance, the Texas TGV should be highly competitive with all modes of travel between Texas Triangle cities. The Texas TGV should also be ideally suited in a feeder role for major hub airports such as Dallas/Fort Worth (DFW) and Houston Intercontinental (IAH). Over the next twenty years, carriers serving these airports will be looking to ever distant markets to serve out of these hubs. New, more efficient long haul aircraft will accentuate this effort.

On the operational side, airlines will continue to look for better operating efficiencies. They are finding these efficiencies in their hub operations by considering the shift to "continuous" hubbing. This will require high-frequency and high volume feeds, particularly on the short haul routes, to make them especially effective. At the same time, it is very costly to offer more than twelve to thirteen such short haul connections by air. An integrated service using the Texas TGV, on the other hand, should be able to dramatically increase service frequencies to all Texas cities by perhaps a factor of three. This service should also be able to offer this for lower total costs than these carriers now incur, and should be able to do so with much greater on-time reliability. With highly integrated facilities at the hub airport and a continued role for the long haul carriers in selling the tickets and handling passenger check in, the Texas TGV should be a highly complimentary—and highly efficient—alternative to continued use of aircraft to feed passengers from the Texas Triangle cities to Texas' major air hubs.

This alliance can be crucial in improving the ability of long haul carriers to efficiently serve more distant markets sooner and existing markets better.

EMPLOYMENT IMPACTS

The Texas TGV Project is expected to provide 30,000–35,000 construction phase jobs and nearly 10,000 direct and indirect jobs during its operations phase. High speed train technology will utilize many of the telecommunications and aerospace skills which have already come to Texas. Further, with an assembly plant in the state, Texas TGV will position Texas as a base from which high speed rail skills, services, and products can be provided to other parts of the country as they follow in their development of intercity high speed rail.

I can not overemphasize, however, Mr. Chairman, that while the Texas TGV Project will incorporate French technology, through technology transfer from GEC-Alsthom and the significant United States presence of Bombardier Corporation, manufacture of the rolling stock will fully comply with Buy America requirements. Moreover, the engineering and civil work construction which is by far the largest

component of the project's cost will be performed by U.S. corporations and managed by our corporate shareholder, Morrison-Knudsen.

Having provided you with the scope of the Texas TGV Project as a backdrop; I would like to turn to the focus of your hearing today: How can high speed rail be developed in corridors beyond the Northeast Corridor? We would offer the following suggestions.

FEDERAL ASSISTANCE FOR PLANNING, FEASIBILITY, RIDERSHIP AND ENVIRONMENTAL STUDIES AS WELL AS OTHER FEDERAL MANDATES

Today, virtually every other mode of passenger transportation is eligible for federal assistance in the planning, engineering and environmental impact analysis phase of a given project. In the case of highways and rapid transit new starts, 80 percent of the planning, engineering and environmental impact statement costs are assisted by federal grant funds. In an effort to reduce modal bias, we would suggest a similar structure of assistance for high speed rail projects. Following the efforts of ISTEA to minimize the bias among surface transportation modes, we believe that federal funding for these essential steps, which minimize engineering and financial mistakes later, is a reasonable federal investment and an appropriate federal promotion role. The source of these funds could perhaps come through adding some flexibility provisions to Section 1036 of the High Speed Rail Ground Transportation Program which has already been authorized in ISTEA through 1997.

HIGH SPEED RAIL TRANSPORTATION TRUST FUND ACCOUNT

Given the President's and the Congress' dual focus on infrastructure investment and reducing the deficit, we would suggest a user fee concept. Specifically, in exchange for extending eligibility to high speed rail programs for Highway Trust Funds today, we would propose a plan to repay today's investment with a 10 percent ticket tax to be imposed on high speed rail passengers, the proceeds of which would be returned to the Highway Trust Fund. The amount to be made eligible for high speed rail funding could be based upon such factors as conservative ridership projections, a repayment schedule which reflects the useful life of the system, and the near-term financial needs of developing other high speed rail projects. This concept is similar to the user fees employed by both surface transportation and aviation modes. Admittedly, there is a draw on the trust fund in advance of repayment, but this investment would be analogous to the federal support provided to highways and the aviation industry prior to the establishment of their respective trust funds.

PERMIT STATES TO USE RIGHT OF WAY REVOLVING FUNDS FOR HIGH SPEED RAIL PROJECTS

Mr. Chairman, you will no doubt recall your efforts in 1991 to have this very concept included in the final version of ISTEA. Section 128 of S. 1204, the Senate version of what became ISTEA, proposed "passenger rail facilities" as eligible projects for the use of right-of-way revolving account funds. Although this provision was dropped in conference, we would suggest its reconsideration. The revolving fund concept has saved many millions of dollars in highway construction costs, it could provide similar savings to high speed rail projects.

SENIOR GRADE BOND INSURANCE PROGRAM

Mr. Chairman, the initiation of an investment grade bond insurance program for infrastructure is really the adaptation of a concept that has worked in attracting private sector investments to health care and educational facilities. Last week the Commission to Promote Investment in America's Infrastructure, which was established under ISTEA, issued its final report. Among it's recommendations is a proposal to establish an insurance mechanism to enhance the rating of infrastructure projects (which might include high speed rail) to attract private capital to a project. Using the model of the College Construction Loan Insurance Association (ConnieLee), the Commission focused on the success that ConnieLee has achieved in guaranteeing bonds issued by colleges, universities and teaching hospitals. By providing this bond guarantee, project ratings are raised to investment grade, attracting investors which otherwise might ignore such investment opportunities. A bond insurance program, established with a minimum federal investment, could foster literally millions of dollars in private investment into high speed rail and other infrastructure projects.

TAX-EXEMPT BOND TREATMENT FOR HIGH SPEED RAIL PROJECTS

Under current law, bonds issued for high speed rail projects are tax-exempt. They are, however, subject to the state private activity volume cap which renders them almost useless because these caps are so low. By allowing bonds issued for high speed rail projects to be treated in an identical fashion to bonds issued for airports or other surface transportation projects, i.e., outside these volume caps, significant private investment can be attracted to high speed rail projects.

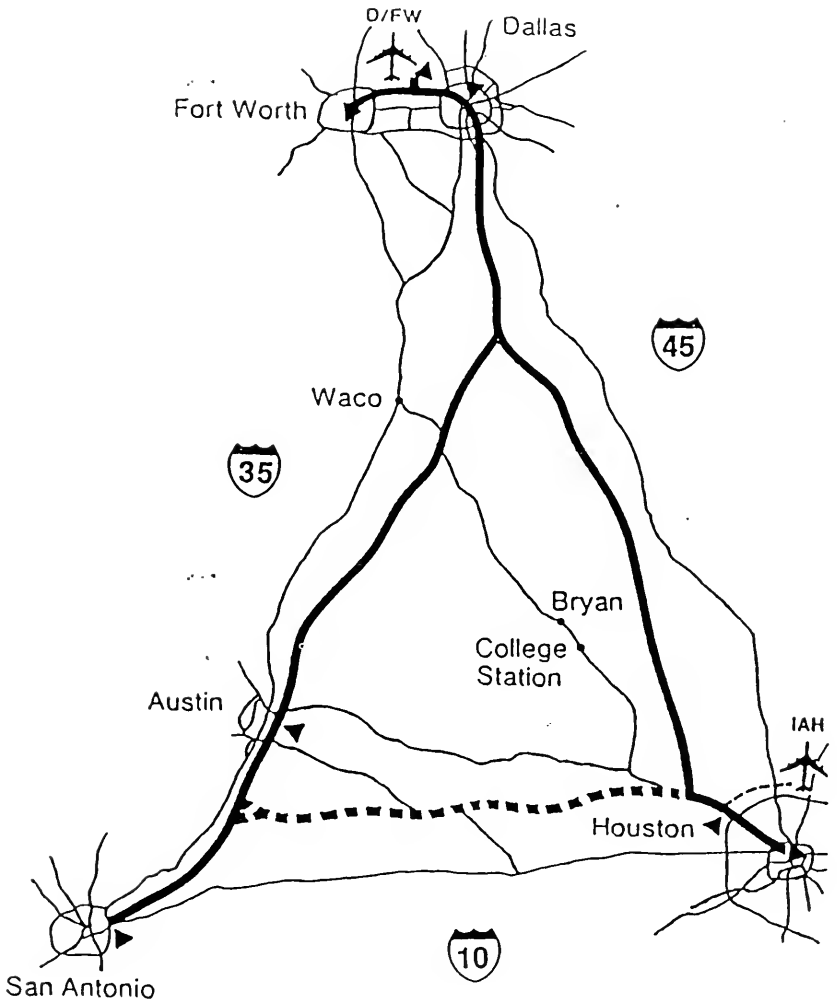
CONCLUSION

Mr. Chairman, these five suggestions are offered as a array of ideas which will greatly assist in the attraction of private capital to high speed rail. Clearly, what we are proposing also involves direct federal expenditures for high speed rail, a clear change in the federal policy which has prevailed over the past decade. High speed rail is not a technology still under test and development. It's benefits have been demonstrated widely in Europe and Japan. Promoting the development of high speed rail in the U.S. will have real and substantive benefits beyond just mobility enhancement. Environmental and social improvements, and long-term job creation are benefits which will have real impact on our nation.

We are suggesting a federal role which will serve to attract private capital. We will acknowledge that levels of private investment are determined by levels of risk. Some of the concepts we have outlined are clearly designed to reduce levels of risk which in turn have the inverse effect of attracting private capital.

Perhaps the most difficult capital to find is the venture capital needed to begin these projects. For this reason we have suggested direct federal assistance on par with that historically accorded to other modes of transportation. We have also suggested direct funding for construction. While we have not settled on any match levels, it is our assessment that "over-matches" of private funds similar to the "over-match" of state or local funds for the FTA Section 3 New Start program should be considered. While the Federal government would clearly take on the initial burden of establishing project feasibility, as it does in other modes of transportation, we would propose that the private sector fund a large share of construction costs in terms of absolute dollars.

In closing, Mr. Chairman, let me say that while the President's leadership on high speed rail has attracted national interest in this technology, I wish to thank you for the many years of leadership you have provided in advancing the interests of all Americans through your support of high speed rail, new transportation technologies, new applications of old technologies and investment in our nation's infrastructure. Those of us who have spent our career in transportation know well the important role you have played in improving our nation's transportation system. Thank you for inviting me to testify. I will be pleased to answer any questions.



▲ - Stations

STATEMENT OF ROGER FAULKNER

Senator LAUTENBERG. Mr. Faulkner, you're next.

Mr. FAULKNER. Thank you, Mr. Chairman and Senator Specter, for this opportunity to testify on our efforts to bring high-speed rail to the residents of Ohio.

I'm here today representing the Ohio Railway Organization, which is a private consortium of firms which has developed an implementation plan for making a privately operated, profitable high-speed rail system for Ohio a reality. Our plan was officially accepted by the Ohio High-Speed Rail Authority on June 23, 1992.

To begin, let me give you a brief overview of ORO's plan. The alignment of the system, commonly referred to as the "3-C corridor," cuts diagonally across the State from Cincinnati to Cleveland through Columbus. The entire length of the system is 260 miles long with nine stations. And most of the alignment is on new right-of-way, except where the system enters the major metropolitan areas.

The results of our year-long effort concluded with a system capital cost estimated at \$3.1 billion in 1991 dollars. The annual operating and maintenance costs were estimated to be \$62 million. And the annual projected revenues are estimated to be \$88 million, based on 1.8 million riders per year.

I would like to say this ridership estimate is conservative, because it was based on our traditional rail ridership patterns as we know today in the United States.

The results of our cost estimates indicate that there is very little of the project that could be supported by private investment. The resulting \$26 million new operating revenues could realistically only attract \$100 to \$150 million of private finances.

The total estimated economic benefits of developing and operating a high-speed rail system in Ohio will amount to \$11.1 billion, which is over a 3 to 1 investment on the capital expenditures. This is creating, in the construction phase, over 71,000 jobs. During the operations phase, it is estimated that at least 79,000 jobs over a 25-year period.

Like highways, airports, and other transportation facilities, high-speed rail provides a vital public service. For the 3-C corridor project to be financeable, it will be necessary to fuse public and private finance concepts.

Rather than implementing a pure privatization model, the goals of a financing plan for the 3-C corridor system are to ensure that adequate funds are available for planning, development, construction, and operation on a basis which minimizes overall construction cost and financing cost, and thereby limits the level of public support required from the State of Ohio. These goals can be accomplished by maximizing the use of Federal financial assistance, tax-exempt financing, and private debt and equity capital.

Due to the size and magnitude of this program, the State of Ohio needs significant support from the Federal Government to proceed. Several potential sources of Federal assistance are already incorporated in the Intermodal Surface Transportation Efficiency Act of 1991, commonly known as ISTEA.

These sources, if funded, would provide an initial basis of funds to allow several projects, such as Ohio's, to at least proceed into the preconstruction phase. To date, all of the activities culminating in the submission and acceptance of our implementation plan have been totally privately funded through sweat equity and cash contributions by our consortium members. However, continual attraction of this private capital will be very difficult unless public funding sources become available.

At the present time, Federal programs specifically aimed at fostering high-speed rail are primarily concentrated in the area of research, development, and demonstration. However, ISTEA did initiate one change in Federal law which, if fully implemented, ultimately could have important ramifications for the construction of high-speed rail.

ISTEA amended the Loan Guarantee Program under the Railroad Revitalization and Regulatory Reform Act of 1976 to authorize Federal guarantees specifically for the financing of high-speed rail facilities. Notwithstanding the enactment of ISTEA, the Federal Railway Administration has not been given budget authority at the present time to enter into any of these loan agreements.

ISTEA also established a new Federal matching program of funds for the highway trust fund. In addition, the traditional highway and bridge projects, STP funds may be used, among other things, for transit projects and surface transportation planning programs. It is not completely clear what rail systems are eligible for assistance under the Federal Transit Act; however, high-speed rail proponents should be urging upon FTA to do this.

Clearly, a favorable resolution of the availability of STP funds would facilitate high-speed rail construction by providing a layer of Federal equity to supplement debt financing.

It is preferable to use tax-exempt financing for the debt; however, the project may or may not qualify, depending on the ownership structure of the project.

Current IRS requirements essentially require that the project must be owned and operated by the State in order to qualify for tax-exempt financing.

First, if the facility is set up on a private-ownership basis, only that portion of the project which constitutes a high-speed rail may be eligible for tax-exempt financing. If it's on a public ownership/private basis, the project may be privately operated, but still qualify for tax-exempt financing if the operator's contract satisfies the management contract rules.

To summarize, continued development of high-speed rail in Ohio will require fulfillment of the Federal Government's commitment to high-speed rail. It should be an accepted fact that financing a new transportation mode such as high-speed rail must be primarily borne by the public.

Efficient and safe transportation are a vital component of our society. So, should we finally cross the privately funded only hurdle facing high-speed rail and move forward with sufficient funding appropriations and finally acknowledge that the Federal role in leading high-speed rail development is long overdue.

I thank you for the time to testify, Mr. Chairman. And I'll be available later for questions.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you, Mr. Faulkner. We have your prepared statement and it will be made part of the record.
[The statement follows:]

STATEMENT OF ROGER A. FAULKNER

Thank you for this opportunity to testify on our efforts to bring a new mode of transportation, high speed passenger rail, to the residents of Ohio. I am here today representing the Ohio Railway Organization, Inc. (ORO), a private consortium of firms which has developed an implementation plan for making a privately-operated, profitable high speed rail system for Ohio a reality. Our plan was officially accepted by the Ohio-High Speed Rail Authority on June 23, 1992.

OVERVIEW OF PLAN

To begin, let me give you a brief overview of ORO's Plan. The alignment of the system, commonly referred to as the "3-C Corridor" alignment goes north from Cincinnati to Dayton, then east to Columbus and then on north to Cleveland. Essentially, the alignment cuts diagonally across the state from southwest to northeast. The entire length of the system is 260 miles long with nine stations and most of the alignment is on new right-of-way except where the system enters the major metropolitan areas.

The result of our year long effort concluded with a system capital cost estimated at \$3.1 billion in 1991 dollars. The annual operating and maintenance costs were estimated to be \$62 million (1991 dollars), and the annual projected revenues are estimated to be \$88 million (1991 dollars) based on 1.8 million riders.

An operations model was developed to account for the travel times between the stations and yielded travel times of 68 min. between Cleveland and Columbus (compared to 150 min. auto time), 94 min. between Columbus and Cincinnati (compared to 120 min. auto time) and 166 min. between Cleveland and Cincinnati (compared to 270 min. auto travel). The fleet size will be eight trains consisting of one power unit, one business class car and two custom coaches seating 200 passengers. There is also the option of adding a separate restaurant car in lieu of having catering in the first custom coach. The trains will operate 16 round trips per day in the 3-C Corridor on an hourly basis.

The results of our cost estimates indicate that very little of the project could be supported by private investment. The resulting \$26 million net operating revenues could realistically only attract \$100-\$150 million of private finances.

ECONOMIC BENEFITS

While the costs of developing and operating the Ohio high speed rail system between Cleveland and Cincinnati are substantial, so are the economic, transportation, energy and environmental benefits that will accrue to the State of Ohio, its communities along the route and the people in those communities. The total estimated economic benefits of developing and operating a high speed rail system in Ohio will amount to \$11.1 billion in 1991 dollars.

A breakdown of these benefits is presented on the following page with a few key conclusions:

- Constructing the high speed rail system will result in over \$5.5 billion in direct economic output for the state, increasing household earnings by over \$1.7 billion and creating 71,000 person-years of employment;
- Ongoing operations activities will result in over \$3.2 billion in economic output for the state over a 25-year period following construction of the system, increasing household earnings in Ohio by over \$1.2 billion and creating 79,000 person-years of employment;
- Users of the high speed rail system will save the equivalent of \$400 million through reduced travel times by not using their automobiles for journeys along this corridor; and
- As travellers divert to high speed rail, fewer automobile accidents, injuries and fatalities will result in a total savings to society of \$200 million.

As the economy of the state begins its rebound from the recent recession, the high speed rail system, even though balanced with other competing interests, would provide an economic boost to the manufacturing and service sectors of the economy to enable recovery and increase long term development potential within the state. Symbolizing effective, progressive state management of its resources, the system's

prestige value and business and employment impact could attract not only concerns involved in the development of the rail system itself but also those desiring to take advantage of the enhanced opportunities presented by the development of a reliable, high speed system of transportation.

PROJECT FINANCING

Like highways, airports and other transportation facilities, high speed rail provides a vital public service which is the proper concern of state and local government and a proper object of governmental financial assistance. High speed rail is also a candidate for a financing structure which relies substantially on private user charges—in this case, passenger fares. For the 3-C Corridor project to be financeable, it will be necessary to fuse public and private finance concepts; as our plan reveals, fares and other operating revenues, standing alone, will not be sufficient to support the full development and construction costs of the system, the acquisition cost for rolling stock and the necessary competitive return on equity. It will not be possible to look solely to the private sector for the necessary development and construction funds. Indeed, substantial public subsidies will be required if the public purposes served by the 3-C rail corridor are to be met.

Rather than implementing a pure privatization model, the goals of a financing plan for the 3-C Corridor system are to ensure that adequate funds are available for planning, development, construction and operation on a basis which minimizes overall construction cost and financing cost, and thereby limits the level of public support required from the State of Ohio. These goals can be accomplished by maximizing:

- The use of federal financial assistance programs;
- The use of tax-exempt financing; and
- The role of private debt and equity capital.

FEDERAL ASSISTANCE

Due to the size and magnitude of this program, the State of Ohio needs significant support from the federal government to proceed. The successful completion of planning, design and demonstration activities must depend heavily on governmental investment. Several potential sources of federal assistance are already incorporated in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) which include:

- A high speed ground transportation technology demonstration program—\$50 million;
- A high speed ground transportation research and development program—\$25 million; and
- The National Magnetic Levitation Prototype Development program—\$725 million.

These sources, if funded, would provide an initial basis of funds to allow several projects, such as Ohio's, to at least proceed into the pre-construction phase. To date, all of our activities culminating in the submission and acceptance of our implementation plan have been totally privately funded through "sweat equity" and cash contributions by our consortium members. However, continual attraction of this private capital will be difficult unless public funding sources become available.

At the present time, federal programs specifically aimed at fostering high speed rail are primarily concentrated in the areas of research, development, and demonstration. However, ISTEA did initiate one change in the federal law which, if fully implemented, ultimately could have important ramifications for the construction of high speed rail systems.

ISTEA amended the loan guarantee program under the Railroad Revitalization and Regulatory Reform Act of 1976 to authorize federal guarantees specifically for the financing of high speed rail facilities. The law now permits the Secretary of Transportation to guarantee obligations of a public or private railroad, including (as a result of ISTEA) obligations incurred to establish high speed rail facilities and equipment. High speed rail is defined as rail transportation "reasonably expected" to reach speeds of 125 mph. Not more than one billion dollars of guaranteed debt can be outstanding at any one time.

Any high speed rail facilities and equipment financed with a federally guaranteed loan must be at least 85 percent produced or manufactured in the United States, unless the Secretary finds that such a requirement would be inconsistent with the public interest, that items of satisfactory quality could not be produced in the U.S. in sufficient quantities, that the requirement would increase the cost of the facilities by more than 25 percent, or that the requirement would result in a violation of the obligations of the U.S. under an international trade agreement. While the federal guarantee is outstanding, dividends payable by a privately owned railroad are lim-

ited. Notwithstanding the enactment of ISTEA, the Federal Railway Administration has not been given budget authority at the present time to enter into any loan guarantee agreements. Correction of this situation should be high on the legislative agenda of advocates of high speed rail.

ISTEA also established a new federal matching program for use of funds in the Highway Trust Fund—the Surface Transportation Program (STP). The hallmark of this program is flexibility. In addition to traditional highway and bridge projects, STP funds may be used, among other things, for:

- Capital costs for transit project eligible for assistance under the Federal Transit Act;
- Highway and transit safety improvements programs, hazard eliminations, and projects to mitigate hazards caused by wildlife and railway-highway grade crossings;
- Highway and transit research and development and technology transfer programs; and
- Surface transportation planning programs.

As noted above, it is not completely clear what rail systems are eligible for assistance under the Federal Transit Act, and thus are an eligible use of funds from the STP. However, FTA could reasonably interpret its statutory mandate to allow it to direct STP funds toward high speed rail projects, such as the 3-C Corridor. There is a rationale for doing so, which high speed rail proponents should be urging upon the FTA.

ISTEA may also open the door to federal funding even of the non-commuter portions of the rail lines. ISTEA amends the Federal Transit Act to make the terms “transit”, “public transportation”, and “mass transportation” synonymous, and defines these terms to include publicly or privately owned rail facilities without reference to the geographical area served.

Clearly, a favorable resolution of the availability of STP funds would facilitate high speed rail construction finance, by providing a layer of federal “equity” to supplement debt financing.

In addition, ISTEA authorizes each state to lend federal assistance funds to public or private developers of specified tolled transportation facilities (bridges, tunnels, highways and approaches) and to deposit loan repayments in a revolving fund, which may then be reloaned for other eligible transportation projects (including mass transportation, which, as we have seen, arguably includes high speed rail). Many states are exploring the extent to which they can achieve a rapid first revolution of such funds so that federally-imposed restrictions on subsequent fund use will be reduced. Assuming that a portion of the proposed Ohio high speed rail facility qualifies for transit funding under federal law, amounts contained in any transportation revolving fund established by Ohio pursuant to ISTEA could be made available for financing of the 3-C Corridor. This could prove to be a powerful financing tool.

TAX-EXEMPT FINANCING

It is preferable to use tax-exempt financing for the debt issued by the State due to the interest cost savings. However, the project may or may not qualify for tax-exempt financing depending on the ownership structure of the project.

Current Internal Revenue Code requirements essentially require that the project must be owned and operated by the State or another governmental agency in order to qualify for tax-exempt financing. However, in order to develop high speed rail on a public/private partnership basis, certain rules may need to be revised.

First, if the facility is set up on a private ownership and operation basis, only that portion of the project which constitutes a “high speed intercity rail facility” may be eligible for tax-exempt financing. For purposes of qualifying as a high speed intercity rail facility, the facility must provide fixed guideway rail transportation of passengers between metropolitan areas using vehicles expected to operate at speeds in excess of 150 miles per hour. However, rolling stock is excluded from the definition of a high speed intercity rail facility for purposes of this type of tax-exempt financing. Also the private owner would not be entitled to the depreciation deductions normally available to the private owner of a facility of this type. These restrictions do not make private ownership of the facility an attractive option.

Second, if the facility is set up on a public ownership/private operation basis, the project may be privately operated and still qualify for tax-exempt financing if the operator's contract satisfies the “management contract” rules. The management contract rules can be summarized as follows:

- The term of the contract cannot exceed five years.

- The contract must be terminable at the government's option at the end of any 3-year period within the contract's 5-year term.
- At least 50 percent of the operator's compensation must be on a periodic, fixed-fee basis.
- No portion of the operator's compensation may be based on net profits.

If a portion of the 3-C project also qualifies as a mass commuting facility, tax-exempt financing for that portion of the project will not be subject to the management contract rules. The mass commuting portion of the project must be publicly owned, but it may be leased to a private party under a long-term lease.

The long-term lease effectively gives the operator multi-year operational rights for the project. For federal income tax purposes the State as lessor will be considered the owner of the mass commuting portion of the project and the private party as lessee will not be entitled to claim any depreciation deductions with respect to that portion of the project.

As can be seen, current IRS requirements are not oriented properly to large intercity systems which can only be efficiently operated on a long-term basis and as one system. It is our strong recommendation that these and all rules related to tax-exempt financing be reviewed to relieve these hindering requirements.

PRIVATE DEBT AND EQUITY CAPITAL

In order to reduce the need for public financial support, some of the components of the high speed rail system might be developed and owned by the private sector.

Rail cars are well suited to private ownership, since they are not eligible under current IRS rules for financing with tax-exempt private activity bonds. Privately owned and financed rail cars could then be leased by the private owner to the facility operator.

Stations and terminals are also candidates for private ownership because of the potential economic benefits which mixed use facilities present in addition to support of the rail facility. Also, right-of-way or space for construction of stations may also be donated by landowners wishing to enhance the value of their real estate holdings or business enterprises.

However, the summation of these items in our implementation plan only constitutes 10-15 percent of the total capital cost of the system. Again, this leads to the same earlier conclusion that the majority of the funding for the system must come from public sources.

REQUIRED GOVERNMENTAL ACTION

Continued development of high speed rail in Ohio will require fulfillment of the State's commitment since 1975 to implementation of this quality transportation service. The time has come for Ohio to agree in principle to go forward with high speed rail subject to further advancement of the design. Such agreement must include willingness to invest substantial public funds in the activities necessary for project development up to the point of a decision whether to proceed with construction. ORO estimates that three years and forty to sixty million dollars may be needed to complete the design, environmental, financial and other investigations which must necessarily precede construction. Not all of the cost must necessarily be borne by the state, but a substantial share can be expected to be derived from public sources.

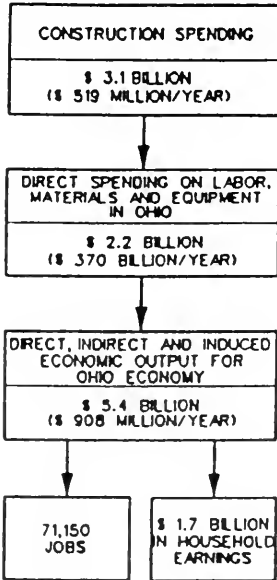
The other key governmental participant in realization of high speed rail in Ohio is the federal government. In 1990 and 1991 the U.S. Congress in both houses has indicated strong support for establishment of high speed rail in the United States. This support has, in turn, provided to the Federal Railroad Administration funds and encouragement that were not in evidence during Ohio's earlier efforts to implement high speed rail service. The current highly supportive thrust of federal participation in high speed rail offers a great opportunity to seek and define federal partnership for development and construction of the project.

It should be an accepted fact that financing a new transportation mode such as high speed rail must be primarily borne by the public. Efficient and safe transportation is a vital component of our society and economy and our nation's highways and airports are facing ever increasing levels of congestion. Our interstate highway system was built with public monies as well as our airport system. So we should finally cross the "privately funded only" hurdle facing high speed rail development, and move forward with sufficient funding appropriations and finally acknowledge the federal role in leading high speed rail development.

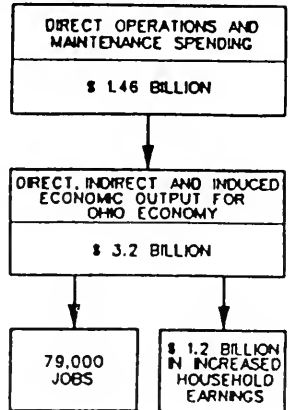
Ohio is ready but they cannot do it alone. They need the federal government to lead the way and finally add the third component to our transportation infrastructure—high speed rail.

SUMMARY OF ECONOMIC BENEFITS OF OHIO HIGH SPEED RAIL

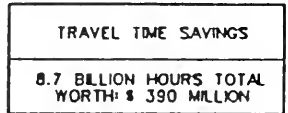
A. CONSTRUCTION PERIOD



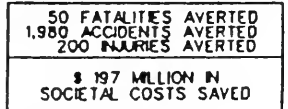
B. ONGOING OPERATIONS



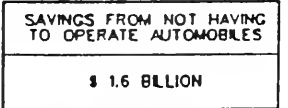
C. TIME TRAVEL SAVINGS



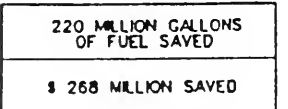
D. ACCIDENT COST SAVINGS



E. SAVINGS IN VEHICLE OPERATING COSTS



F. FOSSIL FUEL SAVINGS



SUMMARY TOTALS

	1991 \$'S
A. CONSTRUCTION PERIOD	\$ 5.4 BILLION
B. ONGOING OPERATIONS	\$ 3.1 BILLION
C. TIME TRAVEL SAVINGS	\$ 0.4 BILLION
D. ACCIDENT COST SAVINGS	\$ 0.2 BILLION
E. SAVINGS IN VEHICLE OPERATING COSTS	\$ 1.6 BILLION
F. FOSSIL FUEL SAVINGS	\$ 0.3 BILLION
<hr/>	
TOTAL BENEFITS OF OHIO HIGH SPEED RAIL	\$ 11.1 BILLION

STATEMENT OF CHARLES H. SMITH

Senator LAUTENBERG. Now, we'll hear from Mr. Smith.

Mr. SMITH. Mr. Chairman, Senator Specter, thank you for this opportunity to testify on the important subject of high-speed rail and maglev transportation.

Florida has been one of the most active States in pursuing and developing high-speed rail and maglev programs for well over 10 years. With your permission, Mr. Chairman, I would like to submit a more comprehensive written statement in a few days.

Senator LAUTENBERG. Without objection, we will await receipt of the statement, and it should be soon, Mr. Smith—

Mr. SMITH. For the record, it will be. All right. In 1981, Senator Graham, then Governor of Florida, traveled to Japan and was the first foreigner to ride on the Japanese superconducting maglev train operating on a test track in southern Japan.

On that same trip, he also evaluated and piloted the Japanese Shinkansen high-speed bullet train as well. When he got back to Florida, he immediately directed the DOT to conduct a feasibility study on the possibility of setting up a high-speed rail system in Florida. That study was completed in a year. And a public-private partnership was recommended to be established using a variety of innovative financing incentives.

This public-private partnership concept was later incorporated in the State, enabling legislation. The key incentives provided in this enabling legislation were: the opportunity to use real estate as a means to finance the system, the use of highway rights-of-way, and the ability of the State to issue tax-exempt bonds on behalf of the private company.

After several years of joint planning with two international private consortiums for a 300-mile route connecting Miami, Orlando, and Tampa, it was concluded in 1991 that even with these incentives, the Florida high-speed rail project could not be financed and built solely as a private sector sponsored project.

There were several reasons. The volatility of the real estate market, the savings and loan disaster, and so forth, wiped out real estate as an incentive for private investment. However, we still believe private investment through real estate can help support the construction of these systems.

Second, although high-speed highway corridors and railroad corridors were considered in these plans, it was often found that these rights-of-way are not suitable for high-speed train operations for the reasons that have already been mentioned; numerous grade crossings, curvatures, vertical alignments, et cetera. Nevertheless, in any event, high-speed trains operating in excess of 110 miles an hour are going to need a completely grade-separated route.

Third, tax-exempt bonds were considered essential for private sector investments. We were successful, in 1988, in getting the Federal tax code amended, but only to the extent that 25 percent of any bonds issued still must be allocated from the State's current private activity bond volume.

Mr. Chairman, we are appreciative of your support and cosponsorship with Senator Graham on the bill to amend that this year, again.

Based on our experience in Florida, we believe there are a number of areas where Federal legislation, programs, and policies could be used to encourage and facilitate high-speed rail and maglev systems.

First and foremost, high-speed rail needs to have a stable and secure source of Federal revenue dedicated for this purpose. A trust fund modeled on the highway or airport trust fund, based on the equivalent of 1 or 2 cents on the gas tax, would be appropriate. In any event, without predictable earmarked allocations, high-speed rail and maglev cannot compete with highway and airport projects funded at 70 to 90 percent from Federal sources.

Second, we support the passage of President Clinton's economic stimulus package, which includes the already authorized \$725 million funding for the ISTEA maglev prototype and an additional \$646 million for the high-speed rail projects. There are a number of maglev projects around the country, including several in Florida, that are being developed to take advantage of this prototype program and to develop an American-made technology.

We strongly believe that public-private partnerships should be encouraged and developed to deliver high-speed rail and maglev systems. The contributions and role of the public sector must be expanded. It is unrealistic to expect private enterprise to build high-speed transportation systems, while, at the same time, public entities are financing and building highway and aviation infrastructure.

We are also pleased the Florida high-speed rail corridor was designated by U.S. DOT as one of the five ISTEA section 1010 corridors for grade crossing hazard elimination. Although the Federal funding of \$1 million per year is not great, this is an important recognition by Congress and the Federal Government of the value of high-speed intercity rail service.

We are also working with Amtrak to encourage them to operate the X2000 tilt train in Florida. And we're encouraged by their interest in doing that.

Finally, we are just completing a study to use the median of I-4, Interstate 4, between Tampa and Orlando, for high-speed rail. This highway is scheduled for rebuild. And Secretary Watts has directed that the highway design include provisions for a high-speed rail line. This will save money, reduce environmental impacts and implement the intermodal policy and intent of the ISTEA Act.

Throughout our work in Florida, we have recognized the need to include Amtrak as a partner in proposed intercity passenger operations. And we support the efforts to provide Amtrak with a long term stable source of funding.

Mr. Chairman, Florida has been through a full cycle of enabling legislation, route planning, technology and operational assessment, private sector participation, project development, and financial analysis. Although we haven't yet found the precise combination for complete success, we have built a solid base of experience and data, and will be moving forward with our high-speed rail and maglev projects. We are pleased to be able to share our experience with others and with the Federal Government.

Thank you for your interest.

PREPARED STATEMENT

Senator LAUTENBERG. Thanks very much, Mr. Smith. We have your prepared statement and we will insert it in the record along with your more comprehensive statement when it is received.

[The statements follow:]

STATEMENT OF CHARLES H. SMITH

Mr. Chairman and members of the Subcommittee, thank you for this opportunity to testify on the important subject of high speed rail and maglev transportation. My name is Charles H. Smith, Manager of High Speed Transportation for the Florida Department of Transportation. Florida has been one of the most active states in pursuing and developing high speed transportation programs for well over ten years. With your permission, and because of the short notification for this hearing, I would like to submit a more comprehensive written statement within the next several days.

In 1981, Senator Graham, then Governor of Florida, was the first foreigner to ride the Japanese superconducting maglev train operating on a test track in southern Japan, and he also was able to evaluate and pilot the Japanese Shinkansen or bullet train which had been in operation since 1964. Upon his return to Florida he directed the DOT to conduct a statewide high speed rail feasibility study. That study concluded that a public-private partnership should be established and that with a variety of innovative financial incentives, a high speed rail system financed largely by the private sector through real estate development could be built.

This public-private partnership concept was incorporated in enabling legislation enacted by the Florida legislature in 1984 as the Florida High Speed Rail Transportation Act (subsequently amended and streamlined in 1992). The key incentives provided in this enabling legislation were:

- The opportunity for the private sector to use real estate development to finance the system, including benefit assessments and tax increment financing,
- The use of state highway right of way,
- The ability for the state to issue tax exempt bonds on behalf of the private company, and
- A centralized environmental permitting and licensure process.

After several years of joint planning by the state and two international private consortiums for a 300-mile route connecting Miami, Orlando and Tampa it was concluded that even with these incentives the Florida high speed rail project could not be financed and built solely as a private sector sponsored project.

First, the volatility and general decline in real estate investments in Florida, coupled with the national savings and loan disaster and the oncoming recession in the late 1980's wiped out real estate as an incentive for private investment. We still believe the concept of real estate "value capture" can contribute to financing, but projects of this magnitude cannot depend on this as a principal source of funds.

Second, although these high speed rail plans used highway and publicly-owned rail lines, these corridors do not necessarily provide the best alignments for high speed systems due to curvature, vertical alignments and at-grade crossings. High speed trains operating at speeds greater than 110 mph will need dedicated, grade-separated routes.

Third, tax-exempt bonds were considered essential for private sector investments. We were successful in 1988 in getting the federal tax code amended but only to the extent that 25 percent of any bond issue still must be allocated from a state's current private activity bond volume. Unfortunately, this 25 percent requirement is an effective barrier to the use of tax-exempt bonds. Mr. Chairman, we are appreciative of your support and co-sponsorship with Senator Graham and others of an amendment to the tax laws that would remove high speed rail bonds from this volume cap and allow high speed rail the same treatment as airports and transit systems.

I would also say that a centralized environmental permitting and licensing process at the state level is essential for the timely and cost effective approval of intercity systems. This centralized process was later incorporated in the 1988 state maglev enabling law and the Florida maglev project in Orlando which was subsequently certified for construction in about 18 months.

Based on our experience in Florida, we believe there are a number of areas where federal legislation, programs and policies could be used to encourage and facilitate high speed rail and maglev systems:

- First and foremost, high speed rail needs to have a stable and secure source of federal revenue dedicated for this purpose. A trust fund modeled on the high-

way and airport trust funds based on the equivalence of a penny or two of gas tax revenue would be appropriate. In any event, without a secure, earmarked allocation, high speed rail and maglev cannot compete with highway and airport projects funded at 70-90 percent from federal sources.

- We support the passage of President Clinton's economic stimulus package, which includes the already authorized \$725 million funding for the ISTEAMaglev prototype program and an additional \$646 million for high speed rail projects. There are a number of prototype maglev projects on the drawing boards around the country to develop an American-made maglev system. Two private maglev consortiums in Florida have announced plans to begin development of maglev prototypes that could become the new high tech industry for the post-cold war era, and employ the expertise of our defense and aerospace industries in the process.
- We strongly believe that while public-private partnerships should be encouraged and developed to deliver high speed rail and maglev systems, the contributions and role of the public sector must be expanded. It is unrealistic to expect private enterprise to build a high speed transportation system while, at the same time, public entities are financing and building our highway and aviation infrastructure with public subsidies.
- We are pleased the Florida high speed rail corridor was designated by the USDOT as one of the five ISTEAMaglev 1010 corridors for grade crossing hazard elimination. Although the federal funding of \$1 million per year is not great, this is an important recognition by Congress and the federal government of the value of high speed intercity rail service. We have also taken advantage of the high speed rail demonstration provisions of ISTEAMaglev Section 1036 and requested demonstration of the ABB X2000 train in Florida along with several innovative grade crossing barrier systems for lines where total grade separation may not be possible.
- Finally, we are just completing a study to use the median of Interstate 4 between Tampa and Orlando for high speed rail. This highway is scheduled for rebuild and Secretary Watts has directed that the highway design include provisions for a high speed line. This will save money, reduce environmental impacts and implements the intermodal policy and intent of ISTEAMaglev. Also, we will soon be completing a comprehensive statewide high speed rail ridership and marketing study. Preliminary results confirm that Florida has an excellent market for intercity high speed rail.
- Throughout our work in Florida we have recognized the need to include Amtrak as a partner in proposed intercity passenger operations and we support efforts to provide Amtrak with a long term, stable source of funding for capital improvement. The success of Amtrak's X2000 tilt train test clearly demonstrates the potential and need for high speed trains.

Mr. Chairman, Florida has been through a full cycle of enabling legislation, route planning, technology and operational assessment, private sector participation, project development and financial analyses. Although we haven't yet found the precise combination for complete success, we have built a solid base of experience and data, and have learned a lot. We are pleased to be able to share our experience for the benefit of others, including the federal government.

Thank you for your interest.

STATEMENT OF CHARLES H. SMITH

Mr. Chairman and members of the Transportation Subcommittee, thank you for permitting me to submit this written statement to accompany my oral presentation to the subcommittee on March 4. This report will provide additional detail on the high speed rail and maglev projects in Florida.

For the past ten years, the State of Florida has been aggressively working to establish high speed rail and maglev transportation systems as a component of our state's transportation network. Not only do we have to accommodate our normal population and business activities, but we also have to supply transportation facilities for the 40 million tourists who visit our state each year. As you can imagine, this places an extraordinary strain on our existing highways and airports. High speed surface systems must be developed to complement these other modes and allow us to minimize the difficult prospect of trying to accommodate all of our travel with new or expanded highways and airports. High speed ground transportation, whether wheel on rail or maglev technologies, is an energy efficient and environmentally sensitive form of passenger transportation that can reduce our dependence

on foreign oil and create a new industry with all of the attendant jobs and economic stimulus activity.

FEASIBILITY STUDIES

Commencing with statewide feasibility and technology studies in 1982, our state has moved forward deliberately and systematically with environmental, financial and technology evaluations for several high speed rail and maglev proposals. In 1984, a high speed rail feasibility study concluded that implementation of a high speed rail system in the state was feasible and that these systems could be built and operated profitably by private sector enterprise using innovative financing techniques. This conclusion was based on the assumptions that right of way would be provided by the state and that tax exempt bonding, real estate development and benefit assessment methods would be used to finance the project's infrastructure costs.

PUBLIC-PRIVATE PARTNERSHIP

In 1984, the Florida legislature enacted the Florida High Speed Rail Transportation Commission Act which established the authority to solicit private sector proposals to finance, build and operate high speed rail systems in the State. The Act established a centralized, competitive procurement and licensing procedure for the award of a franchise. Once issued, the franchise was to become the sole authority for the rail line, stations, and any real estate developments used for financing the system. The Act created a "one-stop permitting process" for all environmental and land use requirements.

In 1987, the State issued a request for proposals which was responded to in March, 1988 by two private sector entities, the Florida High Speed Rail Corporation and the Florida TGV Company. Both companies proposed to build a high speed rail system from Miami to Orlando and Tampa. The Florida High Speed Rail Corporation proposed to use the ABB X-2000 technology and the Florida TGV Company proposed to use the French TGV Atlantique train. Initially, both proposals assumed revenues generated from real estate developments would be used to offset capital and infrastructure costs. The local governments' opposition to the expanded use of real estate development as the major means of financing this project along with the realization by the two proposers that high speed rail systems could not be built without public funding, led to the withdrawal of the applications from further consideration.

1992 HIGH SPEED RAIL ACT

A serious shortcoming in the 1984 statutory process was its failure to structure decision-making in a progressive, logical sequence that corresponded to business decisions of any private entity undertaking a major capital investment. The Florida legislature, amended the High Speed Rail Act in 1992 to deal with these problems and to streamline the application and franchise process. The new law emphasizes the need for a stronger public/private partnership.

Instead of the all encompassing process established by the original act, the amended law created a phased approach to the application and franchise process. The first phase would be the approval and award of a franchise to a private entity to build a high speed rail system based on that entity's business and financial plans. Once that is done, the Department, along with other local, regional and state agencies, would work together with the franchisee to develop the more detailed plans such as design, construction and all environmental documentation for the project. Formal local and statewide hearings would then be conducted and finally the Florida Governor and Cabinet would award certification for the project to move forward to implementation.

CURRENT HIGH SPEED RAIL STUDIES

Before proceeding with a new request for proposals in accordance with the 1992 high speed rail act and with the new application and franchise process, the Florida Department of Transportation opted to conduct more detailed analysis of both intercity high speed rail ridership potential and of alignments and corridors throughout the state that are suitable for high speed rail operation.

Starting in December, 1991, the Department undertook three study efforts as follows:

1. Statewide corridor assessment study: This study investigated various corridors throughout the state and their potential for high speed rail implementation. The

study evaluated many existing rail, highway, and utility corridors and identified the most promising candidates based on environmental consideration, physical features, geometry, operational considerations and potential for capacity enhancement and for high speed rail implementations.

2. Orlando-Tampa Corridor Assessment Study: This study investigated in more detail the Orlando-Tampa Corridor and its suitability for high speed rail implementation. Because of intensive development and the existence of major wetlands within the Corridor, the Orlando-Tampa Study was forced to focus on existing corridors connecting Tampa to Orlando—mainly the I-4/I-275 and the CSX rail corridors. Because of the geometric limitations associated with the CSX Corridor and the numerous at-grade crossings that would have to be separated, the I-4/I-275 corridor is proving to be the best alternative for high speed rail implementation between Orlando and Tampa. For this reason, the Department has undertaken a bold effort to preserve an envelope within the median of the I-4/I-275 corridor between Orlando and Tampa for future high speed rail implementation. Several alternative route alignments and station sites have been investigated as shown in Figure 1.

3. Statewide Market and Ridership Study. The purpose of this study is to document existing intercity travel between Florida's major cities, to assess intercity travel potential by alternative modes to develop intercity travel forecasting model, and to forecast future intercity rail travel using different classes of rail service. As part of this study, intercept surveys were conducted at several major highways and airports throughout the state.

Data collected from the surveys were used to develop the Total Travel and Mode Share Demand Models as shown in Figure 2. Figure 3 shows the 1992 travel market analysis results. The largest intercity travel market is the Orlando-Tampa market with 12.6 million person trips per year. As expected, the intercity travel market is dominated by the automobile mode over short distance trips while bigger portions of air trips are evident in longer distance trips such as Tampa—Southeast Florida where air trips represent about 24 percent of the total intercity travel for that market.

Applying the ridership models developed under this study, the annual ridership on an Orlando-Tampa high speed rail system ranged from 1.8 to 2.8 million riders depending on technology and alignment, stations served, level of service provided, and mode of access to the high speed rail stations. Applying the same models for a Miami-Orlando-Tampa system, annual ridership estimates ranged from 4.6 to 7.3 million riders.

Upon completion of these studies in the spring of 1993, the Department will begin implementation of a statewide high speed rail system in accordance with the amended high speed rail act.

MAGLEV DEMONSTRATION PROJECT

In addition to its efforts to implement intercity high speed rail in Florida, the state, through the enactment of the Maglev Demonstration Project Act by the Florida Legislature in 1988, is taking a lead role in furthering the development and implementation of new high speed ground transportation technologies. The state issued a request for proposals in 1988 to solicit domestic and international companies to submit plans for what would likely be the first commercial maglev operation in the world. Responding to this request for proposals, a new Florida-based company, Maglev Transit, Inc., formed a consortium of domestic and international companies, organized around the Transrapid maglev technology and submitted a proposal for what we now call the Florida Maglev Project. Since its submittal in 1989, the MTI proposal has gone through multiple certification reviews, numerous public hearings and intense scrutiny by federal, state and local agencies to assure compliance with every aspect of developing and approving a major transportation project.

In June 1991, the Florida Governor and Cabinet issued a final certification order which authorized MTI to proceed with project development. As of March 1993, MTI has advised the Department that the partnership's financial plans are not progressing as planned and that they may request an extension of the deadlines for submission of final financial plans. Whether or not an extension will be granted will depend on the nature and extent of the MTI request.

MTI PLAN HIGHLIGHTS

If the project is built this system will provide visitors to Orlando rapid access from Orlando International Airport to the Central Florida tourist area at International Drive, 14 miles to the west. Figure 4 shows the location of this project.

More than 8 million annual passengers are projected to ride this system which will operate around the clock with 15 minute headways during peak periods. The

13.5 mile trip will take only 6.5 minutes at a top speed of 250 mph. Highlights of this proposal are as follows:

The Maglev Line

- Length is 13.5 miles.
- Single track guideway will be on an elevated structure, minimizing environmental impact on wetlands.
- Maintenance facility will be located at the International Drive end.

Technology

- Electromagnetic systems (EMS) Transrapid technology developed and tested in Germany. Operational on test track since 1983, with speed capability of 350 mph.
- Propulsion is provided by a linear synchronous motor (LSM) constructed as an integral part of the guideway.

Financing

- Total project cost of \$622 million. Major private financing will be provided by Japanese investors. \$97.5 million in federal funds were authorized in the Intermodal Surface Transportation Efficiency Act of 1991 for the project.
- Equity financing will be provided through an international partnership of C. Itoh, Dai-Ichi Kangyo Bank and others.
- Project developers also plan a major hotel complex at the International Drive station.

Operations

- Projected to begin in 1997.
- 24 hour operations; 4 train sets of 5 cars. Each train has seating capacity of 400; daily carrying capacity of 51,200. 128 daily one-way trips planned with a total annual ridership of 8.4 million in the first full year of operation.
- Trains operate on 15 min. headways in peak periods. 6 minute trip time between stations; maximum speed of 250 mph.

Implementation Schedule

- The Department will provide public agency oversight for compliance with all certification conditions.
- The Federal Railroad Administration will have jurisdiction for safety compliance in accordance with the 1988 Railroad Safety Act.
- Construction must begin within 3 years of certification (June 1994).
- Construction will take approximately 2.5 years.
- Vehicle operational testing can be completed in 4 months after construction is complete.
- Revenue operation must begin no later than 3 years after construction begins.

MAGLEV PROTOTYPE DEVELOPMENT

Recently two US-based maglev companies have announced plans to begin development of domestic maglev prototypes in Florida. The American Magneplane consortium has initiated plans to construct a 2-3 mile test track in the Lakeland area to begin development of the superconducting Magneplane system.

The American Maglev Star consortium has issued plans to build a 20-mile revenue line connecting Port Canaveral, Kennedy Space Center and the mainland. Initially, the line will be used to develop and test a superconducting maglev technology for extension throughout the U.S.

Both these projects are being initiated with private funding, but expect to compete for the maglev prototype program authorized in Section 1036(c) of the Intermodal Surface Transportation Efficiency Act.

Florida is recognized as a progressive center for maglev development because of its state legislative initiatives and innovative technical work over many years. The State of Florida and the private consortiums developing maglev and high speed rail look forward to working closely with other states, the federal government and private enterprise to make maglev and high speed rail a reality for the benefit of the entire nation.

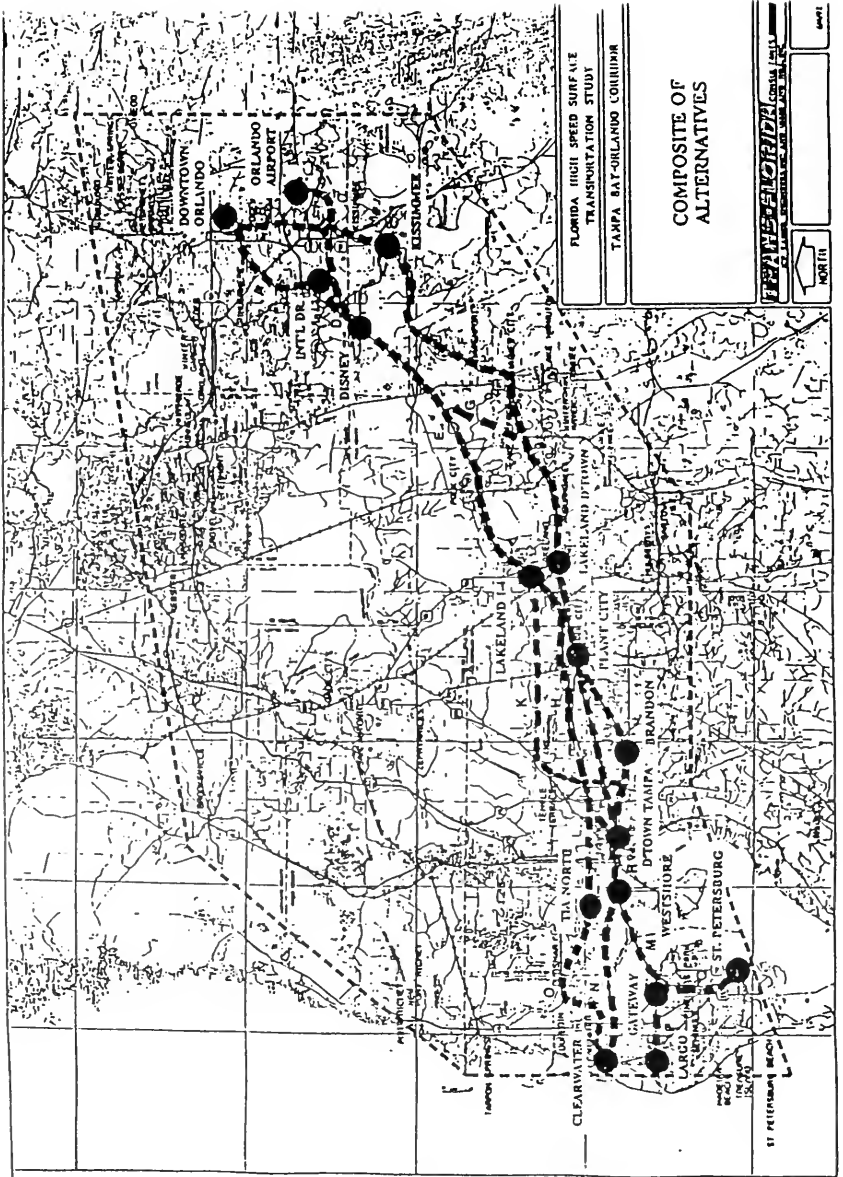


FIGURE 1

High Speed & Intercity Rail Market/Ridership Study Travel Demand Analysis Approach

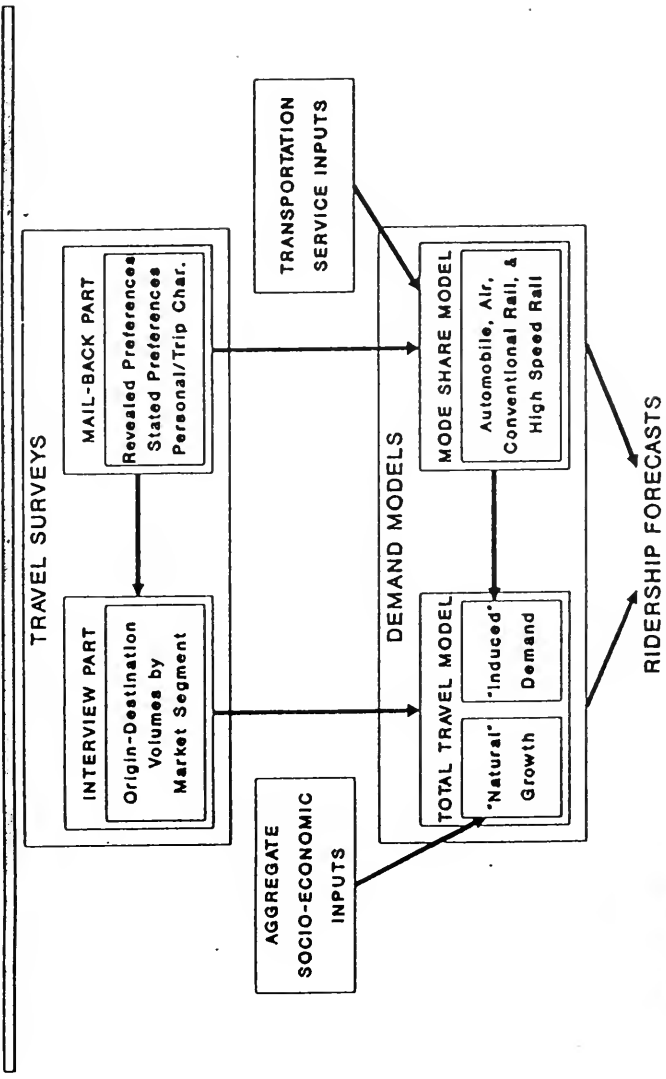


FIGURE 2



FLORIDA DEPARTMENT OF TRANSPORTATION
February 1993



Peat Marwick

1992 Travel Market Analysis Results

	AUTO TRIPS	AIR TRIPS
Tampa-Orlando	12,590,500 (99.7%)	44,200 (0.3%)
Tampa-Space Coast	931,400 (99.7%)	3,000 (0.3%)
Tampa-Daytona Beach	737,800 (99.9%)	1,100 (0.1%)
Tampa- SE Florida	1,809,900 (76.1%)	568,300 (23.9%)
Tampa-Jacksonville	1,066,000 (95.7%)	47,600 (4.3%)
Orlando-Space Coast	10,589,100 (99.9%)	2,100 (0.1%)
Orlando-Daytona Beach	9,717,300 (99.9%)	2,200 (0.1%)
Orlando-SE Florida	4,615,300 (90.1%)	509,800 (9.9%)
Orlando-Jacksonville	2,657,700 (99.6%)	9,400 (0.4%)
Jacksonville-SE Florida	683,200 (82.1%)	148,500 (17.9%)

FIGURE 3

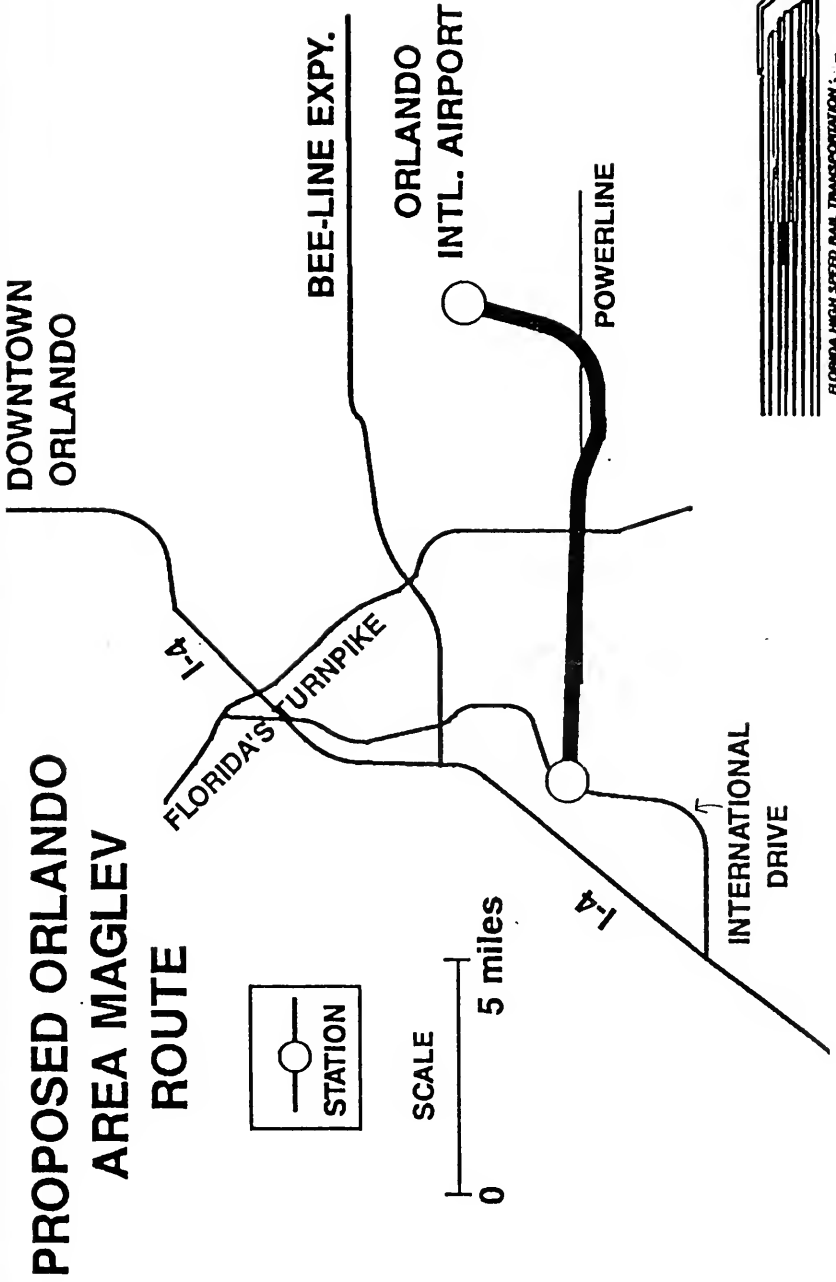


FIGURE 4

FUNDING HIGH-SPEED RAIL AND MAGLEV SYSTEMS

Senator LAUTENBERG. I think we've established a record for six witnesses, each of whom has finished on time. That talks about high speed in the condensed form.

I assume that you heard some of the questions that were asked before of the first panel. And I want to resubmit those questions to you. And any one of you who would like to jump in, I would invite to do so.

And that is, with the \$1.3 billion that President Clinton has proposed to be available for the development of high-speed rail and maglev systems, any comments you'd like to make about how this committee should distribute these funds in order to maximize the development of high-speed rail systems around the country.

Are there any volunteers? Ken?

Mr. MEAD. Yes, sir. Do you see this map here, down on the floor?

Senator LAUTENBERG. I see it.

Mr. MEAD. There are more high-speed rail corridors designated on there than FRA has designated. You would be interested in noticing that of the five corridors that FRA designated, none of them are the corridors for which there is a pending ultra high-speed proposal.

I think the incremental approach definitely ought to be pursued. I think that the committee needs to give some attention to higher speeds in the nonelectrified corridors.

And also I think some attention ought to be paid to one or two flagship projects in this country. If we try to pursue five or six flagship projects, you're going to spread the money too thin. The private investors will not be there.

Senator LAUTENBERG. Do any of you disagree with Mr. Mead's comments?

Mr. SMITH. Mr. Chairman, if I may, I think there are several States that have been very active in high-speed rail planning and have gotten their plans well along; certainly Texas and Florida.

We're engaged in trying to develop a maglev project right now. I mentioned to you that we have plans to preserve and to actually design the Interstate 4 median between Tampa and Orlando. To me, that illustrates a very, very good place to begin to develop a real serious high-speed rail program.

The market is there. We've done a market study. We think we are ready to really move forward, if the funds are there, and would do that.

Senator LAUTENBERG. I'm not surprised, Mr. Smith, that you recommended we consider the initiatives developed by Florida, but if one were to argue another side, one could say, well, you have a significant problem with grade crossings in Florida. But I'm not suggesting that your State should not be one of those.

I think it could be very well served by high-speed rail in the State of Florida, but it's hard not to agree that is concentrating our relatively limited investment capability in a few areas. Let's get these programs going.

Mr. Mead, I'm struck by the chart that sits on the bottom there, that says if you want to get into maglev, the costs per mile are significantly more than the others. And I assume that the other cal-

culations include the cost for acquiring rights-of-way and so forth, which is essential for the TGV kinds of programs.

Mr. MEAD. Yes, sir.

Senator LAUTENBERG. OK. Does anyone at the table know of any maglev programs that are operational for passenger service on a routine basis? Mr. Vranich?

Mr. VRANICH. Mr. Chairman, none are in operation in revenue service. I did, about 6 months ago, ride the German Transrapid maglev line at 190 miles an hour.

Senator LAUTENBERG. The length of that trip was?

Mr. VRANICH. The length of the—oh, it isn't very long. It's only about—

Senator LAUTENBERG. It's harder to stop and then start—

Mr. VRANICH [continuing]. Seven miles or something like that. But it was remarkable to me how good the ride was. And I think what we have with maglev is an emerging technology that I always like to say it's a sure thing. It's going to happen. Just like everybody was convinced that the Wright Brothers' second flight would happen.

Senator LAUTENBERG. Do you know when the first maglev demonstration was performed?

Mr. VRANICH. Starting 20 years ago, the Germans and Japanese began developing these projects and have poured—each country has poured more than \$1 billion into it.

The Japanese technology, by the way, is the one that comes in at about \$60 million a mile, because it's a unique superconducting system that has to handle Japan's rugged mountains. And there's a lot of tunneling there.

I always disagree that that is a possible cost in the United States, because other than the first line, demonstration line, I think the costs for maglev can be brought way down. And experts at companies like Gruman say that they could build it for between \$10, \$15, and \$20 million a mile, depending on topography.

Senator LAUTENBERG. Why wouldn't an inclination be there to try to adopt the TGV steel-on-steel type of system? Because it's my understanding that in the Northeast corridor section north of New York on the way to Boston, that some track straightening could be done for a cost of around \$1 billion, plus a small sum, maybe a total of \$1.2 billion, and you could get benefits almost immediately upon completion of some of the track realignment?

Mr. VRANICH. Oh, you can. And I'm fond of seeing that there are different high-speed surface transportation solutions for different parts of the country.

In brief, I could make an argument to you that we probably should go to maglev line from Anaheim, CA, to Las Vegas, over the rough mountains, avoid tunneling, save money. Maybe I could build that less expensively than a steel-wheel line.

In a place like Ohio, from Cleveland to Cincinnati, or Texas, Dallas to Houston, trains like the French TGV, German ICE, are perfect. They're fairly flat. And there's a lot of reasons why they work. So, I always like to say that there are different trains for different terrains.

Senator LAUTENBERG. We could have the "love train." [Laughter.]

That's the counterpart to the boat. What's the distance of the Orlando project, Mr. Smith?

Mr. SMITH. It's 13½ miles, Senator. And it's the only project in the country that actually has gone through a certification process, where the State has actually awarded the rights to a company to build that project.

On its present schedule, it's to go under construction within 2 years, and would be in operation in 3 years.

Senator LAUTENBERG. What would be the mission there for high-speed service? Is that the primary reason for doing high-speed service or does maglev lend itself to the terrain or the topographical—

Mr. SMITH. No; this is a demonstration project. It's in a unique market in Orlando going over to the Disney area. And it does have a built-in ridership market. The State law that authorized this project was a demonstration statute that wanted to demonstrate this new technology.

This system certainly could become the high-speed intercity technology, once it's proven, but obviously we'd want to make sure it works and gets built.

Senator LAUTENBERG. Would it be part of the Disney complex? Is the mission to get folks to take an amusing ride? Because for 15 miles, if you go 60 miles an hour, the arithmetic's pretty simple. I mean, it's not the kind of thing that would say, well, let's fly instead of taking that 15-minute train ride.

I just wonder whether maybe we ought to call up Michael Eisner, whom I know, and see if they would do it out of the Disney funds.

Mr. SMITH. I think somebody called him. And he said no.

Senator LAUTENBERG. He said no. But what about the question of uniformity? Should the systems be the same? Is there an advantage to having a national standard—of technology A or technology B—and having high-speed sections of that system?

I mean, you're not going to go cross-country at 200 miles an hour on a train. It's just not going to be economically feasible. But how about the fact that there is an interconnect and you can use equipment easily, interchangeably, between the different systems?

Mr. MEAD. I think that's an interesting point. The Ministry of Research and Development in Germany sponsors the Transrapid maglev. It's interesting to note that the Ministry of Transport seems to be supporting steel-wheel on steel-rail, where the research arm of the government is supporting maglev.

And I'm not sure what the answer to your question is, but I believe the Germans are facing this issue. The maglev research and development in Germany is being financed, but has not been put into revenue service there. And I don't know of any immediate plans to put it into revenue service in Germany.

Dr. MULVEY. There's also some trends toward integrating these high-speed rail systems with the Nation's airports, so that these systems become feeder operations, substituting for many short distance air trips and becoming not only part of the Nation's rail system, but part of its overall intermodal transportation system.

Senator LAUTENBERG. The loan guarantees present an interesting prospect, because it's believed that at least \$10 in private sec-

tor financing can be arranged for every \$1 appropriated. That's with, again, Government guarantees.

Does it strike you as reliably the best way to leverage private sector dollars toward the development of high-speed rail systems?

Mr. SALCI. I think that to answer that question and to preface it by your former question, I think that the project that we're involved in in Texas, which has been a project where there has been certificate of public need established by a public agency and about 3 years of work and about \$30 million of actual private investment to complete ridership and environmental studies, is nearing completion.

The ability for any of these projects, like Texas, to be successfully financed, obviously depends primarily on what the ridership numbers are going to be, because that's going to generate revenue.

But getting them off of the ground, as I said in my remarks, the venture capital required, the up-front moneys, clearly having the capacity of Government-backed guarantees is critical. And to further amplify that, the comment you made earlier to Mr. Claytor about the TGV and the financing, it is true that the French have a very strong national policy on their ground transport systems, but the reality is that setting aside that, yes, there's electrical nuclear power, the system was financed with Government guarantees—the initial system, the Southeast Line—initially on an 11-year schedule, and it was repaid in 9.

And the Atlantique Line, the second line that was put up and running in 1989, is undergoing the same kind of payback, even with a greater acceleration.

So the reality is, under the right environments, yes, these things can be privately financed, but this is not France and I don't want to represent that. The case in Texas, in particular, is we have a situation where there are 19 million people today traveling amongst these three major cities, of which about two-thirds of the State of Texas live or reside within that Texas Triangle.

The forecasted ridership for the 1998 timeframe, when this system would be theoretically up and running if it proceeds, is about 30 million travelers, and by the year 2015, about 60 million.

So the reality is, No. 1, the existing capacities of highways and airports simply can't even begin to meet the growing demand that's going to be there. And Texas is a populous and growing State.

And, second, we believe the project in Texas will be compatible with airline travel. In fact, a large part of the forecasted ridership analysis is based on the ability to supplant the intrastate ridership currently carried by American and Delta Airlines, who have large hubs and who don't make a lot of money running these hubs. I mean, American Airlines just recently announced they want to get out of the short haul business.

These cities are of ideal distances, about 200 to 300 miles apart. And the TGV type of system, we think, is ideal, but up front—

Senator LAUTENBERG. Has Texas, the State of Texas, decided to put any State funding into this project at this juncture?

Mr. SALCI. At this juncture, the State has not. The State, in the creation of its authority, indicated that the authority itself would be not eligible for State funds, but that doesn't prohibit the corporation itself from potentially being eligible, but that's an issue

that we're going to have to address, Mr. Chairman. There's no question about that.

Senator LAUTENBERG. Could guarantees be a substitute for bonds, do you think? Would there be larger appeal for guarantees, significantly, than straight bonding issues?

Mr. SALCI. I think that's a function of interest rates and the markets at the time you go to market, Mr. Chairman. And today's market rates are very attractive. And tax-exempt bonds versus conventional, the basis point spread isn't that great, but this current situation isn't going to last forever. And having that capacity, I think, is very important.

Senator LAUTENBERG. The question is: How do we treat the accounting here? Is there a standard now by which we charge our operating budgets with credit guarantees?

Mr. MEAD. Yes; I'll get back to you on a full response for that question for the record, but, you know, several years ago, these things, guaranteed programs, were off-budget.

For example, title 11, Maritime Administration Program had invested heavily in L and G fleets. It went belly-up. The full faith and credit of the United States then was called upon. And Congress had to keep putting money into this program, but it was totally off-budget.

It has been changed, but I'm not sure exactly how it has been changed. I don't think it is considered 100-percent outlay.

Senator LAUTENBERG. Since I asked Mr. Salci the question: How much funding has been provided by the other States who have a specific interest represented?

Mr. SMITH. Well, in Florida, Senator, our statute does not prohibit public funding. Although during the process, the private companies have come in and evaluated whether or not they could provide the financing through their own sources; equity, loan guarantees from their own sources, as well as the real estate. And they pursued that for several years and never did ask the State until the very end for funding.

And at that point, it was a little—politically, it just wasn't possible. The State of Florida was in a budget crunch. And we weren't able to respond favorably, but they simply weren't able to finance it through the private sector process that had been established, but we're not prohibited from spending public funds.

Senator LAUTENBERG. But there's been nothing so far.

Mr. Faulkner, is there anything from Ohio?

Mr. FAULKNER. All of the effort, to date, on the implementation plan of our consortium has amounted to about \$1.5 million, which is basically a feasibility plan for moving forward, but we have not advanced into the actual preliminary development until the clearer signs of the sources are there.

Senator LAUTENBERG. How about the involvement of your State environmental agencies in supporting the projects and interest in compliance with clean air environmental impact statements? What kind of response have you seen thus far?

Mr. SMITH. In our process in Florida, we have an environmental certification process that goes with the project. And all of the State agencies and local agencies; in fact, the private environmental groups, were very, very supportive of high-speed rail and maglev.

Probably in the case of the maglev project, it was certified in record time, because it was viewed as an environmentally sound project.

The environmental people would look at it and say the alternative is so much worse, that high-speed rail or maglev systems really should be built in environmentally sensitive areas, such as Florida and other States as well.

Senator LAUTENBERG. Mr. Faulkner, have you had any involvement at all from your State environmental department?

Mr. FAULKNER. The environmental group has been pretty much like Florida. They're very supportive in theory of what high-speed rail can do, but to be quite honest, I don't think they see it as a near-term reality. So they aren't really taking any official position. Most of the effort has been directed more to metropolitan areas where they're having to deal with the requirements under the Clean Air Act.

Senator LAUTENBERG. Mr. Salci, do you—

Mr. SALCI. We have made substantial progress. We have—through the franchise process in Texas, the authority itself that's governing the regulatory aspects—has hired an environmental consultant, which we, the private consortium, are paying for. The work is about one-half complete.

It basically is work that's being done at the basic level of complying with the National Environmental Protection Act. We've had about 50 scoping meetings throughout the State, soliciting public participation; that includes all of the various State agencies. And the Federal Railway Administration has been very deeply involved in assisting us in that process.

Senator LAUTENBERG. Do any of you believe that—Mr. Smith, in your case, I just had visited Florida and I spoke to some of the transportation people there. There's a great deal of interest in another north-south highway adjunct to the turnpike and 95, I guess it is, or 195—I don't remember the number. Do you think your State would support your high-speed rail projects with Federal highway funds if they had the opportunity to do so?

Mr. SMITH. In principle, if they had the opportunity to do so. I guess, Senator, the—unfortunately, Florida is one of the donor States where we send a lot more money to Washington than we get back. I think it's about 82 cents on the dollar we get back. So it makes it difficult.

However, let me state that our policy in our State and Secretary of our Transportation Department, Secretary Watts, about a year ago, announced a policy that we would not build anymore interstate or intrastate highways greater than 10 lanes total, 4 of which would be HOV lanes; and as part of that policy, said that any time we plan or rebuild a highway, we're going to plan to accommodate a high-speed rail or transit system in urban areas, depending on the location.

So I think our policy is very clear that we're going to support high-speed rail to the extent we can, using the flexibility of provisions of ISTEA or any other future provisions that may come along.

The project I mentioned about the Orlando-Tampa I-4 reconstruction, that work is, right now, being funded, obviously, from the highway program; however, some of those funds and some of that work will, in fact, result in a right-of-way, a grade-separated, fully

dedicated right-of-way for a high-speed rail line connecting Tampa to Orlando on a route of about 75 miles. So, in effect, we are using highway funds and planning activities to support the high-speed rail effort.

Senator LAUTENBERG. Don't you think—and by the way, I support rail rights-of-way along our highways, but don't you think that it then presents a competitive attraction for the passenger who says, "Well, OK. Today the weather is a little bad. I'll hop on the train. Tomorrow, if it's a nice day, we'll put the top down and go"?

The answer I get from your comments, Mr. Smith, is that, yes, if we can build highways, we can kind of include some rail service.

Florida got \$97 million, I believe, for its interests, to date. I hope that your State doesn't feel short-changed on the terms of donor or donee relationship. We had quite a discussion about that during the ISTEA debate. And I think that things have been adjusted to make sure that our friends in Florida, particularly, are treated fairly. There's a lot of appeal here.

Mr. SMITH. We appreciate that. And we are, indeed, treated fairly. My only thought was that we have such tremendous highway needs that, probably, it would be very difficult for our highway policymakers to just be able to take money that is absolutely essential for highways and transfer it to high-speed rail, but where it can work, we certainly intend to use the flexibility provisions of the highway program.

Senator LAUTENBERG. Your maglev project was scheduled to have all of its financing arranged—I think you mentioned in your comments—by this June and can start construction within 1993. Is that schedule still on track?

Mr. SMITH. Senator, probably, just as—quite recently, it probably isn't. We probably will be asked to consider an extension of time for that deadline. I think with a project of this magnitude, with the new technology and totally a new concept, it's not unexpected, but we probably will be asked to extend it, which the department has the authority to do.

Senator LAUTENBERG. Is the Japanese investment community interested in financing the project?

Mr. SMITH. Yes; the project is financed, primarily, by Japanese investments. The Bank of Tokyo and several other large trading companies are involved in the financing arrangement with the—of course, the German organization is supplying the technology. And that's been somewhat of a difficult set of negotiations, as I understand, of getting that partnership agreement.

Senator LAUTENBERG. Translation. [Laughter.]

Why isn't the American investment community interested, in your view, Mr. Smith?

Mr. SMITH. As a matter of fact, I think they are interested. I think that—we're going to begin to see and you're going to hear very shortly an announcement in Florida of an American consortium that is going to build the prototype maglev system for the United States, the United States of America, using aerospace and defense industries.

A number of companies are beginning to form up. This is a very serious effort that's being promoted by the inventors of this maglev—originally, Dr. Gordon Danby and Jim Powell from New

York. And they have been very interested and active in defining and designing what they think should be the prototype system for the United States, which answers one of your questions you raised earlier about should we have a single type of technology.

Certainly, in the case of maglev. We're probably going to have maglev and wheel rail systems in this country. I don't have any doubt about that, but for the maglev system that becomes the interstate or the intercity system for large regions, clearly, it ought to be one technology. And I think that's the purpose of the ISTEA prototype program.

So there are U.S. companies being formed up for that purpose.

Mr. MEAD. Just a prospective point, Mr. Chairman. For the cost of these systems, the R&D component is important, but the actual hardware is about 20 to 25 percent of the cost.

Senator LAUTENBERG. That's a lot of soft costs, if you can describe it that way.

Thank you very much, gentlemen.



PANEL III

NONDEPARTMENTAL WITNESSES

LEHMAN BROTHERS

STATEMENT OF MR. ROBERT C. BROWN, SENIOR VICE PRESIDENT

MOODY'S INVESTMENT SERVICES

STATEMENT OF KATHY EVERS, ASSISTANT VICE PRESIDENT, MASS
TRANSIT SPECIALTY GROUP

THE HADLEY GROUP

STATEMENT OF HARRIET STANLEY, PRINCIPAL

DILLON REED & Co., INC.

STATEMENT OF MARC FASTEAU, MANAGING DIRECTOR, PUBLIC FI-
NANCE DEPARTMENT

PUBLIC SECURITIES ASSOCIATION

STATEMENT OF MICAH GREEN, EXECUTIVE VICE PRESIDENT

INTRODUCTION OF WITNESSES

Senator LAUTENBERG. We'd now, at this late moment, like to hear from the next panel, the people from the investment community. We're anxious to hear their testimony.

Thank you very much.

Take the right name plate, otherwise we'll attribute your statements to your predecessors here.

Mr. Brown, Ms. Evers, Ms. Stanley, Mr. Fasteau, Mr. Perez, and Mr. Green. Is everybody here?

Well, we thank you very much. We're anxious to have the testimony summarized. And we would call first on Mr. Brown, senior vice president of Lehman Brothers, where I, in my former iteration, had a significant amount of contact. It has nothing to do with my favorability, I must tell you, but Lehman Brothers did a lot of work with my old company, ADP.

Now, once again, Mr. Brown, please.

STATEMENT OF ROBERT C. BROWN

Mr. BROWN. Thank you very much, Mr. Chairman. And I can tell you, Lehman Brothers has very much valued its association with you during your time in the private sector.

Just by way of introduction, prior to coming to Wall Street, I was assistant director of the Ohio Department of Transportation. And one of my responsibilities there was administration of Ohio's work,

at that time, in the 1980's, in investigating the feasibility of a high-speed rail system for the State of Ohio.

There really are two finance issues, I think, raised by high-speed rail. One is the credit question, and the second is revenue sufficiency.

There are a number of panelists here today on credit. And I will say very little about that, except to say that certainly there are elements of a high-speed rail system that—for which credits can be fashioned, which will be creditworthy and marketable.

And those elements could be financed. But the more fundamental question for high-speed rail, as you have been hearing from many panelists today, is the question of revenues and project economics. And we should be blunt about this, Mr. Chairman.

In the United States, high-speed rail is not a self-financing proposition. There simply are not enough revenues generated by a project to finance the entire program. A 1991 transportation research board study, which was an excellent and comprehensive study, concluded it is unlikely that any new high-speed rail system in a major U.S. corridor would cover its capital and operating costs from farebox revenues.

This is not a situation, but for congressional enactment of liberalizing enabling legislation, the private sector will come forward and finance. And by enabling legislation, I include in that category the loan guarantees that there's been some talk of this morning. That kind of credit enhancement or other enabling legislation is not enough to enable one of these projects to be financed.

What I would propose, Mr. Chairman, is a system of public high-speed rail corridors. And by that, I mean corridors that would be provided right-of-way that would be provided by the Government, drawing on the kinds of lessons that the Federal Government has learned from the successful experience with aviation and highway systems.

The right-of-ways would be constructed through some sort of Federal-State partnership, very much like the interstate system.

The users of the corridor, the operators in the corridor, would be private. They would be private carriers, which would lease space.

The technology could be varied in the corridors. In fact, that I would envision would actually make provision for both steel-wheel type facilities and the maglev facilities that there's been some talk about today.

The lease payments that private carriers would pay should be sufficient to cover operating and maintenance costs. You've heard some discussion about that today. There are those kinds of projections for usage of these corridors, but operating and maintenance costs—and that would include energy costs—could be covered. There might be, in addition, some contribution to capital, but certainly, clearly, not enough to fully fund all of the capital costs of these programs.

The benefits that I would see from this kind of program are that there would be some sort of national uniformity of purpose. And you talked a few minutes ago in some of your questions, Mr. Chairman—raised some questions about a somewhat haphazard pattern developing as these different projects are being constructed and designed all over the country.

With this kind of a program, there would be some national uniformity of purpose and also national uniformity of standards in terms of safety and environmental standards.

At the same time, by having private operators in the corridor, you would draw upon all of the private sector benefits that we typically find attractive in the American economy; innovation, efficiency, competition, those sorts of things.

This kind of program is not a small program. I don't mean to suggest that it is not a major effort by the Federal Government. It would be an expensive program, but it is the kind of program that is in the same order of magnitude as the programs that we have had and do have now for the highway and aviation industry. It parallels those programs very much.

And if we are headed for a major effort in infrastructure, in rebuilding and revitalizing our infrastructure, this is the kind of thing that I do think makes sense. It does have elements of user financing that the existing programs have. It also has the kind of private entrepreneurship that you get in the—for example, the airline industry, by having competing air carriers.

And, yet, you also have, by virtue of the Federal involvement, you do have the kind of national planning and attention to national goals, consistent national goals, that is important in any kind of a vast public works program like that.

Thank you, Mr. Chairman.

Senator LAUTENBERG. Thank you very much.

PREPARED STATEMENT

Mr. BROWN. I do have a statement for the record that I'd like to submit.

Senator LAUTENBERG. We'll include that.

[The statement follows:]

STATEMENT OF ROBERT CLARKE BROWN

My name is Robert Clarke Brown. I am a Senior Vice President of Lehman Brothers' transportation group, which is part of the Firm's public finance investment banking department. Lehman Brothers provides investment banking and financial advisory services to public agencies throughout the United States, particularly those engaged in financing transportation and other infrastructure facilities.

In assessing the financial capability of high speed rail, the investment community will look at two questions:

(1) Is revenue from the project sufficient to be leveraged into enough debt to build the project?

(2) Is the credit strong enough that the debt can be sold in the bond market?

As I will discuss below, the answer to the first question is No, available revenues fall far short of required levels. The answer to the second is more complicated, but encouraging: credit structures can be devised for certain elements of a high speed rail project to enable it to be financed.

REVENUE SUFFICIENCY

Let's be blunt. High speed rail in the United States is not a self-financing proposition. Project revenues alone—in every corridor with the possible, but unlikely, exception of Boston-New York-Washington—will not support both capital costs and operating expenses. As the Transportation Research Board concluded in a 1991 study:

It is unlikely that any new [high speed rail] system in a major U.S. corridor would cover its capital and operating costs from farebox revenues.¹

If TRB is right, and I have no doubt that it is, government guarantees and similar off-budget fixes will be of no help, for the problem is not with the credit. The problem is insufficient revenue.

But TRB's candid assessment does not mean high speed rail has no future in the United States. It simply means that governmental assistance is necessary. To date, infatuation with theories like privatization, joint development, and the like has tended to obscure that need.

Prior to going to Wall Street, I served in the mid-1980's as Assistant Director of the Ohio Department of Transportation. One of my responsibilities was to administer the state's efforts with regard to high speed rail transportation. It quickly became clear to me that high speed rail, for all its varied attractions—efficient, environmental, even romantic, was far too expensive to stand on its own. Ohio's project could never go forward without substantial state financial support. But there was neither the political consensus nor the political leadership necessary to fashion that support in Ohio.

Nor has there been anywhere else in the United States. To this day, our country has no high speed rail project. And there will be none, I believe, until there is an acknowledgment of the need for government support. The issue for the Congress is how to design that support so that it imposes the smallest cost on the federal government while drawing maximum support from other sources.

THE ROLE OF GOVERNMENT IN NATIONAL TRANSPORTATION PROGRAMS

Building any transportation system is a costly undertaking, and many of the system's benefits are too diffuse to be captured and applied to project cost—that is why government gets involved. Building a high speed rail system is no exception. It is no more realistic to expect the private sector to step forward and alone finance an American high speed rail network than it would have been to expect it to finance the Interstate highway system.

The nation's transportation systems are its economic lifeblood. They are enormously expensive to build, and once built, they affect the way Americans live and work for generations. For those reasons, they have been constructed through collaborative efforts of the federal, state and local governments and the private sector. These collaborative efforts ensure that the programs are based on both sound economics and wise policies.

The federal highway system (of which the Interstate system is a part), for example, has been designed and built by a federal-state partnership. The private sector's contribution has been in the funding—principally fuel excise taxes. Airports are also built by intergovernmental partnerships, usually between the federal government and a local agency. User fees imposed on both passengers and airlines contribute a major share of airport costs. The federal government contributes the "right-of-way"—the air traffic control system.

The collaborative efforts which have produced the highway and air travel systems work well for many reasons:

- Participation of all interested parties forces an economic realism on project scope and cost.
- Federal involvement produces adherence to environmental and safety standards.
- Local government participation introduces land-use planning considerations.

But it is the role of the federal government that is most important in shaping these programs. Drawing upon a national political consensus, federal leadership creates the uniformity of vision and purpose that is critical for an investment of such vast proportion and so pervasive and permanent an effect.

AN AMERICAN SYSTEM BASED ON PUBLIC HIGH-SPEED RAIL CORRIDORS

The federal government can draw upon its successful experience with its highway and air programs to devise a collaborative plan that will bring high speed rail service to the United States. The heart of the plan should be a system of "public high speed rail corridors." The corridors would be built, owned, and maintained by the government. Transportation service in the corridors would be provided by private parties.

¹Transportation Research Board, *In Pursuit of Speed—New Options for Intercity Passenger Transport*, p. 8.

The corridors would be built by a federal-state partnership similar to that which built the Interstate highway system. Federal design standards would ensure safety and technical compatibility with a variety of types of rolling stock; states would operate and maintain the system. The federal government and the states would jointly determine corridor locations, with substantial input from those likely to use it.

Initial construction in the corridors would, in all likelihood, be for conventional steel-wheel high speed technology. But the corridors should be of adequate size and alignment to later accommodate mag-lev technology. Large sections would be double- and triple-tracked to allow for multiple users and equipment of differing performance capabilities (e.g., different operating speeds).

Usage of the corridors could be leased by any private party, which in most cases would be a common carrier. Such leases would not be financing leases, since use of the corridors would not generate sufficient revenues to amortize the capital cost of the corridor. Revenues would be at least sufficient, however, to cover both the maintenance and energy costs of the governmental owner. They should also be large enough to pay debt service on the tax-exempt bonds the states would issue to fund their share of the capital cost.

The private users would supply the rolling stock, just as the airlines supply aircraft. Because of its mobility and relative standardization, rolling stock would be financable, either by the operator or by a leasing company, as are aircraft. Under present law, high speed rail rolling stock cannot be financed with tax-exempt bonds, although other tax benefits, such as the investment tax credit and depreciation, would be available to a private party.

Individual private users might build privately owned spur lines connecting to the public corridor system, just as there are some private interchanges on Interstate highways.

Stations could be funded, as are airport terminals, through financing leases with the private users of the corridors. Local governments seeking to attract better rail service might contribute to the construction of such stations, either directly or by lending their credit. Stations can probably be financed with tax-exempt bonds under current law.

Who might the private users of the new high speed rail corridors be? Some would be new entrants to the transportation industry, to be sure. But airlines might also find it a profitable business, both because it's a business they already know—transportation—and because it would be a way to collect customers for their air service and funnel them to airports—a multi-modal elaboration of the current hub system the large carriers all now use. And of course the railroads, which do not want the complication of high speed passenger trains on their own right-of-way, might find new markets to develop as operators of a high speed rail service.

But the market for the corridors may well be larger than just passenger carriers. Experience teaches that new technology and new services find many new homes in the market place. Overnight delivery of small packages has become a staple of modern commerce. Providers of that service might find it more economical to replace some of the aircraft in their fleets with trainsets. The federal government might also find ways to support corridor users, as it supported the embryonic airline industry at a critical time with mail contracts.

SOURCE OF GOVERNMENT FUNDING

Some may object to the idea of government provision of high speed rail right-of-way, particularly if paid for from general funds. Other modes, they might say, are funded by user fees. Unquestionably, user financing is an important and valid concept in transportation funding. But examples of pure user funding are few and far between.

Even though we think of both highways and airports as being "user" funded, neither is totally so. While users typically pay most of an airport's cost, the airways provided by the federal air traffic control system—the "right-of-way"—are paid for in part with general revenues. The federal excise tax on motor fuel is levied on every gallon sold, not just those consumed on roads making up the federal highway system. Moreover, within each program there are complex cross-subsidies. Most studies show, for example, that large trucks pay less than the full cost of their use of public roads and thus are the beneficiaries of a cross-subsidy from automobile owners. Commercial airlines and general aviation users each believe costs and benefits are unfairly apportioned between them.

In effect, the federal role in the case of both highways and air travel has been to focus greater resources on the program than the program itself generates. A similar focusing of resources on high speed rail, particularly during its start-up phase, seems equally appropriate.

CREDIT ISSUES

Financings tied directly to project revenues, particularly the first few, will be difficult credits in the market. This is so for two reasons. First, any start-up project is a test of faith for investors. The large bond issues for the toll roads built in the 1950's, for example, were all sold without credit ratings because the rating agencies would not rate start-ups. Even today, financings for start-up toll roads have a much more difficult time of it in the market than do those for expansions of existing toll roads. That is particularly so when the toll road is in a new market or represents a new type of financing. Just yesterday, bonds were sold for a large start-up toll road in California; it was rated by only one of the three major rating agencies.

Second, the inherent difficulty of start-up financings is compounded by the fact that there is no significant American experience with commercial high speed rail service. Consequently, ridership forecasts will be viewed even more skeptically than are toll road traffic forecasts.

These kinds of credit concerns can be overcome, however, in the context of a public high speed rail corridor program. By limiting the project elements which are financed and structuring the credit to take advantage of outside credit support, it will be possible to finance certain elements of the program. The rolling stock can be secured by a pledge of the assets themselves, so those financings need not rely exclusively on project revenues. States may choose to finance their match of federal assistance by pledging lease revenues from the lessees of the corridor but then butressing that pledge with a pledge of the state's credit.

TECHNICAL FIXES

Certainly the standard technical fixes the financial community has called for are in order. Liberalization of tax-exempt bonding authority, such as the Clinton Administration's proposed removal of the requirement that 25 percent of any bond issue for high speed rail must be under the private activity bond cap allocation, would help. So would creation of a new category of "public activity" tax-exempt bonds not subject to the alternative minimum tax. So would liberalization of the tax treatment of non-governmental owners of high speed rail facilities financed with tax-exempt bonds and expansion of tax-exempt bonding authority to include rolling stock.

But these improvements are only marginal. Both the Interstate highway system and the air travel system have had profound effects on the American economy and Americans' way of life, and so will a high speed rail network. Major change does not come about through tinkering with the old way. It requires a clearly articulated government policy and a concerted effort to implement it. Until that happens, there will be no high speed rail in America.

FLORIDA HIGH SPEED RAIL PROGRAM

Florida was one of the first states to recognize that its future transportation needs could not be met solely through the extensive and very fine highway network and airport systems we enjoy in this state. In 1982 Governor Bob Graham, by executive order, created a blue ribbon committee to begin planning for a statewide high speed rail system. The committee initiated and completed a comprehensive feasibility study in 1983 which concluded that a high speed rail system could be built in Florida and, with innovative financing and incentives, could be accomplished largely through private sector initiative.

In 1984, the Florida Legislature enacted the Florida High Speed Rail Commission Act which formalized this public-private partnership and created a seven-member Commission within the Florida Department of Transportation (FDOT) to oversee the development and implementation of high speed surface lines.

With the enactment of the High Speed Rail Act in 1984, Florida embarked on an innovative and far-reaching program to meet its future needs for an efficient transportation system by planning for a statewide high speed rail line. Several foreign and domestic technology companies with both operating and prototype systems expressed interest in competing for a franchise to finance, build and operate the Florida system. The technologies included advanced electrified wheel-on-rail systems, magnetically levitated and propelled vehicles and linear induction motor technologies using advanced propulsion systems.

The Act authorized the state to plan and establish a high speed ground transportation system for Florida based on the concept of a public-private partnership. This privatization approach to providing for major transportation facilities and services was unique and exclusive to the High Speed Rail Act of 1984 and the subsequent Magnetic Levitation Demonstration Project Act which was enacted in 1988. Planning for both of these projects has been underway in Florida to provide a statewide high speed rail system initially connecting major urban areas with trains capable of operating in excess of 120 mph. The Maglev demonstration project is proposed to connect the Orlando International Airport with the tourist attractions located along International Drive in the vicinity of Walt Disney World.

Recognizing the difficulty in getting private sector financing for such huge projects, the High Speed Rail Act provided several important incentives for private enterprise to consider in planning projects of this magnitude. The primary incentive was the opportunity to use real estate development as a means of financing the capital cost of the system. The Act authorized the use of joint development, benefit assessment districts, tax increment financing and the award of development rights as part of the franchise agreement. All of these methods were available to the applicants in developing their proposals. The Act also made available the state's power of eminent domain to acquire corridor property through condemnation if that were necessary.

The Act envisioned the use of already existing highway and rail corridors to minimize environmental impact and the cost of land acquisition to the applicant. Finally, the State was authorized to issue tax-exempt bonds on behalf of the applicant. Any bonds issued under this provision would have to be secured solely from the assets or revenues of the private sector franchisee. No public funds derived from the taxing authority of the state or local jurisdiction was to be used to secure any bonds issued for this purpose.

As the application process progressed, two companies submitted their plans in 1988 for review. The Florida High Speed Rail Corporation submitted a plan using Swedish high speed rail technology with financing based totally on real estate development revenues. The TGV Company of Florida based its plans on the French developed TGV high speed train systems but indicated that it would require public funding to initiate its program. The proposed route connected Miami, Orlando, and the Tampa Bay area.

Over the next three years an intensive review process was conducted involving numerous public meetings. In 1989, the TGV proposal was withdrawn by the applicant, leaving the Florida High Speed Rail Corporation's plan as the only proposal for continued consideration. However, in July 1991, this proposal was also withdrawn due to the inability of the private consortium to finance their plan.

On June 6, 1991, the Florida Legislature abolished the Florida High Speed Rail Transportation Commission and integrated responsibilities for all high speed rail and maglev programs within the Florida Department of Transportation. This move consolidated high speed rail planning with the statewide rail improvement program that includes high speed rail, commuter rail and intercity (Amtrak) services. In July 1991, the Governor and the Secretary of Transportation announced that the high speed rail franchise process would be reopened pending revisions to the HSR Act that would streamline the franchise and certification procedures. The revised High Speed Transportation Act of 1992 was enacted by the Florida Legislature on March 8, 1992.

In accordance with the High Speed Transportation Act of 1992, the Department will proceed to develop intercity rail facilities and services based on the following objectives:

- Establish a statewide high speed rail system but permit implementation on a segmental basis, first building those segments that generate the maximum riders and benefits.
- Where appropriate, upgrade existing tracks and service to allow Amtrak and commuter rail to operate interim service pending funding and construction to high speed rail standards.
- Use existing public funding, if available, for the initial infrastructure and upgrades.
- Conduct necessary ridership, market and environmental studies to support project right of way, route alignment and engineering.
- Continue efforts to secure federal funding and favorable legislation to support Florida efforts.
- Preserve the private sector role and real estate value capture as the basis for the future plan.
- Finally, establish a long term dedicated source of revenue for the total rail improvement program.

Based on the High Speed Transportation Act of 1992, the Department will continue to work with private sector interests in developing the Florida high speed transportation system.

FLORIDA MAGLEV PROJECT

The first operational high speed maglev train project in the United States is being planned for the Orlando area in Central Florida. This project will be a 13.5 mile revenue service demonstration of the Transrapid Maglev Technology developed in Germany. The Florida maglev train will connect the Orlando International Airport with the Disney World tourist area at a station on International Drive.

MAGNETIC LEVITATION DEMONSTRATION PROJECT ACT

In 1988 the Florida Legislature enacted the "Maglev Act" which directed the Florida High Speed Rail Transportation Commission¹ to initiate the planning for a project to demonstrate the new state-of-the-art maglev technology and establish Florida as a center for the development of this new high-tech industry.

In 1988 the Commission issued a Request for Proposals and in early 1989 a Florida corporation, Maglev Transit, Inc. (MTI) submitted a proposal for the Orlando project. Over a two-year period following the application submittal, MTI's plan went through multiple certification hearings conducted by the Commission, local organizations and an independent Hearing Officer. These certification hearings were for the purpose of assuring the project met all statutory requirements for financial feasibility, environmental protection, safety, consistency with local comprehensive plans, compatibility with other transportation services and facilities and numerous other requirements.

¹On June 6, 1991, the Florida High Speed Rail Transportation Commission was abolished by the Florida Legislature and the responsibilities for all high speed rail and maglev projects were transferred to the FDOT.

On June 12, 1991, the Governor and Cabinet Issued a final certification order which authorized MTI to complete final plans and implement the project subject to certain conditions of certification. MTI expects to begin construction in 1993 and begin operation by 1996. The Florida Department of Transportation will have oversight responsibility to assure that the project is built and operated pursuant to the certification order.

SUMMARY OF THE PLAN

The Maglev Line

- Length is 13.5 miles.
- Single track guideway will be on an elevated structure, minimizing environmental impact on wetlands.
- Maintenance facility will be located at the International Drive end.

Technology

- Electromagnetic systems (EMS) Transrapid technology developed and tested in Germany. Operational on test track since 1983, with speed capability of 350 mph.
- Propulsion is provided by a linear synchronous motor (LSM) constructed as an integral part of the guideway.

Financing

- Total project cost of \$622 million. Major private financing will be provided by Japanese investors. \$97.5 million in federal funds were authorized in the Intermodal Surface Transportation Efficiency Act of 1991 for the project.

Item	Cost
Land	30
Guideway	115
Equipment/Stationary Facilities	99
Stations/O&M Facilities	99
Freight/Insurance & Guaranty	14
Engineering & Construction Management	32
Vehicles	108
Pre-Operation Cost	45
Others	45
Contingency	35
TOTAL	622

- Equity financing will be provided through an international partnership of Transrapid International, Inc., C. Itoh Company, Dai-ichi Kangyo Bank and others.
- Project developers also plan a major hotel complex at the International Drive station.

Operations

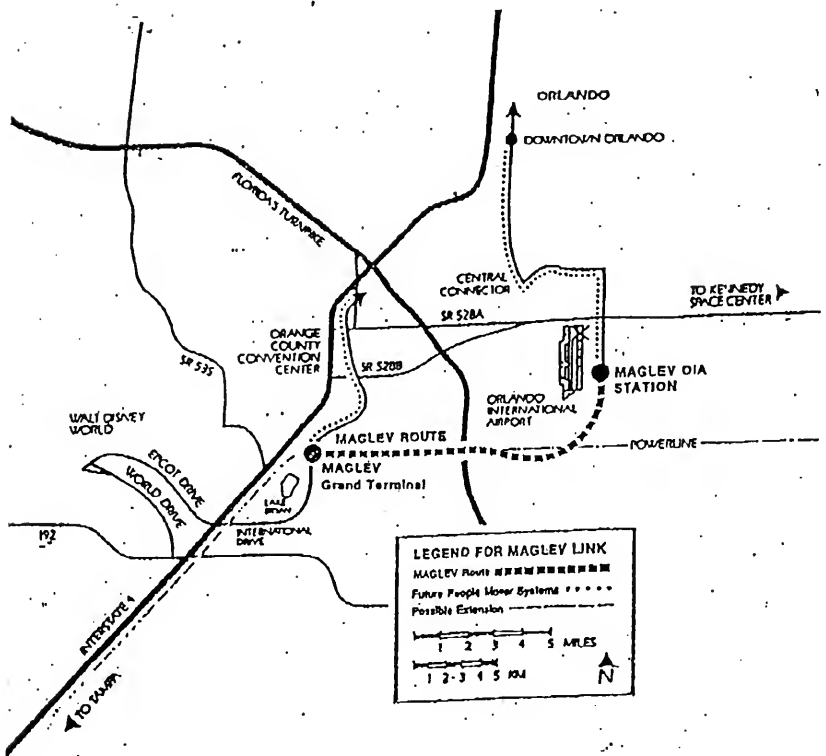
- Projected to begin in 1996.
- 24 hour operations; 4 train sets of 5 cars. Each train has seating capacity of 400; daily carrying capacity of 51,200. 128 daily one-way trips planned with a total annual ridership of 8.4 million in the first full year of operation.
- Trains operate on 15 min. headways in peak periods. 6 min. trip time between stations; max speed of 250 mph

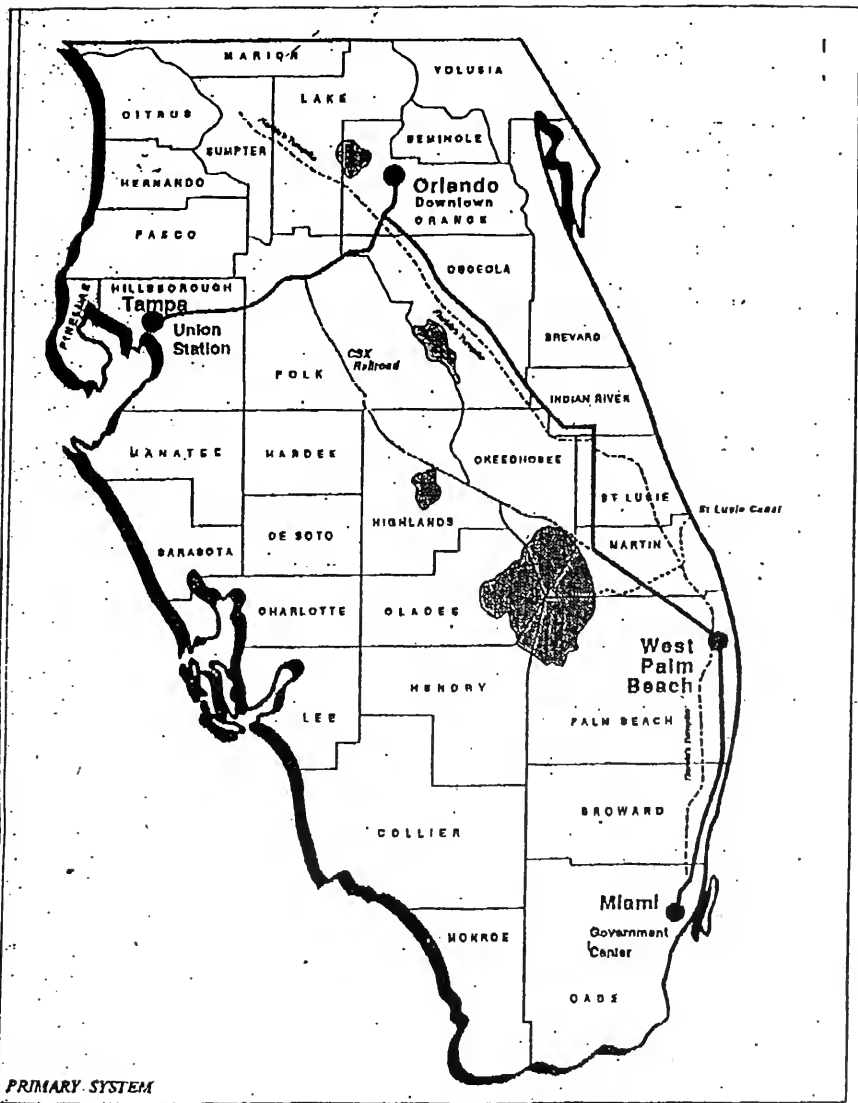
Implementation Schedule

- The Department will provide public agency oversight for compliance with all certification conditions.

- The Federal Railroad Administration will have jurisdiction for safety compliance in accordance with the 1988 Railroad Safety Act.
- Construction must begin within 3 years of certification (June 1994).
- Construction will take approximately 2.5 years.
- Vehicle operational testing can be completed in 4 months after construction is complete.
- Revenue operation will begin no later than 3 years after construction begins.

PROPOSED ORLANDO AREA MAGLEV ROUTE





STATEMENT OF KATHY EVERS

Senator LAUTENBERG. Ms. Evers.

Ms. EVERS. Good afternoon. Thank you very much for inviting us today.

I'm Kathy Evers from Moody's Investors Service. At Moody's, of course, we are well acquainted with the issues surrounding large transportation projects, as we currently rate bonds that have funded construction of new airports, toll roads and, of course, mass transit systems.

The security for these bonds—and I'm going to speak in comments directly to the issue of credit quality—the security for these bonds, of course, varies by project. Airports and toll roads, by and large, in this country, have an established track record of generating revenues sufficient to pay both the operating and debt service expenses associated with them. Their bonds are generally secured by the net revenues of their operations.

Mass transit, of course, is different. And given the history in this country of the subsidies required for transit systems, their operators have successfully explored alternate security for their bond issuances. For example, in some cases, bonds are secured by a general obligation pledge of the State within which the transit system operates. A notable example would be the MBTA, providing service in the Boston area.

Other transit agencies have developed financing structures that allow leveraging of Federal transit funds, while, at the same time, building in protection for bondholders. Certainly, we expect more interest in this area with the ISTEPA legislation. And we are working very closely with issuers in helping them to leverage those funds and develop those structures.

In looking at high-speed rail, there are three general concerns from our prospective. And, in fact, we did have an opportunity earlier this year to talk with a representative from GAO and give our input, which my impression is the investment community was fairly uniform in the feedback to GAO.

Clearly, we're concerned about the magnitude of investment and the level of fixed costs, which will be very high. We also see that the use of new technology is likely, not necessarily, but is likely, to present additional risk for bondholders.

And, finally, project feasibility, which Mr. Brown was just referencing. The ability of the project to generate revenue sufficient to pay both debt service and operating costs is critical, but it would be very difficult to establish. And, again, looking at airports and toll roads, we do have a track record in place of being able to establish the ability of net revenues to cover those expenses. And it's not there for high-speed rail in this country.

Several speakers—in fact, I've modified my comments today to follow up on some points that were made earlier. Several speakers have mentioned the potential use of revolving funds and loan guarantees. And I'd like to specifically address the issue of revolving funds as a way to possibly offset some of the risks for bondholders and reach an investment grade rating.

Our experience with State revolving funds, at Moody's and around the country, obviously, for the issuers involved, shows that

such programs can be very successful in leveraging State and Federal funding, as I'm sure you know, Mr. Chairman.

These programs, by and large, have been set up for clean water purposes. We have to keep in mind, though, I think that it's very important that water and sewage services are an essential part of our everyday lives, unlike high-speed rail, which clearly would have competing modes of transportation.

And also we need to point out, too, from the credit prospective, that the success of these funds in the marketplace and their widespread acceptance and generally high credit quality, it lies in the structure of their portfolios, which—the risks in these portfolios is mitigated by the number of participants and also the structure of the programs where reserves are built in to offset the risk presented by any particular participant.

Obviously, the likelihood with high-speed rail projects is that there will be very few of them, relatively few of them, that will cost a tremendous amount of money. And the use of the revolving loan concept becomes less useful, because the size of the reserves necessary to offset the risks would, of necessity, have to be quite large.

I want to keep this short today. I'm interested in your questions, but obviously, at Moody's, we are very much interested in keeping in touch with issuers, potential issuers, and working with them on developing alternate structures for the issuance of bonds.

Thank you.

Senator LAUTENBERG. Thank you very much. The first two panelists each had a Lautenberg daughter working for the same companies. They're no longer there, but—one got married and moved south on me. That's why we're so interested in the Florida rail project. [Laughter.]

The other one decided to go to law school at a later stage in life. That has no prejudice nor favorability, I want you to know. We deal totally objectively.

Ms. Stanley, you're next, and thank you.

STATEMENT OF HARRIET STANLEY

Ms. STANLEY. Thank you, Senator. I'm sitting here scrambling to see if I can come up with a Lautenberg connection in either Massachusetts or Texas.

It's an honor to be here today and to offer some observations about the potential role of Federal involvement in high-speed rail.

My observations are made as a result of having spent 10 years in the area of transportation finance, in general, and high-speed rail transportation finance, in particular. And because my firm serves as financial advisor to the Texas High-Speed Rail Authority, I'm involved in some of the operational issues on a daily basis. I do need to say, however, that my comments today represent my own thoughts and not necessarily those of the Texas board or its staff.

I believe that the development of a balanced 21st century transportation system should be a priority for this administration and this Congress. The Nation's transportation policy has been fundamentally reactive for some time. And continuation of that approach will limit our capacity for economic growth in the 21st century, now just 7 years away.

Even the most conservative growth projections point to a doubling of passenger trips in the United States during the next 20 years. And many of those will take place in intercity corridors that are already heavily traveled.

I believe that high-speed rail can play a part in the solution to the congestion and relieving capacity in those corridors. Specifically, carefully considered use of high-speed rail can increase the efficiency of existing transportation systems. It can extend the lifetime of existing transportation infrastructure. And it can stimulate new private investment in a more balanced and more diversified transportation system.

I believe the system of the future involves the X2000, conventional high-speed rail and maglev as well.

As you know, Senator, high-speed rail projects are currently underway in several States. Although each project is unique and they have covered various hurdles, almost without exception, the chief obstacle is the attraction of private investment capital. Left to pure marketplace determinations, one or two State systems may slowly develop.

Assisted by the Federal Government through a very specific and defined set of actions, I believe that the State and regional systems, perhaps two or three, can be up and going in 5 years or under construction in 5 years.

Having said that, let me give you five specific Federal actions that will assist the timely development of high-speed rail. I want to tell you that these are very close to Mr. Salci's. And I assure you that I did not steal his speech.

First, passage of the Graham bill, which allows high-speed rail the same access to tax-exempt funding currently enjoyed by airports.

Second would be funding of section 1036(e) of ISTEA, which has, at this point, I believe, not been fully funded. I think that the funding of that section will help demonstrate to early entry investors that there is project completion funding available.

Third would be implementation of the recommendation that we establish a National Infrastructure Corporation, in that revolving funds—and I'm well advised by Moody's comments—and bond insurance can provide a buffer for institutional investors.

Fourth would be activation of a surface transportation trust fund very much like the one that was created in 1956, that allowed the national highway system to go forward.

And fifth, the creation of an office of high-speed ground transportation, a super-agency, reporting directly to the Secretary of Transportation. Now, being one who believes that Government, at times, should be limited, I think they should have a built-in sunset provision.

And its charge, its mandate, would be to break ground on two or three high-speed rail systems within 5 years. And perhaps a model for an effort like that should be drawn from our national history, such as the space program.

I'd like to finish with that thought. I want to thank you very much, as well. Your clear interest in these issues is most appreciated. And I look forward to working with you and your staff in being part of the solution.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much, Ms. Stanley. We have your prepared statement and it will be made part of the record.

[The statement follows:]

STATEMENT OF HARRIETT L. STANLEY

Mr. Chairman and Members of the Committee: It is an honor to appear before you today to offer observations about the potential role of federal support in the development of high speed rail.

These observations are the result of more than ten years of active involvement with transportation finance in general and high speed rail in particular. Because my firm serves as financial advisor to the Texas High-Speed Rail Authority, I am involved with these issues on a daily basis.

I believe that the development of a balanced 21st century transportation system should be a priority for this Administration and this Congress. The nation's transportation policy has been fundamentally reactive for some time and continuation of that approach will limit our capacity for economic growth in the next century—now just seven years away. Even the most conservative growth projections point to a doubling of passenger trips within the United States during the next twenty years and much of this growth will occur in inter-city corridors that are already heavily traveled. High speed rail can be an important part of the solution to reducing congestion and relieving capacity problems in a number of these corridors. Carefully considered use of the high speed rail mode can:

- Increase the efficiency of existing transportation systems by moving travelers directly between city pairs and, perhaps, to major hub airports.
- Extend the lifetime of existing transportation infrastructure by reducing normal system wear and tear, thus extending the times between construction of new capacity.
- Stimulate new, largely private investment in a more diversified national transportation system.

As you know, high speed rail projects are currently under development in several states. Although each project is unique, almost without exception the chief obstacle is the attraction of private investment capital. Left to pure marketplace determinations, one or two of the state systems may slowly develop. Assisted by the federal government through a defined set of actions, several key state and regional systems can probably be under construction in five years.

Summarized below are a specific set of federal actions that will assist the timely development of high speed rail:

Funding of the Loan Guarantee Program of the Intermodal Surface Transportation Act of 1991 (ISTEA).—Section 1036(e) of ISTEA amended earlier legislation to permit federal loan guarantees for high speed rail facilities. However, it has not been funded. Implementation of Section 1036(e) will help demonstrate the availability of project completion funding to early-entry risk investors.

Implementation of the National Infrastructure Corporation.—This recently proposed body can implement specific programs—such as revolving funds and bond insurance—that will provide a buffer for institutional investors.

Activation of a Surface Transportation Trust Fund.—This would be modeled after the Highway Trust Fund created in 1956, which allowed development of a national highway system.

Creation of an Office of High Speed Ground Transportation reporting directly to the Secretary of Transportation.—This would be a super-agency, with a built-in sunset provision, that would be charged with breaking ground on three or more appropriately sited high speed rail systems within five years. Perhaps the model for an effort like this could be drawn from our national history, with the space program as an example.

I'd like to finish with that last thought. Your clear interest in these issues is very much appreciated and I look forward to working with you and being part of the solution.

STATEMENT OF MARC FASTEAU

Senator LAUTENBERG. Mr. Fasteau.

Mr. FASTEAU. Thank you, Mr. Chairman. I just want to say, by way of background that I served on the TRB high-speed rail, Department of Transportation Research Committee. And our firm, Dillon Read, currently serves as one of the financial advisors to the Texas TGV project.

What I'd like to address briefly in my comments is the particular importance of direct Federal support during the development stages of high-speed rail projects. The development of a financeable high-speed rail project requires a number of critical studies, as you know; ridership and revenue, land use, noise and vibration, air and water quality, and in some cases, intermodal facility analysis, the airport/high-speed rail connection, as well as design and engineering.

These studies are expensive, running individually, often well over \$1 million, and collectively for each project into the tens of millions. And they also must be carried out in a preliminary stage when the future of the project itself is highly uncertain. In the parlance of the capital markets, this is venture capital money.

On the other hand, the returns on this investment, if the project is successful, are pretty far off into the future, often farther away than the usual venture capital time horizon.

So the results of this are several things. First of all, the development of high-speed rail projects is often delayed directly at this point, because the private capital markets are not geared to provide this stage of funding particularly well.

Second, because of insufficient funding at this particular stage, required studies are often performed the first one or two times through with insufficient rigor, requiring that they be redone again at a later stage, before an investment grade proposal is really assembled.

This creates additional delays. It wastes a lot of money. And perhaps most important, it makes the process that a local or State or even the Federal Government goes through to decide which project to support or whether a particular project should have larger scale public funding, much more difficult and more politically contentious and controversial.

Finally, when private capital is raised for these preliminary studies, it is very expensive. Investors will demand extremely high returns on funds invested at this stage. Although the investments at this stage largely take the form of equity.

The equity reserve for these investors reduces the equity available for later stage investors. And generally speaking, this will reduce the degree of risk that these later stage investors are willing to take and increase the required rate of return on fixed rate investments and the minimum projected return on the equity that they do get.

So Federal funding of these development stage studies, again through full funding of section 1036(c) of the ISTEA, is an effective and efficient way of dealing with these problems and promoting the development of sound and well analyzed high-speed rail projects.

To summarize, it will reduce the time required for this particular lengthy stage of project development. It will ensure that these studies are carried out with sufficient rigor to serve as the basis

for private investors, local and State governments, and the Federal Government to make sound decisions about future involvement.

And it will also ensure that the Federal dollars spent at these stages are—this stage is highly leveraged. For those projects that do go forward, again, \$1 put in here will reduce—do more than reduce the ultimate ticket price and thus improve the viability of a project, than \$1 put in at any other single stage.

And, finally, Federal funding of these studies would parallel Federal funding of these—of similar studies for highways and airports. And leveling the financial playing field in this way will both facilitate intermodal planning and also, again, make the governmental evaluation process more accurate.

Senator LAUTENBERG. Thank you very much. Mr. Green.

STATEMENT OF MICAH GREEN

Mr. GREEN. Thank you very much, Mr. Chairman. It's a pleasure to be before you today. And I commend you for your leadership over the years on this issue. You and other members of the subcommittee, I know, have sponsored legislation, cosponsored legislation, in the area of developing high-speed rail.

And Senator Moynihan, in his service on environment and public works, and now as chairman of the Finance Committee, has been a leader. And Senator Graham, from Florida, has also been a leader. And it's encouraging to see this kind of creative thinking and leadership on the part of the U.S. Senate in this area.

And I think, as a back drop, I would say that the Public Securities Association, who I work for and am executive vice president of, does not promote one mode of transportation over another. Our members trade, underwrite, sell and deal in municipal securities, mortgage securities, Government securities, the securities issued by Federal agencies to the guaranteed securities. And what we strive to do is to ensure that whatever mode of transportation is decided to be prioritized by our Nation's leaders and the transportation experts, that there is a source of affordable capital to achieve those goals.

And if I may comment on the tax-exempt bond market and the roles that the tax-exempt bond market has played in transportation finance over the years. The tax exemption has provided, truly, the lowest cost of financing for helping to meet the Nation's infrastructure needs. And I say the lowest cost, if one looks at the macro view of what the sources of funding are, there is no straight cash. Everything is leveraged in some way, shape, or form.

As you mentioned, a Federal guarantee. A Federal guarantee, the kinds of securities that would be issued to fund the Federal guarantee would inherently be taxable securities. So that, in and of itself, would be a more costly route to take than utilizing the tax-exempt market.

So in analyzing the issues, you have to look at cost. And you also have to look at what is an appropriate use of the tax exemption. And over history, it's been an appropriate use of the tax exemption to help fund highway systems, leveraging Federal funds with State and local funds, and attracting private capital.

It's also been an appropriate use of the tax-exempt market to help fund the construction, modernization, and expansion of airport

facilities. And in airport facilities, it's gone one step further to engaging in broader public-private partnerships, because it's a role that the large carriers play.

And in 1988, Congress did make a decision to expand that definition of an allowable use of tax-exempt bonds to the development of high-speed rail systems; not rail stock, giving the parallel to aircraft, but to the development of high-speed rail systems.

The law was changed under the Tax Act of then—I think it was the Technical and Miscellaneous Tax Act, to allow for the use of tax-exempt bonds. Recognizing that there would be a volume cap problem, they applied only 25 percent of those bonds to the statewide volume cap. Since that time, it's become very clear that even that 25 percent would be inhibitive. And I think as you've heard earlier from the various State agencies that are developing these systems, it has been an inhibition.

So the proposal that was introduced by Senator Graham and actually passed the Senate last year as part of the energy bill, it would remove the bonds issued for high-speed rail from the statewide volume caps and given them like treatment to highway and airport development bonds.

We are very pleased to see that the Clinton economic program included further Federal commitments on the spending side, as well as an acknowledgement that the bond side must play a role to help achieve the goals of financing these projects.

And I guess, Secretary Peña testified before you and the Budget Committee yesterday, and acknowledged that the reason for that bond proposal was an acknowledgment that the Federal funds are not sufficient enough and somehow you've got to leverage them. And the bond market allows a leveraging of Federal resources with State and local resources or credit capacity with attraction of private capital that would otherwise go to other purposes.

So I sit here today to express our support for this proposal that's in the administration's economic plan, because we believe the bond market can answer the call.

And, again, we're not trying to decide between modes of transportation, we're just saying that the bond market can answer that call, step up to the plate and help finance those needed projects. And if you look at the capacity of the bond market right now, last year the tax-exempt bond market had absorbed over \$230 billion of new securities.

This year we anticipate volume to be down, but chances are with the lower interest rates that volume will go back up. If tax rates go up, there will be even greater capacity in the marketplace to meet future needs.

So if there's a concern at all of the ability of the bond market to absorb these securities, the professionals that I talk to in this marketplace feel very confident that it can.

So, with that, I'd be happy to answer any questions that you'd have.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much, Mr. Green. We have your prepared statement and it will be made part of the record.

[The statement follows:]

STATEMENT OF MICAH GREEN

Mr. Chairman and Members of the Subcommittee, good morning. My name is Micah Green. I am the Executive Vice President of the Public Securities Association (PSA). PSA is the international organization of banks and brokerage firms that trade, sell, and underwrite municipal securities, U.S. government and Federal agency securities, mortgage securities, and money market instruments. I am pleased to be here this morning to discuss the role of tax-exempt bonds in financing the nation's high speed rail needs.

Every major industrialized country in the world either operates a system of high-speed passenger rail service or is in the process of developing one, with the exception of the United States. The French TGV, the German ICA, the Italian ETR-500, the Swedish X-2000, and the famed Japanese Bullet Train all carry passengers safely, cleanly and comfortably from city center to city center, some at average speeds of 200 miles per hour. Meanwhile, the fastest American passenger train, the Amtrak Metroliner, carries passengers between New York and Washington at average speeds of just 85 miles per hour, using 1930's technology.

Other forms of our nation's inter-city passenger transportation network are approaching their capacity. Our airports and highways are crowded to the point where delays are everyday occurrences. Gridlock in the system costs our economy billions of dollars every year. The technology exists today to implement in the U.S. the same kind of clean, safe and efficient high-speed rail system that is enjoyed by millions of others around the world.

In order to develop a viable system of high-speed rail transportation in the U.S., cooperation is necessary between the public and private sectors. One of the most effective ways for the Federal government to encourage and assist the development of private high-speed rail is by expanding the tax code provision permitting tax-exempt bond financing for these projects.

Background

The Federal Tax Code generally prohibits tax-exempt financing for projects where greater than 10 percent of the bond proceeds would be used by a private party and 10 percent of the debt service would be secured by a private party. However, in recognition that certain public-private ventures

are deserving of Federal assistance, the Code permits so-called "private-activity" bond financing for a limited number of narrowly defined classes of these projects. Under the Code, the annual volume of private-activity bonds that each state can issue is limited to the greater of \$50 per capita or \$150 million. Each state is permitted to allocate its annual cap in any way it chooses among the various permitted uses.

Current Status

In 1988, Congress added to the list of permitted uses of private-activity bond financing qualified high-speed rail projects. Under that statute, 25 percent of any bond issue for a public-private high-speed rail project must be counted toward a state's private-activity bond volume cap. However, it is now clear that because of the size of high-speed rail projects, applying even 25 percent of a project's bond issue towards a volume cap can use up the state's entire cap for that year.

Several high-speed rail projects will be inhibited in their ability to practically tap the municipal bond market. These projects include, Texas, California/Nevada, Illinois/Minnesota, Florida, the Northeast Corridor, Ohio, Pennsylvania and Washington.

Conclusion

President Clinton's economic plan includes several proposals dealing with high-speed rail development. These proposals are part of the President's package to increase investment in infrastructure capital. Included in this plan are additional funds for Magnetic Levitation and high-speed rail. The President's program also includes a proposal to permit public-private high-speed rail facilities to be financed with tax-exempt bonds outside of the private-activity bond volume caps. This proposal is similar to legislation introduced by Senator Bob Graham, (D-FL), S.438. A precedent for such a policy already exists. Under current law, airports, docks and wharves can be financed with tax-exempt bonds outside of the volume cap. If they could not, these projects would consume large portions of the cap in states where they are built. The Administration's proposal would allow states to issue tax-exempt high-speed rail bonds without threatening other programs which must compete for cap allocation. In addition, the proposal would demonstrate the Federal government's commitment to allowing states and localities flexibility in addressing

their transportation problems by permitting all three major modes of inter-city transportation; air, road and rail, access to the low-cost tax-exempt bond market.

PSA commends the President and the Administration for supporting public-private high-speed rail projects. We also commend Senators Lautenberg, D'Amato, and Mikulski of this Subcommittee and Senator Graham for their leadership in this effort. PSA would be happy to work with the Subcommittee and other Congressional committees in trying to address the nation's transportation needs. Thank you for the opportunity to testify on this critical and timely issue.

NEED TO INTEREST INVESTMENT COMMUNITY IN PROJECTS

Senator LAUTENBERG. Thank you all very much. What you did, and I think was necessary, was to throw a dash of realism on our capacity to finance these programs.

I was particularly struck by the call that Ms. Evers put out when you said that you've got to deal with your sewage, your wastewater treatment facilities in a realistic fashion. They're there and people are going to use them.

And Mr. Fasteau's comment about the long-term prospects for return. We're not going to see anything for a while. These are enormous capital investment projects. And the time allocated for getting a return is out there in the distance.

And each of you made a significant contribution to the fact that, unless the Federal Government's willing to step up and put some of the seed money in place, the rest of it is not going to come very easily.

I guess, Mr. Green, with interest rates down like they are, with taxes likely to increase, that the tax-exempt marketplace is going to be more appealing.

Those issues are not going to be settled in this committee, but as we examine the economic package that the President has presented, there will be further opportunity to examine just what we have to do in terms of public financing to get these programs underway.

I wanted to ask you a question collectively that I put forward to the other two panels, and that is, we have a job among all of us in marketing a concept that gets the financing in place to get these programs underway. There seems to be little doubt that there's enough interest to get to work on them.

We haven't, in fact, as was noted yet had an example of long-term functioning that says these are going to be good investments or attractive programs for garnering capital, like we have with the airports and with other programs.

So should we be focusing on just a few high-visibility projects to say, here, this is going to be the testing ground; this is going to be the place where we'll determine how interested the investment community is, or should we kind of spread it around to get everybody involved? Do you have any notions or any response to that, Mr. Fasteau?

Mr. FASTEAU. Well, two thoughts. From the investment community's point of view, maglev and steel-wheel are at different stages of development. Steel-wheel on rail is in commercial use in several countries of the world. It's proven. Maglev is not yet there. So you add technology risks to any project that you're really trying to put into service in terms of making it financeable.

Beyond that—so I think you need to think about them differently for that purpose. Beyond that, the strategy that seems to me to make the most sense—again, I come back to this design stage kind of—not bottleneck, but this part of the project development, is to fund a wide range of development stage projects, but in the process, with the funding, have a uniform set of standards for the studies, so that they can be compared and evaluated.

And you can end up with a sound selection of a few projects where the big money that is available can then be concentrated. It would provide a broad opportunity and kind of a level playing field to end up with the appropriate project.

Senator LAUTENBERG. That then establishes a sequential program, that's going to take somewhat longer to move these along. And especially, as you know, with the differences in the technology. One is working and the other needs some further development. Now, there could be catchup, but that's some years away.

Is there, in your judgment, a kind of demand for bonds serving these purposes that are different than any other? Are we just talking about a marketplace that says, OK, here's a risk, here's the opportunity, and whether it's high-speed rail or other programs, the evaluation formulas, I assume, are relatively similar, is that correct?

Are we seeing the enthusiastic marketplace available for financing capital projects? I'm not watching the bond markets or the equity markets. There's not much here by way of appeal for equity placement, I don't think, but is there a pretty substantial marketplace out there now for bond issues?

Mr. FASTEAU. It all depends on what the particular project looks like and what its creditworthiness and how our—

Senator LAUTENBERG. Risk assessment.

Mr. FASTEAU. How it's assessed and rated.

Senator LAUTENBERG. So that we're going to be competing with any other source of opportunity. And the purchasers will evaluate it accordingly a la Moody's and a couple of the others.

How would you evaluate the willingness of the private sector to lend money for high-speed rail projects with or without a Federal guarantee? We've established, I think, at least in the relatively brief discussions, that first the Government's got to be there with some seed money to get things going. Then, following onto that, Federal guarantees are needed.

Mr. Green, your point about tax-exempt versus simply Federal guarantees funding were next in order. Is the Federal guarantee, of and by itself, appealing enough, or is that all part of the matrix that you bring the instrument to market with?

Mr. GREEN. I think it would certainly be a major factor in the investor's mind about the Federal guarantee. I think when looking at the policy of a Federal guarantee, if there are inherent risks that the marketplace doesn't feel comfortable accepting, one has to

ask yourself about the advisability of a guarantee in that environment.

If the marketplace is willing to accept the risks and there are streams of identifiable revenues that can be capitalized and the risks are adequately measured, then you step back and look at the cost of financing. And then it's a question of the marketplace at the time. If the guarantee is less expensive than other options—

Senator LAUTENBERG. It's a relatively simple mathematic derivation. I mean, you get there by—again, risks over here, other competing instruments over there. Is there any opportunity for equity? Is there any opportunity for deferred and improved value later on?

All of those things have to be put into the computer and come up with the yes or no and the scale evaluation accordingly.

Mr. FASTEAU. Mr. Chairman, I think it's useful in thinking about this question to think of the financing in different tranches with different degrees of risk, and ask the question: Well, guarantee which portion, which or all of the portions? You've got the venture capital money, really, at the very beginning or even pre- that, the sponsors' money, then some venture capital money.

Then you have equity. And then you're going to have some second stage subordinated financing which may be convertible debt, but it's going to be either quite risky debt or less risky equity. And then you have senior stage financing.

And just to make the point, a guarantee of only the senior stage financing will be helpful in moving the project forward, because it will reduce the cost of that financing, and thus, make the economics work better, but it only helps you get the equity and—which is the most difficult—and then the subordinate stage financing, through the indirect effect of reducing the cost of the project and making the economics look better. It's not the same thing as guaranteeing the subordinate stage financing or putting equity into it so you reduce the amount of equity that you need from the—

Senator LAUTENBERG. Is there a factor for the collateral value of rolling stock or does that depend on the uniformity of systems around the country? I mean, if these are all unique prototypical kinds of things, that rolling stock doesn't have a lot of value, if the system—

Mr. FASTEAU. Turn it into a restaurant if it doesn't work. [Laughter.]

Senator LAUTENBERG. Diners are out of—no. I think they're coming back.

How about the data availability? GAO says it's difficult to conduct ridership studies with a degree of accuracy, because of lack of good data. As private sector investors, you've got to analyze the potential profitability or chance for return on investment of these rail projects.

What kind of comfort level do you have for getting the data available to determine ridership, project ridership? Anybody? Mr. Brown.

Mr. BROWN. Well, certainly, that is one of the major difficulties. There is no American commercial experience with this kind of service. And so the investment community does look rather skeptically at any kinds of ridership forecasts. I would add to that, though, the

observation that there is also a fair amount of skepticism about any kinds of traffic forecasts for transportation systems.

There are, for example, all of the turnpikes that were built in the 1950's, the big roads, like the Ohio and a number of others, were, I believe—and Ms. Evers can confirm this, but I believe that all or most of those were sold as unrated credits, because the rating agencies wouldn't rate them, because no one really knew how they were going to turn out.

And those kinds of problems really still exist today in the highway area. This big California financing that was sold yesterday for the San Wakein project, that was rated only by one of the three rating agencies. And certainly one of the issues there is—there are a number of project risks there, but certainly one of them is uncertainty about traffic.

So this is not something that is unique to high-speed rail, but I think that it is exacerbated by the fact that while we have highway experience in the United States, toll road experience, we don't have high-speed rail passenger experience.

Senator LAUTENBERG. The California project came to market yesterday.

Mr. BROWN. Yes.

Senator LAUTENBERG. What was the rate that they—

Mr. BROWN. About 7.15, I think, was the—on some 40-year bonds. They were around 7.15, I think.

Senator LAUTENBERG. 7.15. Were there any guarantees, State guarantees or otherwise, included in that package?

Mr. BROWN. There is a Federal guarantee, actually, for—

Senator LAUTENBERG. For how much?

Mr. BROWN. About \$100 million or something. Do you know, Marc, about that? I'm not exactly sure how that was structured, but there was essential—

Senator LAUTENBERG. Is that a fairly high rate for issuances these days?

Mr. BROWN. In today's market, that is a high market value. Two years ago, that was not—

Senator LAUTENBERG. For a 40-year term.

Mr. BROWN. Yes.

Mr. FASTEAU. That's very unusual today, too.

Mr. BROWN. There are many 40-year bonds sold. There were a lot of zero coupon bonds—there were lots of different bonds in this, but it was—

Senator LAUTENBERG. Zero coupons—

Mr. BROWN. Yes.

Senator LAUTENBERG. For 40 years.

Mr. BROWN. No; I don't believe the zeroes were 40 years, but there were a number of different—

Senator LAUTENBERG. I'd buy those if it could be guaranteed that I'd be here to collect them. [Laughter.]

Mr. BROWN. That's college savings for your great-grandchildren or something.

Mr. FASTEAU. Mr. Chairman, I'd like to comment on the ridership question. I think that what's been said is accurate, in that many ridership studies, as I said earlier, have not been carried out as well as they can be carried out.

And part of the skepticism of, I believe, both the rating agencies and investors comes from a history of studies which haven't been carried out, again, using the best available methods and technology. I think that studies can be carried out—and, again, they're expensive to do—which can give you a reasonably good degree of confidence in the result.

I know for the Texas TGV project, they're being carried out by an American firm, which is, again, at the cutting edge of the statistical methods and survey techniques being used, and the French operation that has done it for the TGV there.

Now, that doesn't mean that if \$10 million of revenue is projected, you can get an investment grade bond issue rated, which is \$10 million of debt service to be covered on a one-time basis, but you might have enough confidence to sell bonds with a two-time projected coverage instead of three or four, which, again, makes an enormous difference in how much money you can raise on a specified projected stream of revenue.

Senator LAUTENBERG. Since we're kind of coin tossing here, if we have Federal loan guarantees and got some tax exemption, what might the cost of capital be for these high-speed rail projects? Does anybody want to—

Mr. FASTEAU. Overall integrated cost of capital? Couldn't begin to guess.

Senator LAUTENBERG. These rates, I guess, will differ from other infrastructure projects based on, I think, the comment you made, and that is, how badly do you need it?

Mr. FASTEAU. Credit rating.

Senator LAUTENBERG. I was interested in Ms. Stanley of the Hadley Group's concept of a national transportation commission. Do you just want to repeat that for a minute?

Ms. STANLEY. What I proposed is to create a super-agency. I'm not entirely sure that the magnitude of the task in front of us, in terms of high-speed rail, can be handled by existing agencies.

If you want to remove institutional obstacles and you want to focus on a goal someplace, I think you need something that reports directly to the Secretary of Transportation and has a very specific mission. And once that mission is accomplished, that the agency is basically disbanded.

To go back to one of your questions, Senator, I think that the answer, from my standpoint, is that you do identify several key high-speed rail corridors and—or potential high-speed rail corridors and invest most of your resources, if not all of your resources, in that fashion.

I would disagree with the gentleman from the GAO who believed that incrementalism might be the best way to go. I think that incrementalism has been more of a problem from the past, and so that you want to concentrate on achieving two or three successes and go from there.

Senator LAUTENBERG. Thank you very much.

Mr. BROWN. Mr. Chairman, could I also respond—

Senator LAUTENBERG. Sure.

Mr. BROWN [continuing]. To the point that Harriet addressed, which I know you've been asking all of the panelists, and that is

this question of how you spread the money around and do you try to bullet specific projects.

I think one of the problems with doing that is that, No. 1, it sort of postpones the Federal Government's coming to grips with exactly what kind of program structure are you really going to have to move this forward if you do sort of ad hoc appropriation or earmarking for specific programs.

And it also continues the problem that you alluded to earlier of compatibility of these different systems. You have different systems operating in different parts of the country. At some point, maybe there is—you do end up with more of a national network and there may be some point in having those linked.

And you do want to make sure that they're compatible. And it seems to me that the really threshold interests that are at issue for the Congress is to decide what kind of Federal program there will be and design a program.

And then whether that program is started slowly by addressing a handful of projects or bringing a larger number of projects up at a slower rate around the country, I think, is sort of a secondary issue.

Senator LAUTENBERG. That's a very valuable comment. I want to thank all of you. I know that you had to travel here. I know that none of you were able to come by high-speed rail. I hope that you'll be here before we wait for that to be in place.

It was very interesting. It added a touch of significant realism that has to be considered in this. And part of it includes how do we plan to bring this to the public and the question of compatibility. I mean, if there's any collateral value to the equipment, et cetera, and each one is a unique system, that doesn't do us any good.

It doesn't help finance these programs. And the desire seems to be there. There's a lot of interest. And I calculate that somewhat informally by comments that I get from all around the country, but I believe it's going to happen.

SUBMITTED QUESTIONS

And I thank you all very, very much. We will submit some other questions to be answered for the record.

[The following questions were not asked at the hearing, but were submitted for response subsequent to the hearing:]

NATIONAL RAILROAD PASSENGER CORPORATION
(AMTRAK)

QUESTIONS SUBMITTED BY SENATOR SASSER

MEMPHIS CENTRAL STATION INTERMODAL FACILITY

SENATOR SASSER: In 1991, the Memphis Area Transit Authority (MATA) completed a Planning and Feasibility Study for renovation of Central Station as an intermodal terminal. Amtrak reviewed the document and provided comments on September 26, 1991. Does Amtrak still plan to be involved in the project if the concerns described in the September 26 letter are resolved?

ANSWER: Amtrak remains supportive of the project to renovate Central Station in Memphis as an intermodal facility. We are committed to providing quality rail service to Memphis, and renovating Central Station appears to be the only viable station alternative available. Amtrak is hopeful that the station renovation is part of a larger redevelopment plan for this area of the city. We feel that this is essential in order to address safety concerns we have for our passengers and employees. Our September 26, 1991 letter to the Memphis Area Transit Authority raised some broad issues regarding some of our operating requirements. These and other details can be worked out as the project moves forward.

SENATOR SASSER: The City of Memphis is making a significant investment in the Central Station renovation. Currently, Amtrak provides only two trips per day to/from Memphis. What plans does Amtrak have to (a) increase service on the current route; (b) add service to connect Memphis to other cities; and (c) upgrade its equipment once the project is completed?

ANSWER: (a) In July 1992, Amtrak evaluated extending the Chicago-Carbondale Illini to Memphis. As this service was projected to increase our federal subsidy requirements by \$2 million, which exceeds our self-imposed limit of \$1 million for new services, this service is not being pursued. (b) Amtrak has no current plans to add service connecting Memphis to other cities. (c) Beginning in late 1994, Amtrak will begin replacing the current Heritage Fleet cars on the Chicago-Memphis-New Orleans City of New Orleans with new Bi-Level Superliner equipment. The entire train will be upgraded to Superliner equipment by the end of 1995.

SENATOR SASSER: What plans does Amtrak have to pay for its share of the Central Station renovation?

ANSWER: As you know, Amtrak has a limited capital budget and we have, therefore, had to rely on communities

to provide for station improvements. Once the new facility is built, we fully expect to pay our share of operating costs.

SENATOR SASSER: MATA will begin rail trolley service in downtown Memphis in April. Future plans call for expansion of service to tracks along the riverfront currently utilized by Amtrak (i.e., the Riverfront Loop). Does Amtrak foresee any problems co-existing with trolleys and jointly using the tracks if the system were to be extended to these tracks?

ANSWER: While we have not seen specific plans for instituting trolley service along the riverfront, we understand that only one of the two tracks will be used by trolleys. This would leave the other track for Amtrak use. However, because of the proximity of the two tracks, it will be necessary to ensure a safe interface between the two services with respect both to patrons and to rail operations, particularly since we understand the trolley could cross the tracks used by Amtrak.

QUESTIONS SUBMITTED BY SENATOR D'AMATO

DEVELOPMENT OF A HIGH-SPEED, NON-ELECTRIC LOCOMOTIVE

SENATOR D'AMATO: How fast will you have the "systems approach" specifications on the street for the electric locomotive, dual-mode locomotive, and passenger vehicles?

ANSWER: Public notice to solicit interest from prime contractors will be published prior to April 15. The responding firms that have adequate technical staff, facilities, qualified sub-contractors, and domestic assembly facilities will be invited to participate in the technical development program between May, 1993 and October, 1993. Formal requests for pricing will be made once the magnitude of the available funds is known in FY94. This process will require the delivering of a fully integrated trainset of locomotive(s) and passenger carrying vehicles to meet the stated trip times in the New York-Boston corridor and similarly improve the comfort and performance in the New York-Washington corridor.

SENATOR D'AMATO: In FY 91, Congress provided \$14 million for a dual-mode lightweight locomotive for use in designated high-speed corridors. Are you now going to sit on this project further while we await funding for the 26 Northeast Corridor electric trainsets?

ANSWER: Amtrak has been pursuing this project as directed by Congress with the principal suppliers of locomotives in this country. We issued a solicitation to diesel and turbine locomotive builders at the start of the program, and received only three expressions of interest. All three turned out to be unable to meet the congressionally directed speed goals within the operating constraints of America's railway network. We firmly believe that the dual-mode locomotive can be developed quickly if it is a part of the trainset procurement, because many of the systems and sub-systems of the Northeast Corridor trainsets are also required for the dual-mode locomotive. The benefit of combining the two programs is that the NEC trainsets will be able

to serve the non-electrified feeder lines of NEC with through service, one of the original intents of the FY91 legislation. Amtrak has requested adequate funds in FY94 to move this program forward. Our goal is to have some of the trainsets delivered upon completion of the North End electrification in 1997. We expect the non-electric (including dual-mode) versions of motive power for the other national corridors to be developed and delivered in parallel.

SENATOR D'AMATO: Dual power means the ability to operate either on gas turbine or diesel, and on third-rail electric through the New York Tunnels. Developing new dual power technology to a point where trains will have the extra horsepower to operate onto Long Island is very important. This technology is non-existent today. New York State and I fear that from Amtrak's perspective, this is a minor element in the context of the overall trainset procurement.

ANSWER: Amtrak is, and remains committed to, advancing the dual-mode technology as fast as the supply industry can reliably and economically advance this technology. Amtrak presently has on order ten AMD103 dual-mode locomotives from General Electric rated at 3200 horsepower that will go into New York/Empire Service and can serve Long Island directly. These units are scheduled to be delivered in the second half of 1994. Amtrak has actively pursued the dual-mode options for our unique environment and has hosted meetings with the NEC commuter agencies to stimulate interest for additional orders to advance the development of dual-mode locomotives, especially in those instances where air quality in stations covered by air rights development has become an issue. Our thrust continues to be one of promoting more orders, so the front end development costs can be apportioned over a greater number of locomotives and railway customers. This effort also allows us to encourage the supply industry to stretch their capabilities as we extend the specified performance envelope of each procurement. As a part of the AMD125 procurement, Amtrak tried to push the industry to the next logical step which was a 125 mile per hour version of the dual-mode locomotive. We expect that this step can be achieved through the NEC trainset procurement.

SENATOR D'AMATO: Today, I would like a commitment from Amtrak that you will immediately move to layout the specifications and develop the new dual-mode technology. Will you commit to allocating part of the \$14 million for this purpose?

ANSWER: Amtrak is committed to this effort and believes it is achievable at this time, when the project can be done in parallel with the electric trainset procurement. The large amount of commonality in systems and components significantly reduces the risk of this development process. We at Amtrak have watched the Metro North FL-9 program which is now close to completion. The pioneering work by Metro North on this program has helped advance the feasibility and confidence level of the locomotive suppliers for this type of unit, and that is now allowing the Amtrak requests for improved performance to be taken seriously. However, to advance the dual-mode program, we require much of the original \$14 million to be allocated to this program. Amtrak is firmly convinced that this approach -- essentially combining the dual power development program with the NEC trainset development -- will succeed and that we will end up with a family of high-speed rail equipment that can be used effectively nationwide.

SENATOR D'AMATO: I would also like your assurance that, once you have released the overall trainset system specification, you will proceed vigorously with the development of the prototype dual-mode locomotive. I don't believe there is any reason why the dual-mode prototype locomotive should await funding (about \$450 million) for the 26 trainsets for the Northeast Corridor. Do you agree?

ANSWER: To have a successful program that can be rapidly executed with a high level of confidence for success, it is imperative that the two programs be treated as one with parallel development. Amtrak has requested \$68.5 million for FY94 to progress the development of the 26 trainsets with electric and dual power capability. Amtrak anticipates the need to finance a good portion of the total \$450 million equipment acquisition, so additional congressional funding will be required to complete the full procurement. Our goal is to first procure 2 trainsets with electric and dual power capability, de-bug the systems, and then complete the full 26 trainset order. We would anticipate the first two trainsets and the fossil fueled, dual-mode locomotives being available at the same time. We believe this approach will be the fastest overall program to support both the New York-Boston electrification and improvements, as well as the non-electric feeder routes and the FRA designated high-speed corridors. Supporting this expedited development program will be the New York State ISTEAD demonstration with the Makila turbine retrofit and the development and deployment of the Amtrak AMD103 dual-mode. Never at any time in the past have so many separate programs come together on a common time line that could move high-speed and high-quality rail passenger transportation forward economically and expeditiously. It is essential that we do not spend untold sums recreating a variant of locomotive and trainset for each corridor, diluting the available funding in studies, and re-engineering as opposed to spending funds on hardware that can deliver better transportation for all regions of this nation.

In addition, it is important that trainset development in the United States be coordinated to ensure standards that assure commonality of equipment on the various U.S. high-speed corridors to control the after costs of maintenance, inventory and training of the work force.

SENATOR D'AMATO: I am anxious about Amtrak's ability to move ahead with the procurement of dual-powered, high-speed equipment. My concern is simple: without dual-mode equipment, Amtrak will never provide high-speed intercity rail passenger service anyplace other than the electrified Northeast Corridor. Since over 95% of Amtrak's 25,000 route miles are non-electrified, it is vital that Amtrak actively promote extending high-speed service to selected non-electric corridors. Amtrak plans to procure 26 electrified, high-speed trainsets for the Northeast Corridor PLUS non-electric, dual power equipment. I have been informed this procurement could begin late spring, early summer of 1993. However, Mr. Claytor's testimony says that: "...Amtrak is CONSIDERING including in its procurement for the electrically powered high-speed trainsets the FEASIBILITY of substituting acceptable non-electric power units, WITH A DUAL POWER third rail capability." Are you going to procure the dual power equipment or not, and when?

ANSWER: Amtrak has been taking a leading role in the procurement of dual-mode locomotives, and the integration of non-electric dual power locomotives in Amtrak's procurement for 26 high-speed Northeast Corridor trainsets is, we believe, the fastest and most commercially viable way to achieve the goals set forth in the FY91 authorization. Amtrak is committed to making this acquisition on a production order basis and not on a one time prototype that takes a subsequent three to five years to commercialize. The specifications and prequalification of suppliers for the trainset development program, including the non-electric dual power locomotives, are being pursued now. Amtrak has set a project milestone of having competitive technical proposals in hand by the end of 1993, so commercial negotiations can be completed in the first quarter of FY94.

NYS INTERMODAL SURFACE TRANSPORTATION ASSISTANCE ACT
(ISTEA) SECTION 1036, HIGH-SPEED DEMO PROJECT

SENATOR D'AMATO: NYS has proposed a \$5 million demo project (funded by the Federal Railroad Administration). Under this project, the current RTL turbo trains used on the Empire Corridor would be retrofitted from their current turmo 3 or turmo 12 engines to Makila turbo engines, also the trains would be revamped to have a "modern looking" high-speed trainset appearance. Mr. Claytor's testimony says that the retrofitted RTL turbo liners "will be able to use the electrified third rail tunnels for operation through the Penn Station tunnels to Long Island at acceptable speeds." However, I understand that the retro-fitted turbo liners will not have any change to their electric power. How is Amtrak planning to change the existing (poor) third rail capability of these trains?

ANSWER: As part of the retro-fitted turboliner package, we intend to include the requirement for a higher horse power electric motor and solid state control system in place of the existing transit car motor.

SENATOR D'AMATO: I understand that these trains now must be TOWED by 40 year-old FL-9 locomotives to make it up the grade through the East River tunnels to reach the Sunnyside Yards in Long Island. When will the retrofitted trains acquire this improved capability referred to in Amtrak's testimony?

ANSWER: Turboliners presently only go into Sunnyside Yard as an emergency situation, and they are then hauled by electric locomotives.

The retrofit would take over a year to accomplish when taking into account realistic procurement and commissioning times for the prototype set. Upon receipt of our AMD103 dual mode locomotives in the last quarter of 1994, we will then be in a position to provide train service through the East River Tunnel on to Long Island.

THROUGH OPERATION OF EMPIRE CORRIDOR TRAINS TO LONG ISLAND

SENATOR D'AMATO: Are the existing RTL Turboliners able to run through the East River Tunnels today?

ANSWER: They can operate through the tunnels, but the maximum speed is well below the normal operating speed of other trains, hence they significantly reduce the capacity of the tunnels.

SENATOR D'AMATO: These trainsets are 15 years old; is it reasonable to expect electrical equipment to operate reliably past that age?

ANSWER: The life of electrical equipment, especially DC equipment, is determined by many factors including hours of service, exposure to moisture, lubricant contamination, and component wear. The trainsets are over fifteen years old, but many of the electrical components have been replaced over the years as maintenance requirements have dictated. The third rail power system is used for very short periods of time when compared to the total hours of operation.

SENATOR D'AMATO: Do the existing turboliner's electric motors have enough power, when operating properly as designed, to move a train through the East River Tunnels within the maximum time period allowed?

ANSWER: No. The Turboliner design was created for service into Grand Central Terminal at a maximum speed of 30 miles per hour. The route into Grand Central Terminal is practically level.

The East River Tunnels have a 60 mile per hour speed limit and have gradients of .7% to 1.3%.

SENATOR D'AMATO: I understand a test run was performed in the East River Tunnels. What was the result?

ANSWER: The test produced results that were reflective of the limited design capability of the original design. Speeds in the tunnel dropped to 18 miles per hour.

SENATOR D'AMATO: I am pleased that Amtrak is cooperating with New York State's application for ISTE A Section 1036 (c) High-speed Demonstration, which would include retrofitting an RTL trainset with several upgrades of the propulsion system and passenger accommodations. Will this retrofitted trainset be able to operate in regularly scheduled through service from upstate to Long Island?

ANSWER: This trainset would be able to operate through the East River Tunnel to Long Island in revenue service.

SENATOR D'AMATO: Will this trainset have any improvements made in the third rail propulsion system? (Pick-up shoes, controls, drive motor, etc?)

ANSWER: The full scope of the demonstration project is still being researched and defined with TURBOMECA and key component suppliers such as VOITH transmissions. Our goal is to achieve 60 miles per hour in the East River Tunnels by increasing the horsepower of the DC drive motors from 300 Horsepower to as much as 900 Horsepower, subject to the limitations of weight, balance, and strength of the transmission drive train. To handle this added horsepower, a new DC control package will be required

and the contractors are researching what type would best suit the service requirements.

SENATOR D'AMATO: What will be done that would make this retrofitted trainset able to operate reliably through the East River Tunnel?

ANSWER: The third rail shoes have been the subject of on-going research for many years and are still one of the most vulnerable elements of the DC drive system. We are continuing research with several suppliers as is the General Electric Company in regard to their responsibility to deliver a dual mode AMD-103 locomotive in 1994.

SENATOR D'AMATO: Will something be done to make it less failure prone?

ANSWER: The DC Controls will incorporate considerable solid state and chopper technology that is more reliable than open contactor controls currently utilized. The new Makila Turbine is modular in design with a microprocessor control system that will provide advance indication of deteriorating engine performance.

SENATOR D'AMATO: Will it be more powerful in electric mode?

ANSWER: Amtrak and TURBOMECA have embarked upon a program to increase the horsepower of the DC drive as much as physically possible. Each Turbine power unit has a 300 horsepower motor. We anticipate going to as much as 900 horsepower, which will represent 60% of the turbine horsepower.

COSTS OF HIGH-SPEED RAIL DEVELOPMENT

SENATOR D'AMATO: According to the General Accounting Office's written testimony, it could cost from \$500 million to upgrade an existing 200-mile stretch of rail track to high-speed operations (110 miles per hour) to over \$12 billion for a magnetic levitation rail system (over 200 miles per hour).

Given these estimates, doesn't it make sense for Amtrak and the Federal Railroad Administration to focus their efforts on demonstrating high-speed rail on New York State's Empire Corridor, the nation's only existing high-speed corridor (110 mph, ready for 125 mph with some work) outside the Northeast Corridor?

ANSWER: Amtrak agrees that the Empire Corridor, as an existing multi-frequency corridor with high population densities and near-high speed track quality, is an excellent candidate for high-speed technology demonstrations outside of the Northeast Corridor. It should be noted, however that other corridors throughout the United States are also good candidates, although track standards on those corridors may not be as advanced as those achieved by the State of New York through its ambitious upgrade program. The five corridors designated by the Federal Railroad Administration to receive funding for track improvements under the Intermodal Surface Transportation Act of 1991 are good examples of other potential corridors that could benefit from such high-speed technology demonstrations.

Additionally, Section 812 of Public Law 102-533, the Amtrak Authorization and Development Act, which was signed into legislation on October 27, 1992, outlines certain directives relating to experimentation with new high-speed technologies. Section 812(c) mandates that Amtrak "in order to facilitate efforts to increase train speeds throughout the national intercity rail passenger system, shall upon request by eligible applicants, consult and cooperate, to the extent feasible, with such applicants proposing technology demonstrations authorized and funded pursuant to federal law." Thus, the Corporation has a legislative mandate to demonstrate new technology throughout the national system.

SENATOR D'AMATO: New York State has invested about \$150 million of its funds to bring the Empire Corridor up to high-speed standards. Amtrak serves a high population density in this corridor and enjoys an excellent revenue stream from this service. What do you think can be done to further promote the demonstration of high-speed rail operations in this corridor?

ANSWER: Amtrak has identified three mechanisms to address the difficult issue of funding the large capital investments required for right-of-way improvements and state-of-the-art high-speed rolling stock.

The first of these is the establishment of a continuous, dedicated funding source for rail, similar to

the Highway Trust Fund. Last year, Representative Al Swift, Chairman of the House Subcommittee on Transportation and Hazardous Materials, introduced H.R. 4414, which would establish a capital fund financed by one cent of the current two and one-half cent federal fuel tax now allocated to deficit reduction. The measure, which was co-sponsored by some 30 members of the House of Representatives, was widely supported in the environmental and transportation industries, and would for the first time provide a secure capital funding source for Amtrak. This would allow the Corporation to upgrade and expand its current system, and would make possible the establishment of high-speed rail on routes other than the Northeast Corridor. The Empire Corridor would be an excellent candidate for such an upgrade.

Second, Amtrak fully supports recent proposals for an investment tax credit to appropriate capital investments to assist in stimulating the economy, including specifically such a tax credit for investments in rail equipment, both conventional and high speed.

Finally, Amtrak recommends removing statutory limits on states' and localities' tax-exempt expenditures for the rehabilitation of rail passenger facilities and equipment. This proposal would dramatically reduce Amtrak's costs of financing equipment purchases.

PROPOSED MOVE FROM PENN STATION TO POST OFFICE BUILDING

SENATOR D'AMATO: Today, the Long Island Railroad accounts for over 75% of the passenger and train arrivals at Penn Station New York during the AM peak period while it is allocated (by Amtrak) only 45% of the platform space at Penn Station. In fact, some of the track space that LIRR relies on regularly (tracks 13-16) are designated not to LIRR exclusively but for joint Amtrak and LIRR.

Does AMTRAK's James A. Farley Proposal provide any significant direct benefits to Long Island Rail Road?

ANSWER: Amtrak's James A. Farley Proposal includes a major renovation of the existing Penn Station facilities, together with the relocation of Amtrak operations to the James A. Farley Building. The Long Island Rail Road and its passengers will benefit from the reduced congestion and enhanced accessibility that will result, as well as the ability of the renovated Penn Station complex to accommodate projected future passenger utilization. Specific improvements benefitting the long Island Rail Road are:

- o Corrects numerous fire and life and safety deficiencies in the current station, increasing the level of safety in the station for all passengers;
- o Increases total station platform capacity by allowing access to and usage of the mail platform for passenger loading;

- o Improves vertical access on Platforms 7 and 8 by providing two new escalators, a passenger elevator, a passenger/freight elevator and an emergency stairway on each platform, which will significantly reduce platform clearance and dwell times;
- o Improves the environment and passenger orientation at the interchange of the West End Concourse and the Eighth Avenue Subway;
- o Provides additional access and egress for Long Island Rail Road passengers through the James A. Farley building concourse via the West End Concourse;
- o Improves the ability of Long Island Rail Road passengers to transfer to New Jersey Transit and Amtrak trains via the extended West End Concourse;
- o Increases the capacity of the station's mechanical systems, providing the opportunity for supplemental service to the Long Island Rail Road premises;
- o Increases loading dock capacity by relocating Amtrak's loading dock operations into the James A. Farley building.

SENATOR D'AMATO: Won't the Farley proposal result in less access for LIRR given AMTRAK's better access to tracks 13-16?

ANSWER: No. Amtrak has made a commitment to LIRR that their usage of the station at track level will not decrease from current levels. The project provides increased access to all station tracks, including improved access for LIRR. Additionally, the project increases overall station capacity and efficiency by allowing the mail-handling platform, under the James A. Farley building, to be used for passenger train handling as well as mail operations.

SENATOR D'AMATO: Does the Farley proposal create any capital costs for LIRR?

ANSWER: No. The expansion proposed pursuant to the Farley proposal and the renovation of Penn Station does not create any capital costs for LIRR. Although LIRR will derive numerous benefits from the Farley proposal, Amtrak recognizes that the LIRR is already investing significant funds in Penn Station as part of their station renovation program. We understand LIRR's position that additional capital contributions cannot be budgeted for Penn Station.

Although LIRR is not being asked to provide funding, it is likely that the proposed improvements to the

station's mechanical and life safety systems, and the ADA accessibility improvements at the station's entrances will reduce the LIRR's need for future capital improvements to upgrade those systems.

SENATOR D'AMATO: Do MTA and LIRR support the Farley proposal?

ANSWER: MTA and LIRR, along with Amtrak and New Jersey Transit, have participated in the two-year Penn Station Master Plan process. As a result, they have reviewed documents and have commented on the proposal during the process. Amtrak has requested the formal support of MTA/LIRR for the Farley proposal that was recommended as a result of the planning process because the Farley proposal provides significant benefits to the city of New York and its travelling public, as well as Amtrak, the Metropolitan Transportation Authority, the Long Island Railroad, and New Jersey Transit. However, the MTA/LIRR has expressed concern that the Farley proposal may compete with funding for their Grand Central Station Project.

SENATOR D'AMATO: Today LIRR and Amtrak are working on several short term strategies to increase operating flexibility at Penn Station. These strategies include: (a) the construction of a new connection, known as 5x/6x to permit LIRR to access periodically, additional tracks, (b) the extension of platform 11 to allow longer LIRR trains to access an existing LIRR platform, and (c) and operating plan to better manage the train movements of LIRR, Amtrak and NJT in the Terminal.

What is the impact of the Farley proposal on these short-term strategies?

ANSWER: The Farley proposal has positive impacts on the short-term strategies enumerated. It provides increased vertical circulation and decreases loading and unloading time for passengers on trains using tracks 1 through 16, thereby reducing train dwell time and increasing platform capacity.

SENATOR D'AMATO: What is the overall progress on these strategies?

ANSWER: Amtrak believes that overall progress has been positive. The current status of these strategies is as follows:

Amtrak engineering conducted a detailed review of the preliminary design for the 5X/6X connection and found that the proposed geometry was not workable. An alternate conceptual layout was proposed which meets the LIRR's need to directly access tracks 13 and 14, in the station, from the West Side Yard while maintaining Amtrak and New Jersey Transit's need for flexibility in accessing the Hudson River tunnels for trains bound to New Jersey. Preliminary design is in progress on this alternative. Amtrak is committed to finding a workable solution to provide the

LIRR direct access to tracks 13 and 14, in a way that does not compromise future capacity needed for New Jersey Transit and its own operation into New Jersey.

Amtrak supports the proposed Platform 11 extension because it will contribute to the efficient use of the LIRR's portion of the station. The LIRR has retained a design consultant for the extension of Platform 11. Amtrak has participated in design review meetings on this project. Amtrak suggested, and the LIRR has agreed to retain tracks in and access to C Yard for continued use as a maintenance staging area for the entire station. Accordingly, the LIRR and Amtrak are in general agreement on the overall design of the Platform 11 extension.

A draft plan for the current operation of the station has been developed, incorporating the operations of all of the transportation agencies. Work is underway on the plan so that it can be put into effect for the Spring timetable changes. This process of review and discussion among the agencies is now a regular part of the joint planning for operations at Penn Station.

SENATOR D'AMATO: Amtrak is seeking funding support for the Farley Proposal from a number of sources including ISTEAs, State and local funds.

Wouldn't the use of ISTEAs funds for the Farley project inevitably compete with other New York area transportation agencies (including LIRR and MTA) needs for these same funds?

ANSWER: ISTEAs funding is but one potential source of funding for the proposed renovation and expansion of the Penn Station project. Our discussions with state and city officials have explored the use of a number of economic development mechanisms because of the significant benefits, in terms of new jobs and increased state and city taxes that will result from the proposed project. In addition, any infusion of state and city funding can be expected to leverage significant funding contributions from other sources. Because of the flexible uses of ISTEAs funding, it is likely that cooperative efforts of transit agencies in the region would result in a net increase in the portion of ISTEAs funds allocated for mass transit, rather than intensifying competition for existing allocations.

SENATOR D'AMATO: Have LIRR, MTA and other NY area transportation agencies endorsed ISTEAs funding in the Farley Project?

ANSWER: No, because these agencies have not been asked to endorse any specific funding source and LIRR and MTA have been asked to provide their support for the project because of the significant benefits that will be provided for passengers who use the Penn Station facilities.

SENATOR D'AMATO: Should the remaining unfunded safety needs at Penn Station, including the East River tunnels, take precedence over investing in a new facility?

ANSWER: The Farley Proposal should not be characterized strictly as an investment in a new facility. The proposal involves a staged expansion of station facilities designed to accommodate the needs of passengers using Amtrak, LIRR, MTA and NJT services. It also addresses fire, life and safety issues.

The serious fire, life and safety deficiencies need to be addressed as soon as possible, and we are working toward this end. Representatives of the Long Island Rail Road, New Jersey Transit, and Amtrak are working through a formal Joint Task Force to formulate program requirements and develop a funding and implementation strategy for the improvement of the life safety scenario for Penn Station and the connecting tunnels. Many life and safety-related improvements have been or are nearing completion. Other significant projects are progressing through the planning and design phases. A fully developed program plan describing all components of the Life Safety Program is expected to be available at year's end.

Improvement in passenger egress from the platforms is essential to improve safety, as well as passenger convenience. The Farley proposal, if adopted, would achieve a major improvement in this function by extending the existing West End Concourse to the Amtrak side of the station thereby improving egress even as LIRR's current terminal project improves access/egress to platforms LIRR patrons use.

The LIRR recognized the need to address station level safety and capacity issues, and implemented their station renovation program. Similarly, the Farley proposal will address these concerns for New Jersey Transit and Amtrak passengers. Amtrak believes that it is important to fund all of these projects.

QUESTION SUBMITTED BY SENATOR HATFIELD

HIGH-SPEED RAIL IMPROVEMENTS IN OREGON

SENATOR HATFIELD: Mr. Claytor, first let me say that I am most pleased that the Eugene, Oregon - Vancouver, BC, corridor was designated as one of the five high-speed rail corridors in our nation. It was a pleasure of mine to be a part of the public announcement of that designation at the Amtrak station in Portland.

Through the recently adopted 40 year Oregon Transportation Plan, high-speed rail has been identified as a critical transportation line to Oregon's major population centers. The State of Oregon has just

completed a passenger rail plan that recommends development of high-speed rail by the year 2000. A critical piece of this effort is the availability of federal funds. Oregon's estimated share of the corridor cost is \$450 million. The state of Oregon has identified \$2.6 million of Amtrak projects that would qualify for funding under the President's economic stimulus package.

If the stimulus package is passed by Congress with these increases, can you give me some assurance that this Oregon request will be met with federal funds?

ANSWER: Amtrak has recently been made aware of several improvements requested by the State of Oregon if the economic stimulus package is passed. These improvements were not identified, however, until after a proposed project list was submitted to Congress. Projects benefitting the state of Oregon which were included, however, involved improvements to several stations in the state. Amtrak will make every effort to ensure that these projects are funded. This, of course, depends on the amount of funding received, as well as possible Congressional mandates on how the funds will be spent.

ASSOCIATION OF AMERICAN RAILROADS

QUESTIONS SUBMITTED BY SENATOR LAUTENBERG

"ANTIQUATED" FRA RULES

SENATOR LAUTENBERG. Mr. Blanchette, as a former FRA Administrator, are you aware of any antiquated FRA rules that you think unnecessarily inhibit the expansion of high-speed rail in the country? Would the repeal of these rules require legislative action, or just a regulatory change?

ANSWER. A number of FRA regulations were drafted without TGV-type rail operations in mind, much less magnetic levitation. The subjects range from the need to install grab irons and hand holds to the standards of "crashworthiness."

It is my understanding that FRA has been studying this area for some time. In respect of very high-speed service, FRA has elected to begin with proposed rules of particular applicability dealing with precise corridor projects. From comments received and experience gained, the agency will then be able to decide the appropriateness of regulations of general applicability. It will also be able to judge whether the regulatory route alone will suffice.

In my judgment, this approach seems a sensible one since the technologies are new and each corridor may be different.

I am not aware of any similar problems that may exist in respect of more conventional high-speed operations. However, Amtrak's experience in the Northeast Corridor with speeds up to 125 m.p.h. should provide valuable insights as the Nation looks to the future. Amtrak's existing Corridor service has operated without the need for legislative action.

COMPENSATING FREIGHT RAILROADS FOR HIGH-SPEED OPERATION

SENATOR LAUTENBERG. Mr. Blanchette, in your policy paper on high-speed rail, you state that railroads will enter the high-speed rail arena only on a fully compensatory basis. One of your member railroads, Conrail, has stated that it must be completely reimbursed for any capital improvements, maintenance, and overhead costs associated with passenger service requirements. Should the freight railroads be completely reimbursed for enhancements that also benefits the freight railroad? How, if at all, does AAR's position differ from that of Conrail on the whole issue of High Speed Rail over freight railroads?

ANSWER. After shedding deficit passenger service which they had been forced to operate for decades, the Nation's freight railroads will not re-enter the field in any fashion unless they are compensated.

The policy statement contemplates that the basis of compensation would be settled upon in arm's length bargaining between a freight road and the passenger authority sponsoring the proposed service. Under that concept, each negotiating railroad would address the issue of "enhancements," presumably capital investments desired by the passenger authority which might, in some fashion, benefit freight operations in some measure. Since cases will arise in a variety of contexts, it is impossible at this juncture to predict how individual negotiations will deal with these proposed investments.

In general, however, accommodations of rail facilities to permit high-speed service will not benefit freight operations. As a result, the presumption of the freight railroads is that all enhancements necessary to accommodate high-speed passenger service to freight operations will be financed by the sponsoring passenger authority.

The industry policy statement appended to the AAR testimony was subscribed to by all AAR member roads, including Amtrak. As I testified at the hearing, I consider Conrail's position compatible with the industry statement.

FREIGHT RAILROADS' ATTITUDE TOWARD HSR SYSTEMS

SENATOR LAUTENBERG. Unlike the European high-speed rail systems, almost all passenger trains in the U.S. outside the Northeast Corridor run over private rights-of-way. Amtrak currently compensates the freight railroads for its operations over their rights-of-way to the tune of roughly \$65 million per year. Are you aware of any Class I railroads that view high-speed passenger operations over their rights-of-way as a significant money making opportunity? Are you aware of any Class I railroads that are genuinely interested in seeing high-speed rail operations over their track? Separate from the issue of maintenance costs, do the freight railroads expect to be compensated in a different fashion for high-speed operations versus current Amtrak operations over their rights-of-way?

ANSWER. The issue centers upon incremental improvements to existing conventional (not exceeding 90 m.p.h.) passenger service. As noted in the policy statement, the major freight railroads do not anticipate their participation in TGV-type service requiring dedicated rights-of-way.

There are several factors which make it difficult to assess the future profit potential of high-speed rail for the underlying railroads.

First, the railroad industry in this country has no substantial body of experience in dealing with mixed service involving passenger operations between 90 and 150 m.p.h. Experiments in the 1960's and early 1970's on the Northeast Corridor were not profitable for the underlying carriers, all of which were eventually bankrupted, but the circumstances may well have been unique.

Secondly, while some corridors have been identified, none has been selected. No pro forma financial statements of the kind normally associated with project financing have been issued. The frequency of proposed service and the demands that will be made on the roads' essential freight operations are not known.

Finally, the question of liability must be resolved. The freight railroads advise that no potential justifies running the risk of uninsurable liabilities of great magnitude.

Those caveats noted, the railroads recognize the contributions rail technology can make to alleviate modern problems of moving people between America's cities. The railroads are prepared to assist in that effort. They have made clear, however, that they are not willing to assume entrepreneurial risk since profitability is neither ensured, nor, in terms of social benefits, necessarily relevant. It is for those reasons that the policy statement speaks in terms of the passenger authority assuming full costs of accommodating the proposed service.

The policy statement does not enumerate precise compensation formulas which might serve these objectives. It envisages a two-step process. First, a determination must be made that the proposed passenger service is compatible with freight operations in a particular corridor. Thereafter, the nature of this joint-use arrangement can be assessed; alternatively, it might be practical for the freight service to be relocated, thereby allowing purchase of the right-of-way for exclusive passenger use. Each step in the process should be on a case-by-case basis. Existing contractual arrangements with Amtrak or other passenger authorities may offer useful guidance, but cannot be determined as controlling on an a priori basis. What is salient is that the freight railroads anticipate full compensation.

GRADE SEPARATION vs. IMPROVED CROSSING GATES

SENATOR LAUTENBERG. Both the AAR paper and the Conrail paper state that high-speed rail operations require complete grade separation, which means the

construction of numerous bridges and overpasses to eliminate all grade crossings. As you know, the Swedish railway authorities have had great success in using special crossing gates that prohibit any traffic from gaining access to the track and are relatively inexpensive. Do you think that these Swedish crossing gates hold promise to greatly minimize the cost of grade separation for new high-speed rail corridors?

ANSWER. AAR is advised that FRA is considering research into the Swedish crossing gate technology to assess its feasibility in the United States. Subject to that agency's own assessments of its budgetary priorities, research in this area is meritorious.

Ultimately, however, high-speed passenger service requires the elimination of grade crossings, as was done in the New York-Washington corridor.

CONDEMNING PRIVATE RAILROADS

SENATOR LAUTENBERG. Do you see any scenario where Amtrak would be required to use its condemnation authority to gain access to freight rail corridors in order to provide high-speed rail service?

ANSWER. AAR contemplates that where mixed use is compatible, the financial arrangements can be negotiated. Both Amtrak and the major freight railroads subscribed to the policy statement incorporating that view.

It is not envisaged that the parties will be called upon to test the limits of condemnation authority in this area. However, that process as well requires full compensation.

FREIGHT RAILROADS COMPETING FOR TRANSIT SYSTEMS

SENATOR LAUTENBERG. It is my understanding that a few of the Class I freight railroads are competing against Amtrak for the contracts to operate certain transit systems. Do you believe this signals a renewed interest on the part of the freight railroads in passenger service? Are any freight railroads to your knowledge considering expansion into inter-city passenger service, outside of California?

ANSWER. The railroads incurred staggering losses operating commuter and inter-city passenger services for their own account. AAR is aware of no road anxious to re-enter the field as an equity venturer.

AAR has not been involved in the negotiations among various railroads and commuter authorities. These transactions seem to have in common the perspective that the railroads will be adequately compensated for the service rendered. AAR is aware of no service, inter-

city or commuter, which a freight railroad proposes to launch other than on a compensatory basis.

RE-NEGOTIATING AMTRAK'S OPERATING AGREEMENTS

SENATOR LAUTENBERG. Amtrak will be required to re-negotiate its operating agreements with the freight railroads in 1996. Amtrak currently pays the freight railroads for the incremental costs of their operations over freight track -- roughly \$65 million a year. Mr. Blanchette, is it true that the freight railroads are looking to dramatically increase their compensation from Amtrak in 1996? Is this true for all the Class I railroads with a current agreement with Amtrak? What is the rationale for a significant increase in Amtrak's payments to the freight railroads? What percentage and dollar increase will the freight railroads be seeking in 1996? Is the AAR likely to play a role in these negotiations, or will each railroad be negotiating on its own behalf? Given Amtrak's recent revenue and cost trends, do you anticipate that the negotiating process is likely to increase Amtrak's requirement for a Federal operating subsidy? If so, by how much?

ANSWER. The renewal of the operating agreements with Amtrak has not been discussed in the councils of AAR. As a result, the Association is not privy to the expectations of the parties. The role, if any, which AAR would play in the negotiations has not been determined.

QUESTIONS SUBMITTED BY SENATOR SASSER

EMPLOYMENT POTENTIAL

SENATOR SASSER: One of the important benefits of the President's economic stimulus package is its potential for job creation. What is the estimated employment potential for commercial development of magnetic levitation? Will such operation involve any training or re-training initiatives?

ANSWER: A maglev system could generate employment during both the construction and operation stage. According to the Federal Railroad Administration, if a maglev system were built in the Northeast Corridor, it might require 15,000 person-years for planning and development, 352,000 person-years for construction, and 2,250 employees in 2020 for the operation of the system. However, to the extent that maglev investment replaces investments in highways and airports, the net change in the number of jobs will be less.

Because the maglev would be a new technology, a certain amount of training and retraining would be

required, and would probably be similar for a new modern transit system, according to the Federal Railroad Administration (FRA).

MAGLEV'S EFFECT ON AIRLINE HUBS

SENATOR SASSER: The primary market for maglev would be densely populated, heavily traveled corridors ranging between 100 to 500 miles. The airlines, Amtrak, and Greyhound have already established their presence in these markets. To the extent that maglev must compete and draw ridership away from these sources, specifically with respect to airlines, what might be the impact of commercial development of maglev on airline hub operations?

ANSWER: Since there is no experience with maglev systems anywhere, the number of passengers that would switch from airlines to maglev is difficult to accurately forecast. The TGV route from Paris to Lyon is the best example available for estimating the amount of travelers that might be diverted from air to a system with maglev type speeds. However, domestic air fares in Europe are much higher than in the U.S. and Europeans have a long history of reliance on rail for intra-national trips. In addition, the French government directed the airlines to reduce service on the Paris to Lyon route after TGV commercial operation. Therefore, it is difficult to transfer the French experience to the U.S.

The estimated impact on a hub airport might be minimal because the maglev would serve only cities in a single corridor while a hub airport by their very nature would serve many different destinations. A maglev route could affect only air traffic to cities on the route served by the maglev system. In a few markets, such as the Northeast Corridor, there are numerous shuttle flights between principal cities and in these cases, a significant number of flights could be affected and the available capacity at these airports would increase. However, those few airports with shuttle service are generally not hub airports.

SHORT LOW-SPEED MAGLEV

SENATOR SASSER: The Office of Technology Report, "New Ways" notes "maglev trains already carry passengers on short, low-speed transit lines in Germany and England." What might be the potential of such trains operating in rural areas, and how would you assess the economic feasibility?

ANSWER: The potential of short low-speed maglev trains operating in rural areas is probably minimal. The low-speed maglev trains travel at speeds less than 50 mph and serve urban areas. A car or conventional train could

travel at speeds faster than the low-speed maglev. In addition, travel by car allows more flexibility in traveling to many different points.

To assess the economic feasibility of a low-speed maglev train would be similar to completing a cost-benefit analysis for any transportation project. That is, all costs (planning, construction, and operation) would be compared to the estimated revenues and social benefits/costs. A sensitivity analysis of key variables for both the costs and revenues should also be completed. For example, a high and low estimate for inflation would be used.

ACCURACY OF RIDERSHIP FORECASTS

SENATOR SASSER: The vast majority of maglev's cost, between 75 and 90%, is attributed to construction of the fixed guideway. The location of the guideway is very much dependent on dense population with a high ridership potential. Briefly explain the process for determining the accuracy of the potential ridership base.

ANSWER: Ridership is usually projected from estimates of total travel demand in a market and then a forecast of the proportion that will use the new system. These ridership forecasts generally use models that assign travelers based on modal characteristics such as trip time, passenger comfort, and frequency of trains and traveler requirements. These models work well when used to forecast transportation demand using existing technology. However, for new technologies, such as maglev, ridership forecasts are more problematic because we lack experience with user response to sets of performance characteristics. Attempts are now being made to marry "stated preference" models (i.e. what people say they will do when given a set of alternatives) with revealed preference models (i.e. actual response to a condition).

The process for determining the accuracy of the potential ridership base should include a review of the data sources and assumptions for reasonableness. Because the data for origin and destination of automobile trips are generally not available, proxies are often used. Ridership forecasts are based on a number of assumptions. Ridership forecasts typically assume that the fare on a high speed ground transportation (HSGT) system will be less than the competing airline fare. However, an airline would likely lower its fares if HSGT offered a serious challenge. The ridership forecasts also typically assume that a certain percentage of ridership will result from trips that would not have occurred in the absence of HSGT. Estimates of this ridership, called "induced demand," have ranged from 10 percent up to about 40 percent of the total ridership in the forecast. Some analysts believe that any assumption of induced demand

over 10 percent is too high. Nevertheless, induced demand could be important in cases where the project is designed to be a part of a broader strategy to affect land use. In France, for example, the ridership of TGV between Paris and Lyon has been compounded by business location and travel patterns.

POPULATION SHIFTS EFFECT ON MAGLEV

SENATOR SASSER: The 1990 Census indicated a shift in population from inner cities and rural areas to the suburbs. In many instances, the jobs followed the people. How have these shifts in population affected the maglev planning process?

ANSWER: To the extent suburbanization has decentralized and dispersed the population, fixed guideway systems such as maglev are disadvantaged. The relocation or addition of stops and increased land acquisition would be the primary affects on a maglev system. Population shifts to suburbs would indicate that more stations might be required. Any such additional stop would increase the trip time and lower average speeds, which in turn would decrease the number of travelers likely to be diverted from other transportation modes.

MPO'S INVOLVEMENT WITH MAGLEV

SENATOR SASSER: The ISTEA legislation provided greater input for Metropolitan Planning Organizations (MPOs). What has been the involvement of MPOs in the potential commercial development of maglev?

ANSWER: The states and MPOs, transportation planning organizations for areas with 50,000 or more people, are still trying to define their role with regards to the ISTEA legislation. The ISTEA established specific criteria for selecting transportation projects to be funded and for flexibility in the spending of highway trust funds. The states and MPOs are to select the projects and determine the funding.

With the roles of MPOs still undefined, the commercial development of maglev by MPOs is still undecided. However, prior to the passage of ISTEA, the MPO which includes Orlando, Florida, was involved in the planning of the potential maglev project from the Orlando airport to International Drive. Since, the passage of ISTEA, there has been no plans for this maglev project to receive funds through the MPOs increased flexibility of funding.

ENVIRONMENTAL REVIEW PROCESS

SENATOR SASSER: There are frequent examples, notably with respect to airports, of projects otherwise ready to go but stalled due to environmental concerns. The environmental review process can be quite lengthy. What affect might the environmental review process have on the timing of future maglev development?

ANSWER: The environmental review process or environmental impact statement (EIS) would be no different for maglev development than for any other major projects. A well planned maglev project would start the EIS during the engineering planning stage. An EIS could take two years or longer. If lawsuits protesting the construction of a maglev system were filed, the process could take longer. In addition, acquiring new rights-of-way often involves changes in land use and could lead to encroachment on wetlands and the habitats of endangered or threatened species. In our report, "High Speed Ground Transport: Acquiring Rights-of-way for Maglev Systems Requires a Flexible Approach," we found that there were significant concerns of the impact of this maglev project from Anaheim, California, to Las Vegas, Nevada, on the desert environment.

EMF GUIDELINES

SENATOR SASSER: There is heightened public sensitivity to potential health risks of projects affecting their communities. While maglev promises a "clean, efficient, and safe energy source," there is still uncertainty regarding the health risk of human exposure to electromagnetic fields (EMFs). The potential risks affect not only riders, but residents along the right-of-way. What is the Department of Health and Human Service's (HHS) guideline regarding the potential health risk from exposure to EMFs, and how will maglev development affect such guidelines?

ANSWER: HHS does not have any guidelines on the potential health risk from exposure to EMF. Within HHS, the Food and Drug Administration has some performance guidelines for specific appliances such as microwave ovens. The Institute of Electrical and Electronics Engineers (IEEE) has developed some industry standards for EMF. However, these are industry standards, rather than Federal standards. Also, these standards are primarily for workers in electricity-generating substations.

In 1990, the FRA started a program to define the EMF emissions of HSGT, identify and assess potential health and safety effects, and determine potential EMF control, mitigation, and regulatory options. So far, reports have been completed on the magnetic field characteristics measured on board the German maglev and at maglev facilities.

SUBCOMMITTEE RECESS

Senator LAUTENBERG. The subcommittee stands in recess until Thursday, March 11, at 10 a.m. We're going to hold a hearing then on transit needs involving the Federal Transit Administration, General Accounting Office, and various nondepartmental witnesses.

The hearing is now recessed.

[Whereupon, at 12:50 p.m., Thursday, March 4, the subcommittee was recessed, to reconvene at 10:04 a.m., Thursday, March 11.]

MATERIAL SUBMITTED SUBSEQUENT TO THE HEARING

[CLERK'S NOTE.—Testimony from organizations that did not participate in the high-speed rail hearing follow:]

STATEMENT OF ROSS CAPON, EXECUTIVE DIRECTOR, NATIONAL ASSOCIATION OF RAILROAD PASSENGERS

Mr. Chairman, thank you again for your leadership in developing Amtrak and the Northeast Corridor Improvement Project in general, and for your support for funding the New York-Boston improvements in particular.

We support the President's "Vision of Change," especially:

- the \$188 million fiscal year 1993 supplemental capital for Amtrak;
- the increased spending for transit, both short and long term;
- the \$1.3 billion for high speed rail; and
- the energy tax and its gasoline emphasis.

With respect to our issues, "Vision" reflects thinking that is worlds ahead of perhaps every previous White House. However, we have two disappointments and one concern. First, Amtrak desperately needs an expanded long-term capital program, which "Vision" does not include. Second, for fiscal year 1993, "Vision" funds ISTEA at 100 percent for highways but only 53 percent for transit. Moreover, Secretary Peña on March 3 told the Senate Budget Committee that OMB has approved redirecting all of the federal deficit reduction 2.5 cents-a-gallon to highways.

Now, to our concern. It is simple. We believe the public interest requires spending all or most of the "high speed" \$1.3 billion on "incremental" improvements to existing Amtrak routes and services.

"Incrementalism" means making the best use of existing resources, and increasing rail ridership in the near term. This is exactly what a "pro-environment," "pro-cost-effectiveness" administration—and an administration that wants to do something that benefits travelers before 1996—should be pushing! Incremental improvements mean the administration will immediately get credit, ridership will improve and operating subsidies will decline.

For years we have heard upbeat discussions of "quantum leaps"—very high speed services using mostly-new rights-of-way. We believe development of such services depends on prior incremental improvements, just as existing high speed services—abroad and in our Northeast—developed in corridors with a pre-existing, high train-riding habit.

In sum, the incremental approach:

- holds by far the best—perhaps the only—hope of actually providing improved service within the next several years;
- would increase revenues and reduce operating subsidy requirements on the affected lines and, to a lesser extent, on connecting services; and
- would partially offset "Vision's" failure to provide increased long-term Amtrak capital funding.

The public thinks high speed rail means service that is air-competitive, i.e., able to attract a significant number of riders from airplanes, with resulting benefits in terms of environmental impact, overall U. S. energy efficiency, and reduced congestion in the aviation—and, to a lesser extent, highway—systems.

This definition is market-driven, not technology-driven. Travelers on trains as on planes care little about top speed, only about how the modes' total travel times compare. Amtrak's Metroliners only reach 125 mph. Japan's bullet trains captured the world's imagination with a top speed of 130 mph when service began in 1964. Bullet trains did not exceed 142 mph until 1992, and 142 remains the limit for many such trains. However, all of these trains are air-competitive and most people consider them "high speed," although Amtrak's equipment compares most unfavorably to the X2000 in terms of noise and general ambiance.

To maintain the program's credibility, to insure that the best projects prevail, and to expand the total pool of funds available for passenger rail, we urge requiring a

20 percent non-federal match where any of the \$1.3 billion is awarded to states or projects. (Twenty percent is the standard, "level-playing-field" ISTEA figure.) The match should be cash up front, not a promise to repay a portion of ticket revenues in some future year. Such a promise would become meaningless if a project never opened or failed to generate anticipated revenues.

Credibility is an issue because, if a non-federal match is not required, money could go to the state with the best lobbyist or the best-positioned legislators. Currently, for example, California is investing substantial sums in its rail passenger corridors, whereas Texas is investing nothing. If Texas were to get a major portion of this \$1.3 billion, there could be tremendous bitterness in California and a chilling message to all states: if you spend your own money on passenger rail, you risk having the feds make you look foolish in a few years.

Thank you for considering our views.

STATEMENT OF WILLIAM S. BROWN, III, CHAIRMAN OF
THE BOARD, MAGLEV, INC.

Mr. Chairman and members of the Committee, good afternoon. My name is Bill Brown and I am the Chairman of the Board of MAGLEV, Inc., a Pittsburgh based company which we believe is the only MAGLEV public/private/labor consortium in the country. We very much appreciate the opportunity to appear before you today.

MAGLEV, an acronym for Magnetic Levitation, is a technology that many people have only recently become aware. MAGLEV, Inc., however, began to form six years ago, when Carnegie-Mellon University established a High Speed Ground Transportation Center in Pittsburgh in response to the growing transportation crisis in the United States. While creating a database on High Speed Ground Transportation (HSGT) technologies and projects around the world, the Center became aware of the rapid development in MAGLEV technologies and recognized that the future of HSGT Systems would be highway and airport oriented in addition to helping to revitalize passenger service from city center to city center. With Pittsburgh's strategic location midway between the east coast and the large cities in the midwest, planners at the Center recognized that an opportunity existed to implement an HSGT System to these regions out of a Pittsburgh hub. In 1988, the MAGLEV Working Group was formed. The Group was a unique public-private partnership which included private firms, labor unions, government representation at the City, County, and State level, a large utility, and the university. A preliminary feasibility study issued by the group in 1990 concluded that a MAGLEV system linking Pittsburgh with the surrounding region is feasible, and could create a MAGLEV industrial base in the region which could providing MAGLEV Systems to world markets.

In 1990, the Working Group formed MAGLEV, Inc. This unique corporation's shareholders include businesses, government, steelworkers, building trades, and most recently, USAir. The first task of the corporation was to complete a more extensive Design, Development and Demonstration (DD&D) Study with the following objectives:

- Plan the Mid-Atlantic Regional System connecting Pittsburgh to West Virginia, Ohio, the midwest, the east coast, as well as other cities in Pennsylvania.
- Develop a financing plan for the System.
- Develop a manufacturing and assembly plan.
- Develop, in greater detail, plans and an environmental overview of a Demonstration System linking downtown Pittsburgh and the new Pittsburgh International Airport. The Demonstration System will prove the technology, establish the Pittsburgh Tri-State Region as the American MAGLEV manufacturing base, be part of the Intermodal solution to a growing local corridor congestion problem, and serve as the critical first link in the Regional System.

After rigorous study of alternative technologies, MAGLEV was chosen for the system, over conventional High Speed Rail (HSR). MAGLEV is high-speed guided ground transportation which depends on magnetic forces for vehicle suspension, guidance and propulsion. It operates on electricity, making it clean and quiet. It is also safe, as the

MAGLEV cars wrap around an elevated guideway and cannot derail. The capital costs, approximately \$30 million per mile, are similar to those of new highways, but the system is far less damaging to the environment. HSR systems have a lower capital cost, but higher operating and maintenance (O&M) cost. Since a MAGLEV system has no friction between vehicle and track with its attendant wear and tear, long term maintenance costs will be low compared to other rail systems. At speeds of 185 mph or more, MAGLEV consumes 32% less electricity per seat-mile than other types of HSR. It can attain higher speeds with much faster acceleration than HSR, which will increase ridership by reducing travel times. It can climb much steeper grades and take sharper curves than HSR, critical factors in the rugged terrain in our area. The speed of such a system (150 to 300 mph) complements the air and auto modes by providing a desirable alternative for trips in the 100 to 600 mile range. Thus, MAGLEV can be used to link airports and city centers. This link will ease congestion in the air and on the highway. Air travel can then be used primarily for long trips, for which it is most efficient, and highways can similarly serve shorter trips with less congestion.

Once MAGLEV was chosen as the technology for the system, a type of MAGLEV technology had to be chosen. There are basically two types of high speed MAGLEV Systems. The electromagnetic suspension or EMS, commonly referred to as an "attractive" system, uses electromagnets to pull the vehicle up toward the bottom of the guideway, while electrodynamic or EDS systems use superconducting magnets to generate magnetic fields to repel the vehicle up from the top of the guideway. Both systems use linear motors for propulsion.

EDS technology was first proposed here in the United States by Drs. Gordon Danby and James Powell in the mid 1960s. Although several models and schemes were developed, most research stopped in the mid 1970s as federal funding was halted. The Japanese, however, picked up the research and ran laboratory tests of magnetic levitation using superconductivity in 1971. In 1979, a test vehicle without passengers achieved a speed of 320 mph on the Miyazaki test track. Since then, however, despite the spending of over \$1 billion in research and testing, the system has been plagued by problems that will prevent it from achieving commercial operation before the year 2005. Recently, there has been a surge of activity in the United States to develop an all-American "leapfrog" MAGLEV, using EDS technology. It must be stressed, however, that such a system will require hundreds of millions of research and development dollars alone, and cannot possibly be ready for commercial operation in this century. This is not in agreement with MAGLEV Inc's. goals to immediately start a system which addresses the growing transportation crisis in the region, and to deliver badly needed economic development through the creation of a new manufacturing base.

On the other hand, EMS technology is ready to build today. In fact, a low speed (30 mph) EMS system has been in commercial operation at Birmingham Airport in the United Kingdom since 1984. This "attractive" system technology goes back to 1922 when a German engineer, Herman Kemper, first proposed this principle for "floating trains". Full scale development of high-speed EMS began in Germany in 1969, and culminated in 1988 with the development of the Transrapid TR07, built by a consortium of German firms. Over \$1 billion has been spent in developing this train, but unlike the EDS technologies, it is ready for commercial operation. It has been continuously tested on a 20 mile test track at speeds in excess of 270 mph, has undergone rigorous tests for safety and reliability by the German government, and has been closely scrutinized by experts from all over the world, including the United States Federal Railway Administration (FRA). Because this technology is ready to put people

to work and address our transportation problems today, it was chosen by MAGLEV, Inc. as the basis for the Regional and Demonstration Systems. In the course of preparing final design of such a system, MAGLEV, Inc. will Americanize the system to meet the unique needs of our market. We believe changes can be made to the guideway to lower the capital costs, and to allow it to take sharper curves at higher speeds, thus maximizing the use of existing highway rights-of-way. The signalling and communications systems also will be redesigned to make them state-of-the-art American systems. It is our intent to manufacture the system here, using American labor and material. It can be noted that a double-track MAGLEV system uses one ton of steel per linear foot of guideway in terms of the economic impact of manufacturing such a system.

MAGLEV, Inc. is currently completing the DD&D Study mentioned previously. In this study, we have developed conceptual alignments, cost estimates and performance plans for the Regional System linking Pittsburgh to cities throughout Pennsylvania, West Virginia and the Mid-Atlantic Region. The study has also examined, in more detail, four alternate alignments for a Demonstration System between the new Pittsburgh International Airport and the Downtown Pittsburgh area. This demonstration line will serve to prove the technology under commercial operation, and to establish Pittsburgh as the MAGLEV manufacturing center in North America. In addition, the Demonstration Line will serve as the critical first link in the Regional System, and complement other existing and planned transportation facilities in the corridor by serving as one of the most effective Intermodal Transfer Transportation Systems in the world. The line will link the new Pittsburgh International Airport via an 8 minute ride to Station Square near downtown Pittsburgh. At this point, passengers can transfer to a light rail system and subway, buses (traveling on exclusive busways), water taxis, taxis, park and ride lots, a commuter funicular (an inclined railroad up the side of Mt. Washington), or can take a short walk to downtown.

The Demonstration System has widespread community support, including that of local governments, business, labor, the academic community, the state legislature and the Governor. The ISTEA legislation includes federal funding for design and construction of a prototype system, for which MAGLEV, Inc. is well positioned due to the work already completed. The estimated cost of the Demonstration System is \$500 to \$600 million, well within the amount authorized in the legislation for a prototype system. An economic model prepared during this study indicates that this investment will create 8,700 person-years of jobs during construction, primarily in the areas of manufacturing, construction, transportation and mining. The total economic benefits would be \$1 billion to \$2 billion. It is absolutely the only system which can beat the ISTEA requirement of being on the ground running within 6 years of starting the conceptual design competition, because it is based on a technology which already exists. Because it is in an existing transportation corridor, the Demonstration System is forecasted to generate enough revenue from ridership to cover its operating and maintenance costs, thus defraying some of the testing expenses that would be associated with the prototype system.

Upon successful completion and implementation of the Demonstration System, MAGLEV, Inc. is prepared to expand this first link into a fully Regional System serving all of Pennsylvania, West Virginia and Ohio. The economic model developed as part of the study indicates that such a system would, at a minimum, cover its operating and maintenance costs out of farebox revenue, and bring tremendous economic benefits to the region by creating jobs and improving mobility. A ridership

model prepared for the system indicates that, when completed, the system would carry 17 million passengers annually, generating annual revenues of approximately \$1 billion, which is considerably more than the projected annual operating and maintenance costs, estimated at approximately \$400 million.

Obviously, considerable public investment is required to generate the capital costs for the system, but the benefits are many and diverse. Construction of the system will create 675,000 person-years of employment, which translates to 22,000 full time jobs over a 30 year construction period. Manufacturing, in a region which desperately needs new industries, would account for 34% of this work, with 10% in construction, and the rest spread over other industries as the benefits multiply through the economy. The improvement in mobility created by the system will be crucial in bringing the economy of the region into the 21st Century. All areas of Western Pennsylvania, West Virginia and Ohio will be opened to increased tourism and a dramatic increase in economic activity from the east coast. The speed of the system would make all of West Virginia and Western Pennsylvania "bedroom communities" to Pittsburgh and Washington, D.C. These areas will also have the improved access they need to the new Pittsburgh International Airport, forecasted (by the FAA) to be the 8th busiest airport in the country by the year 2005.

In summary, MAGLEV, Inc. is a well established, broad-based organization with the support of business, labor, academia, government and the public throughout the Pittsburgh and Mid-Atlantic Region. We have studied and selected a system which can improve mobility and create jobs now, not 15 years from now, with a technology that is more environmentally benign than any other mode of transportation in the world. An investment in this project is an investment in the future of this country.

In closing, MAGLEV, Inc., is appreciative of the support for high speed ground transportation being put forth by the Administration and by Congress. We especially laud the efforts of Senators Specter, Wofford, Lautenberg, D'Amato and Mikulski for their tireless efforts to bring the United States back to the forefront of this critical technology. We look forward to working with this subcommittee and other members of Congress to bring this dream to reality. We thank you for affording us this opportunity to testify, and stand prepared to take any questions which you may have.

DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1994

THURSDAY, MARCH 11, 1993

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:04 a.m., in room SD-138, Dirksen Senate Office Building, Hon. Frank R. Lautenberg (chairman) presiding.

Present: Senators Lautenberg, D'Amato, Domenici, and Specter.

PANEL I—METHODOLOGIES USED TO DETERMINE TRANSIT NEEDS

GENERAL ACCOUNTING OFFICE

STATEMENT OF KEN MEAD, DIRECTOR, TRANSPORTATION ISSUES,
RCED

NONDEPARTMENTAL WITNESSES

AMERICAN PUBLIC TRANSIT ASSOCIATION

STATEMENT OF JACK GILSTRAP, EXECUTIVE VICE PRESIDENT

AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION
OFFICIALS

STATEMENT OF FRANK FRANCOIS, EXECUTIVE DIRECTOR

DEPARTMENT OF TRANSPORTATION

FEDERAL TRANSIT ADMINISTRATION

STATEMENT OF ROBERT McMANUS, ACTING ADMINISTRATOR

OPENING REMARKS

Senator LAUTENBERG. I will call the Subcommittee on Transportation of the Senate Committee on Appropriations to order.

We are going to try to stay on schedule. There is the possibility of a call for a vote in the Budget Committee on which I sit and there could be an interruption. If we have one, we will try to make it short and in an appropriate place of the program.

After 12 years of administration budget neglect, President Clinton has sent to Congress a stimulus package that contains an additional \$752 million for the Federal Transit Program for fiscal year

1993. And the President has proposed a long-term investment program of significantly enhanced transit funding.

This is encouraging news for, as we will hear today, America's transit needs are significant, to say the least. We must meet these needs if mass transit is to realize its full potential to speed Americans to work, reduce traffic congestion, clear our air, and provide access to work, education, and recreation for all Americans regardless of income or disability.

As we are going to hear today, the various estimates put transit's capital financial needs at between \$6.4 and \$15.7 billion a year. As large as those numbers appear, in the context of an annual public expenditure in our Nation's airways, airports, highways, rivers, harbors, railroads, and transit needs of \$96.5 billion, these transit needs do not appear to be out of line.

These projected transit needs are dwarfed by the many more billions of dollars of American productivity wasted each year in traffic congestion and the preventable health care costs of air pollution, not to mention the damage to structures within our communities also from air pollution.

The Intermodal Surface Transportation Efficiency Act [ISTEA] was a blueprint, an outline, a sketch, if you will, as to how we might level the surface transportation playing field to give transit a fair chance, by introducing new ideas regarding funding flexibility. It included new programs, such as congestion mitigation, air quality relief, and intelligent vehicle/highway systems, and it increased the overall funding levels for both highways and transit.

But as sound as these concepts are, they need to be implemented and they need to be a reality. To paraphrase an old expression, "Man cannot live by bread alone," well, we cannot travel from place to place throughout our country by highways alone. The playing field must be leveled. We have to think of moving goods and people as a problem to be solved with an integrated surface transportation system—not mode versus mode.

President Clinton's proposals are a good start. The short-term stimulus funding will not only provide a needed increase but will create new jobs for the economy. And I am confident that there will be no problem in obligating this new money within the timeframe, the 60-day period, called for in the President's stimulus package.

Lou Gambaccini, the APTA Chairman, also the General Manager of SEPTA, provided us earlier with testimony that additional transit funding is desperately needed. A survey conducted by the association identified major needs and stated that new funding would be disbursed all across the country and could be put to good use on 649 different projects on 98 transit systems in 31 States.

Thus it can be seen that any transit supplemental would be a broad-based stimulus to the economy and would bolster the transit infrastructure of this country. I believe that it is a program well suited to putting people back to work very quickly, while at the same time addressing some very pressing domestic needs.

Beyond this fiscal year, however, the committee needs to know that, whatever the needs are of the transit industry, these figures offered by the most recent administrations were significantly different than those estimates we heard from the associations and industries that represent transit.

This committee needs to have the best available information in order to facilitate the decisionmaking process. We need the best information available on how individual States and transit authorities will use the funds that the committee provides.

There are probably valid reasons on why funding levels suggested by the various parties have varied. We want to hear them. I think it was once said: The facts, just the facts, please. Well, we would like to have those facts from as many objective sources as we can find.

Today, the GAO will testify on what needs to be done to improve funding level projections. In addition to getting better and more reliable information concerning transit's needs, I believe Congress also needs to understand the needs transit operators face due to the enactment of the Americans With Disabilities Act [ADA], and the Clean Air Act of 1990. These were both very important pieces of legislation that I strongly supported. However, from the preliminary information that we have, these requirements appear to be imposing significant unanticipated costs. We will hear from several witnesses on these issues.

In addition, we will hear testimony on how we can better manage transit programs to encourage more private sector involvement so that buses, railcars, locomotives, air conditioning, brake systems, safety equipment, and the like are made here in the United States rather than, as is all too common, relying on foreign manufacturers to meet these equipment needs.

Today's hearing, by examining transit needs and exploring what we need to do to get good, accurate numbers, is another attempt to make the ideas and the goals of ISTEA a reality, so that we will once again employ our people to produce our goods and services, supported with the most advanced, balanced transportation network in the world.

With that, I am pleased to note that the witnesses are at the table. One minor housekeeping rule is that, in order to accommodate the full plan for witness statements, we are going to have to limit your comments to 5 minutes. Any record statements that you want to be included will be inserted in the record.

PREPARED STATEMENT

At this point, I will insert in the record an opening statement from my colleague, Senator Sasser, who is unable to join us due to schedule conflicts

[The statement follows:]

STATEMENT OF SENATOR SASSER

Good morning. I join in welcoming today's witnesses. Although this morning's hearing will examine the fiscal needs of transit systems, it's really about the needs of people as they go about the various activities of their daily lives. The efficiency of work and the quality of leisure are measured, in large part, by the effectiveness of transit systems.

A strong Federal-local partnership is essential to a safe, efficient, and affordable transit network. Contrary to the budget rationales of previous administrations, the federal government does, indeed, have a stake, a vital interest in transit operations. Local transit operations, whether urban or rural, are vehicles to the nation's economic productivity. Failure to invest prudently or adequately in transit stagnates the economy and stymies the nation's overall competitiveness.

For the past twelve years, previous administrations have not held up the federal end of the transit partnership. Since 1980, federal aid to transit has declined some 50 percent. Nowhere has the federal disinvestment in transit been more evident than in operating assistance.

Since 1980, the federal investment in transit operations has steadily declined. In 1980, the federal government invested \$1.09 billion in transit operating assistance. By 1990, federal support for transit operations had diminished to \$0.86 billion. Over the decade of the 1980's, the ratio of state and local versus federal funds committed to transit operations was 9 to 1. That's nine state and local dollars for every one dollar contributed by the federal government.

As a result, local transit systems have been forced to juggle limited funds to address mounting capital and operating needs. Absent consistent federal support, the balance between capital and operating needs becomes a losing proposition. The situation is made even more tenuous because local transit systems must also find ways to operate under the added weight of compliance with important Clean Air Act and Americans With Disabilities Act requirements.

Enactment of ISTEA promised to end the transit juggling act by making transit needs a central component of a balanced, well-planned national transportation network. Moreover, ISTEA recognized that an investment in transit is an investment in people. For people who work, and those who seek work, transit is the vehicle to an enhanced standard of living.

An investment in transit not only maintains jobs, but creates them. And, the Clinton Administration recognizes the link between transit investments and jobs. The Administration's Fiscal Year 1993 Supplemental includes some \$750 million for transit needs. It is estimated that these funds alone will create some 9,000 as part of a long-term strategy to get the country moving productively into the next century. An investment in transit today promises substantial, long-term benefits tomorrow.

In short, America has a vested interest in transit. Every segment of society—the poor, the elderly, the socially disadvantaged, those who work and those who want to work, all have a shared stake in transit. Indeed, if enterprise zones, as the Administration has proposed, are to have a chance, then transit investments provide the key to opening avenues of economic access and opportunity to millions of Americans. It's time to make the ISTEA commitment to transit work for people.

I look forward to hearing the testimony.

STATEMENT OF KEN MEAD

Senator LAUTENBERG. I would first call on Ken Mead for his statement, again, within the 5-minute limitation.

You will see the clock go off when the 5 minutes are up.

Mr. MEAD. Thank you, Mr. Chairman.

We appreciate the opportunity to discuss transit needs projections. As Congress decides how to allocate limited transportation resources, it needs data that reflect State and local transit needs. So I would like to discuss the different transit needs projections, the extent to which they varied, what factors could affect future transit needs, and opportunities for improving the projections.

We have a report that was required by the ISTEA legislation. I believe it is in your package. It was issued this week.

If you look at the chart we have made available, you can see projections of transit needs from three organizations. FTA projected the needs to be \$7.5 billion annually; AASHTO projected \$20.5 billion; APTA provided the largest projection at \$32 billion.

Before explaining the reasons for the variances, I want to compliment FTA. FTA's 1992 needs report is a significant improvement over its past reports since it includes both maintenance and expansion needs. I think you know that in the 1980's, FTA's needs reports did not make any needs projections at all.

The overall variance between the projections is substantial, about \$25 billion. The largest difference occurred because FTA ex-

cluded operating needs. AASHTO and APTA project those to be about \$14 billion and \$16 billion, respectively.

Since operating costs are about 75 percent of all transit needs, FTA's exclusion of these costs clearly does not provide a complete picture of the needs situation.

It is not an issue, Mr. Chairman, of whether the Federal Government covers these costs or not. The fact is they are needs. Those needs are required to be reported by law.

Transit needs also include capital, which is broken down into two components. First is maintenance and replacement; second is expansion. All three projections included costs for those two capital components. Annual capital needs were projected at \$7.5 billion by FTA, \$6.4 billion by AASHTO, and \$15.7 billion by APTA. That led to another substantial variance of about \$9 billion.

The reasons? FTA, for example, calculated a portion of capital expansion needs on an assumption by the Highway Administration that a portion of needed highway capacity wouldn't be built. The assumption was that a portion of the people that would otherwise have used those highways would move to transit.

In contrast to FTA's approach, AASHTO and APTA relied on cost estimates for specific transit projects for expansion needs. AASHTO relied on the projects that were in FTA's new starts pipeline while APTA actually did a survey of its members to ask them what they thought would be good projects. APTA included them, regardless of whether FTA had approved the projects or not.

Also, in estimating expansion needs, FTA based the cost of serving additional riders on the cost of bus service. The problem with that is some expansion would be met by rail service, and rail service tends to be more costly than bus service.

Factors that can increase these projections include Federal legislation, such as the Clean Air Act amendments, the Americans With Disabilities Act, and the Energy Policy Act. These could cause future transit needs to exceed all the needs projections.

AASHTO's and APTA's estimates do not include costs associated with those laws because they were not passed at the time, or the regulations implementing them were not out by the time the estimates came out. FTA's did include about \$260 million per year, I believe, for the ADA but not the other laws.

Our report makes several recommendations, Mr. Chairman. I divide them into short- and long-term recommendations.

In the short term, we need to get operating needs factored into the estimates, and various other assumptions, such as the mode—rail or bus—that transit users will be using, need to be factored in.

In the longer term, we think the answer is provided by the ISTEA legislation. The ISTEA legislation does a couple of things that will be very useful in this area. Specifically, you have to have a State transportation plan. You also have to have a public transportation management system. Operating in tandem, these will provide actual data relevant to transit needs.

The new data sources will provide Congress with information on what projects are planned given current levels of funding, what the implications of those choices are, and what impact increased or decreased funding might have.

Thank you, Mr. Chairman.

PREPARED STATEMENT

Senator LAUTENBERG. Thanks very much, Mr. Mead. Your full statement will be made part of the record.
[The statement follows:]

STATEMENT OF KENNETH M. MEAD

Mr. Chairman and Members of the Subcommittee: It is a pleasure to be here today to present our views on the nation's transit needs and the challenges the Federal Transit Administration (FTA) and the transit community face in addressing these needs. Our testimony today is based on our work at FTA over the past several years, including a report¹ released this week on transit needs projections, which was required by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).

In order to make important decisions to support public transit's role in the future, the Congress needs the best information available about how states and localities intend to use transit to achieve their transportation-related goals. These goals include increased mobility, reduced traffic congestion, improved air quality, and economic development.

Our testimony today will focus on the different transit needs projections provided to the Congress, why these projections varied, what factors could affect the transit needs, and opportunities for improving FTA's transit needs projections. In summary, our work shows that:

- The Congress has been provided several projections of transit needs which vary widely, from \$7.5 billion to \$32 billion per year. These projections were prepared by FTA, the American Association of State Highway and Transportation Officials (AASHTO), and the American Public Transit Association (APTA). Such a wide variation in the need for funds complicates the Congress' decision-making process.
- The projections varied because each defined transit needs differently by including or excluding certain cost elements and by making different assumptions to determine cost. The largest difference occurred because FTA excluded operating needs, which AASHTO and APTA projected to be \$14 billion and \$16.3 billion a year, respectively. In addition to operating needs, the key components of transit's overall needs are capital expansion needs, and capital maintenance and replacement needs. All projections included some costs for these two needs, but FTA possibly understated needs in these categories by making several conservative assumptions.
- Several factors, including federal legislation such as the Clean Air Act Amendments of 1990 (CAA), the Americans With Disabilities Act (ADA), and the Energy Policy Act of 1992, could cause future transit needs to exceed all of the needs projections. FTA addressed some potential impacts of ADA and CAA, but AASHTO and APTA did not include estimates because these laws and regulations were not yet in place when they prepared their projections. However, none of the projections included the increased transit needs that might occur if states and localities decide to increase transit services to help meet a broad range of transportation-related goals.
- There are short- and long-term improvements that FTA should make to improve its transit needs projections. In the short term, FTA should include operating costs in its projections to provide a complete picture of transit needs, particularly since operating costs have historically been more than three times capital costs. FTA should also modify certain assumptions and methodologies to better reflect future transit costs. In the longer term, since states and localities determine transit's role, FTA should utilize the state public transportation management systems (PTMSs) and the state and local transportation improvement plans required under ISTEA. The PTMSs will provide transit system condition and performance data not currently available nationwide. The state transportation plans will include those transit projects that states and localities have decided to fund. By basing needs on state-specific data, FTA will be able to provide the Congress better information about needs in individual states and localities.

Let me discuss these issues in more detail.

¹ *Mass Transit: Needs Projections Could Better Reflect Future Costs* (GAO/RCED-93-61, March 9, 1993).

TRANSIT NEEDS PROJECTIONS VARY WIDELY

Our report compared FTA's most recent transit needs report, issued in June 1992,² AASHTO's September 1988 report, and APTA's October 1990 report, which projected annual transit needs in constant 1991 dollars to be \$7.5 billion, \$20.5 billion, and \$32 billion, respectively (see table 1). FTA is required by law to report to the Congress on the condition and performance of the nation's transit systems (49 U.S.C. 308), whereas AASHTO and APTA provided needs projections to contribute to the reauthorization debate that resulted in the passage of ISTEA.

The nation's transit needs include operating costs, such as employee wages, fuel, and insurance; capital maintenance costs, such as vehicle and facility replacement; and capital expansion costs, such as bus and rail expansion, and previously deferred maintenance activities. Annual capital needs, for both maintenance and expansion, were projected to be \$7.5 billion by FTA, \$6.4 billion by AASHTO, and \$15.7 billion by APTA. FTA limited its report to only capital needs, unlike AASHTO and APTA, which projected operating needs to be \$14.0 billion and \$16.3 billion, respectively.

TABLE 1: SUMMARY OF TRANSIT NEEDS PROJECTIONS

[Dollars in billions per year]

Needs	FTA 1992	AASHTO 1988	APTA 1990
Maintenance/replacement	\$3.9	\$4.4	\$6.5
Expansion	3.6	2.0	9.2
Subtotal, Capital	7.5	6.4	15.7
Operating	NA	14.0	16.3
Total	7.5	20.5	32.0

Note: All figures are expressed in constant 1991 dollars. "NA" indicates that this element was not addressed.

Source: GAO analysis of FTA, AASHTO, and APTA data.

DIFFERENT DEFINITIONS OF TRANSIT NEEDS CAUSED FTA'S, AASHTO'S AND APTA'S NEEDS PROJECTIONS TO VARY

The three organizations defined needs differently by including or excluding certain cost elements and by making different assumptions. Moreover, they relied to varying degrees on the two basic data sources currently available—historical capital and operating data and local plans for future transit services—to project operating, capital expansion, and capital maintenance needs.

OPERATING NEEDS

The largest difference between the three projections was for operating needs, primarily because FTA did not include any projections needs. Transit operating expenses are substantial, costing more than three times the amount spent on capital items. Transit services require large expenditures for bus drivers, train operators, fuel, tires, and so on. AASHTO and APTA projected operating needs to be \$14 billion and \$16.3 billion, respectively. AASHTO's and APTA's operating needs projections differed because they used actual operating expense data from different years.

Although required to include operating needs in its transit needs reports, FTA has not done so. FTA did not include operating needs because including them would make its report inconsistent with the highway needs report, which includes only capital needs. FTA officials told us that consistent needs definitions are important because FTA and the Federal Highway Administration (FHWA) are working toward a consolidated report. FTA also cited the complexity and sensitivity of operating needs projections as reasons for not including these needs.

We support the move to a consolidated report and agree that improved consistency in needs definition is an important component of this effort. We believe, however, that operating needs should be included in future FTA reports, because (1) transit's operating expenses are a significant portion of transit costs (far exceeding capital expenses); (2) FTA's statutory requirement specifically calls for capital, oper-

²The most recent highway needs report, *The Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance* (January 1993), also presents transit needs. The transit needs in this report are the same as those in FTA's 1992 transit needs report, except that the costs to eliminate the backlog of deferred maintenance are distributed over 20, rather than 10, years. Our report also included FTA's 1991 transit needs report.

ating, and maintenance projections; and (3) acceptable methodologies for projecting operating needs are available.

CAPITAL EXPANSION NEEDS

The second largest difference among the projections was for transit capital expansion needs to improve or increase transit services. Annual capital expansion needs were projected at \$2 billion by AASHTO, \$3.6 billion by FTA, and \$9.2 billion by APTA. FTA's expansion needs are based on (1) bringing buses, rail vehicles, and rail facilities up to good condition by performing historically deferred maintenance and (2) serving additional riders whose highway needs will not be met. FTA potentially understates capital expansion needs by calculating the cost of these services on the basis of the cost of bus services. However, FTA acknowledges that some expansion would be met by rail service, which is more costly than bus service.

AASHTO's and APTA's reports also included capital expansion, but they based their capital expansion projections on cost estimates for specific transit projects, either approved or proposed, rather than on historic average costs (as FTA did). However, AASHTO and APTA each made different assumptions about what expansion projects to include. AASHTO limited expanded transit services to those included in FTA's "pipeline of projects"—those transit projects that FTA has approved for planning, engineering, and/or construction—and in a 1983 APTA list of proposed high-occupancy vehicle (HOV)/busway projects. APTA limited its capital expansion needs to those identified by its operating members in a 1990 survey that asked for estimates of all funds needed to meet their communities' transit goals, whether or not these projects were approved by FTA.

CAPITAL MAINTENANCE NEEDS

The smallest differences among the three projections (FTA's estimate was \$3.9 billion, AASHTO's \$4.4 billion, and APTA's \$6.5 billion) were for maintenance needs—the costs to maintain existing transit vehicles, facilities, and equipment. FTA's and AASHTO's first premise is that the nation needs to maintain the existing vehicle fleet, and they both used average vehicle cost and age data to estimate these needs. For facilities and equipment maintenance needs, FTA calculated these as a percentage of vehicle costs, whereas AASHTO relied on 1983 surveys of rail and bus facility needs. APTA, on the other hand, projected greater needs than the others because its methodology allowed for facilities expansion and used projected future costs rather than average historic costs.

Some of FTA's assumptions in determining capital maintenance needs resulted in understating these needs. For example, FTA's cost calculations for replacing aging vehicles operated by private nonprofit agencies—for programs such as Head Start—included only vehicles that FTA had funded, which is about half of the total fleet. The other vehicles were mostly funded by the Department of Health and Human Services, and FTA did not consider them to be a "transit need."

TRANSIT NEEDS MAY INCREASE BEYOND THE PROJECTIONS

All three projections excluded several factors that are likely to significantly increase future transit needs. Specifically, none of them fully takes into account the following factors: (1) costs for transit vehicles to convert to alternative fuels, due to clean air or energy conservation requirements; (2) ADA requirements to make existing transit stations and vehicles accessible to persons with disabilities and to provide expanded special services for the disabled; and (3) expanded transit services to meet specific transportation-related goals, such as reduced traffic congestion or improved air quality. Furthermore, future transit operating needs may exceed those forecasted by either APTA or AASHTO, since these projections did not account for the operating needs associated with their projected capital expansion needs.

Several recently enacted federal laws, such as CAA and ADA, could increase transit needs in two ways: by imposing requirements that increase the costs of providing existing transit services and by possibly leading to new transit services. For example, costs for transit services could increase because ADA requires transit operators to make all services fully accessible, which adds to transit's capital and operating costs. Additionally to the extent that new transit services are implemented to improve air quality and mobility for persons with disabilities, the nation's transit needs would increase.

FTA included projected capital costs to conform to ADA requirements and presented some possible impacts of the CAA on the basis of potential regulatory requirements, but AASHTO and APTA did not address these laws since they had not

been enacted at the time their projections were prepared. However, none of the projections included the full range of transit needs that might occur.

FTA NEEDS TO MAKE SHORT- AND LONG-TERM IMPROVEMENTS TO ITS NEEDS PROJECTIONS

FTA could strengthen its needs projections by improving its methodologies and by making use of improved data that will be available under new ISTEA requirements. Our report recommends several specific ways, both in the short and long terms, that FTA can improve its projections. In the short term, FTA could improve its methodologies by including operating needs in its future transit needs reports. FTA should also modify certain assumptions and methodologies to reflect future costs. For example, FTA should calculate expansion costs on the basis of a mix of rail and bus services rather than estimating these needs using only bus service costs, which are lower than those for rail.

In the longer term, rather than projecting needs based on nationwide averages, FTA should use new data sources that better reflect state and local transit situations. ISTEA requirements will make available state and local investment plans, as well as data on transit systems' physical condition and service effectiveness, which better predict future transit investment needs than do existing data sources. These requirements include a state transportation plan and improvement program documenting local transit decisions and a state public transportation management system containing transit performance and condition data. In developing regulations for these ISTEA requirements, the Department of Transportation can help ensure that transit data are collected that will be useful in projecting needs. For example, FTA now relies on a 1983 physical survey of rail conditions, and the PTMS could provide FTA access to current information on actual vehicle and facility conditions without having to periodically conduct survey updates.

In summary, future transit needs will depend upon a complex set of decisions made by each state and locality as they determine how their transportation systems will address transportation, environmental, economic, social and other goals. Until better information about local decisions is available nationwide, our recommendations should improve the transit needs projections that are based on historical data. Using the ISTEA-required state transportation plans and the PTMS data on the condition and efficiency of transit systems, when these become available, should result in needs reports that better reflect local transit investment decisions.

Mr. Chairman, this Subcommittee is facing competing demands for funding in high speed rail, highways, bridges, mass transit, aviation, Amtrak, and other areas. Many of these choices are policy decisions that only the Congress can make. It is of the utmost importance that when making these decisions in this time of scarce resources, the Congress have the best information available.

This concludes my prepared statement. I will be pleased to respond to any questions you or other members of the Subcommittee may have.

Mass Transit: Needs Projections Could Better Reflect Future Costs

GAO

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General Accounting Office
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Resources, Community, and
Economic Development Division

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The Honorable Donald W. Riegle, Jr.
Chairman
The Honorable Alfonse D'Amato
Ranking Minority Member
Committee on Banking, Housing and
Urban Affairs
United States Senate

The Honorable Norman Y. Mineta
Chairman
The Honorable Bud Shuster
Ranking Minority Member
Committee on Public Works
and Transportation
House of Representatives

In order to make important policy and funding decisions to support public transit's role in the future, the Congress needs the best information available about how states and localities intend to use transit to achieve their transportation-related goals. These goals include increased mobility, reduced traffic congestion, improved air quality, and economic development. Since 1988 the Congress has been provided with four projections of overall transit needs that range from about \$3 billion to \$32 billion per year. The Federal Transit Administration (FTA), an agency of the Department of Transportation (DOT), has prepared two reports as required by law; the American Association of State Highway and Transportation Officials (AASHTO) and the American Public Transit Association (APTA)—two nonprofit associations representing state transportation and transit interests, respectively—have each prepared one projection to contribute to reauthorization discussions.

Because of long-standing concerns about existing needs projections, the Congress, in section 3028 of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), required GAO to examine issues concerning estimates of transit needs. In discussions with your offices, we agreed to identify (1) why the projections of transit needs varied, (2) what other factors could affect the accuracy of future projections, and (3) any opportunities for improving future transit needs projections.

Results in Brief

The projections varied because each organization defined transit needs differently by including or excluding certain cost elements or by making different assumptions to determine cost. The key cost elements that determine transit's overall needs are (1) operating, (2) capital expansion, and (3) capital maintenance and replacement. FTA excluded all operating needs in both of its reports, whereas these costs were projected to be \$14 billion/year and \$16.3 billion/year by AASHTO and APTA, respectively. Three of the four projections included capital expansion costs for increasing transit services. However, FTA's projection possibly understated needs by making several conservative assumptions. For example, FTA assumed that the cost of new transit services would be the same as current average costs, while AASHTO and APTA relied on cost projections for specific new transit services. FTA also conservatively estimated human service (for the elderly and disabled) capital replacement needs by limiting these to capital that FTA has historically funded.

Several factors, including federal legislation such as the Clean Air Act Amendments of 1990 (CAA), the Americans With Disabilities Act (ADA), and the Energy Policy Act of 1992, could cause future transit needs to exceed all of the needs projections. For example, transit service may be expanded to contribute to emissions reductions required by the CAA. Additionally, states and localities may choose to increase transit services in their communities beyond projected levels to help meet a broad range of transportation-related goals, such as facilitating land use and economic development plans. Since these laws and regulations were not yet in place when FTA's 1991, AASHTO's, and APTA's reports were prepared, these projections did not include the expanded transit needs that might result. FTA's 1992 report did address some potential impacts of ADA, CAA, and some service expansion. However, none of the projections included the full range of increased transit needs that might occur.

In the short term, DOT could help to ensure that the projections are more reflective of potential future costs by including operating costs and the estimated costs to comply with laws such as CAA and ADA. In the longer term, DOT could develop more meaningful needs projections by using state and local transit investment plans as well as data on transit systems' physical conditions and service effectiveness. These data will be made available by three ISTEA requirements: (1) a state transportation plan and improvement program documenting local transit decisions; (2) a state public transportation management system (PTMS) containing data on transit performance and condition; and (3) a Bureau of Transportation Statistics (BTS) within DOT that, among other things, will compile, analyze, and publish data on the availability, use, and condition of transit services. In developing regulations for these ISTEA requirements, DOT can help ensure that transit data are collected that will be useful in projecting needs.

History of Transit Needs Reports

FTA is required by 49 U.S.C. section 308 to biennially report to the Congress on the current performance and condition of public mass transportation systems, including a complete assessment of all public transportation facilities in the United States. FTA is also required to include an assessment of future capital, operating, and maintenance requirements for 1-year, 5-year, and 10-year periods at specified levels of service.

FTA has published five reports to satisfy section 308, although none addressed all the required elements. The last two reports (which were published in February 1991 and June 1992) discussed transit's performance (e.g., ridership and cost trends), and unlike the first three reports, these included an assessment of future transit needs for urban and commuter rail and for urban, rural, and human service bus services. FTA is also working toward a joint transit and highway needs report, and the January 1993 Federal Highway Administration's (FHWA) report, The Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance, is the first DOT needs report to include both transit and highway needs. FTA officials told us that the transit needs in the 1993 FHWA report are basically those from FTA's 1992 needs report.

AASHTO and APTA have prepared several projections of the nation's transit needs. Both AASHTO's September 1988 and APTA's October 1990 needs reports, prepared to contribute to the reauthorization debate that resulted in the passage of ISTEA, concluded that needs exceeded current funding. Table I presents each report's projected needs. (A more complete discussion of the individual reports and how we compared them are included in app. I.)

Table I: Summary of Transit Needs Reports

Dollars in billions per year				
Needs	FTA 1991	FTA 1992	AASHTO 1988	APTA 1990
Maintenance/replacement	\$ 3.2 to 4.0	\$ 3.9	\$ 4.4	\$ 6.5
Expansion	NA	3.6	2.0	9.2
Subtotal—capital	3.2 to 4.0	7.5	6.4	15.7
Operating	NA	NA	14.0	16.3
Total	\$ 3.2 to 4.0	\$ 7.5	\$ 20.5	\$ 32.0

Note: All figures are expressed in constant 1991 dollars. Table I.1 (app. I) describes how these values were calculated. "NA" indicates that this element was not addressed.

Different Definitions of Needs Caused Projections to Vary

Different definitions of transit needs caused FTA's, AASHTO's, and APTA's needs projections to vary from \$3 billion to nearly \$32 billion per year. Each organization operationally defined transit needs by including (or excluding) certain cost elements or by making different assumptions to determine cost. The three key elements that determine transit's overall needs are the costs to operate, expand, and maintain/replace existing transit services.

FTA's Reports Did Not Include Operating Expenses

Although FTA is required by law to include capital and operating needs in its transit needs projections, FTA did not include operating needs in any of its projections, addressing capital needs only. AASHTO and APTA, on the other hand, reported on both capital and operating needs. Because AASHTO's and APTA's operating needs projections were \$14.0 billion and \$16.2 billion, respectively, it is clear why their overall needs projections were so much greater than FTA's.

By not including operating costs in its 1991 and 1992 transit needs projections, FTA omitted the largest expense category for the nation's transit systems. Transit operating expenses are substantial, costing more than three times the amount spent on capital items. Transit services require large, continual expenditures for bus drivers, train operators, fuel, tires, and so on.

FTA officials told us that both FTA reports excluded operating needs for several reasons. First, since FTA is working with FHWA on joint highway/transit needs reports, FTA seeks a common definition of needs with FHWA, which defines highway needs as capital only. Second, FTA notes that addressing operating needs would require introducing a myriad of complex issues (e.g., fare policies, demand elasticities, etc.) that would increase the report's complexity while adding little value. Third, FTA believes that the assumptions necessary to project operating needs would compromise the capital projection's integrity when presented as an overall single need. However, estimating methodologies similar to those used for capital projections are available for operating needs, and by including only capital needs in its reports, FTA did not provide the complete picture of future transit needs as envisioned in its reporting requirements.

Assumptions About Capital Expansion Needs Significantly Affected Projections

The second largest difference among the needs reports was the treatment of expanded transit capital needs to improve or increase transit services. Although FTA's 1991 report did not include any expansion needs, its 1992 report did address expansion by calculating the capital cost to provide for additional transit passenger miles. AASHTO's and APTA's reports also included capital expansion, but each took a different approach to calculating these costs. Capital expansion needs in the three studies that included them ranged from about \$2 billion to over \$5 billion per year.

FTA's 1992 report presented two types of capital costs in its expanded transit service scenario: the costs to improve conditions and the costs to improve performance. Improving transit conditions requires bringing all bus and rail vehicles and facilities up to "good" condition by performing historically deferred maintenance. Improving transit performance requires adding transit capacity to meet potential increases in current demand trends. This potential increased demand stems from FHWA's report entitled The 1991 Status of the Nation's Highways and Bridges: Conditions, Performance, and Capital Investment Requirements, which forecast that about 34,000 lane-miles of needed highways would not be built. FTA's 1992 report assumed that 10 percent of the passenger miles of travel that would have been served by these lane-miles could result in additional transit ridership. Although FTA acknowledged that some of the expanded service needs would likely be met by more costly rail service, the report calculated only the costs of expanded bus service to meet those needs, thereby understating the costs of needs actually met by rail service.

Both AASHTO and APTA based their capital expansion projections on estimates for specific transit projects, either approved or proposed. AASHTO quantified the capital costs for expanded transit services on the basis of FTA's "pipeline of projects"—those transit projects that FTA has approved

and begun to fund—and an APTA list of proposed high-occupancy vehicle (HOV)/busway projects. APTA based its capital expansion estimate on its 1990 survey of operating members' needs.¹

Although Maintenance/Replacement Projections Were Similar, Some Assumptions Underestimated Needs

The smallest differences among the four projections (a gap of \$3.3 billion for existing capital versus \$9.2 billion for capital expansion and \$16.3 billion for operating needs) were for the costs to maintain existing transit capital—the only category of needs that all four studies included. Although the specific calculation methods differed, there were relatively small differences among FTA's two maintenance/replacement cost estimates and AASITTO's because these three projections (1) used average vehicle cost and age data to estimate the cost to replace the existing operating vehicle fleet and (2) added facilities' maintenance costs as a percentage of vehicle costs. APTA, which surveyed its members on what they need to maintain their existing services, projected greater needs than the others because its methodology did not limit respondents to the current ratio of vehicles to facilities.

FTA's 1991 report calculated the average annual replacement cost of buses on the basis of minimum-useful-life standards (the minimum vehicle age or mileage for FTA to fund replacement) and average vehicle costs; the report estimated maintenance facility needs as a percentage of bus purchases. However, some of the assumptions that FTA made caused it to underestimate replacement needs. For example, FTA's calculations of the cost to replace aging human service fleets included only the vehicles FTA had funded—about one-half of the total. The other vehicles were mostly funded by the Department of Health and Human Services, and FTA did not consider these to be a "transit need." FTA's 1992 report made the same assumption.

FTA's 1992 report treatment of capital maintenance/replacement needs was an improvement over its 1991 report. For example, FTA's 1992 report increased annual replacement costs by 0.8 percent to maintain transit's current performance of increasing ridership.² However, by using current average costs rather than marginal costs (the incremental cost to provide new services), FTA potentially understated the costs of this ridership growth. The marginal costs to increase ridership are likely to be higher than current average costs, because expenses increase (because efficiencies decline) as service is extended into less densely populated areas.

Although AASITTO's maintenance/replacement needs projections closely match FTA's, AASITTO's do not include human service and rural needs.³ APTA's report presented the largest projection of existing transit systems' needs by allowing operators to include facility needs beyond the historical ratio of vehicle-to-facility investments. Differences among the projections also occurred because APTA relied primarily on its own data collection—a survey of its operating members expanded to reflect the entire transit industry—for its projections, while FTA and AASITTO both primarily used audited historical data.

(App. I provides more detailed information on the four different needs projections and the methods used to prepare each projection.)

New Requirements May Increase Transit Needs Beyond the Projections

All four projections excluded several factors that could significantly increase future transit needs. Specifically, none of them fully take into account the following factors: (1) costs for transit vehicles to convert to alternative fuels because of clean air or energy conservation requirements; (2) ADA requirements to make existing transit stations and vehicles accessible to persons with disabilities and to provide expanded special services for the disabled; and (3) expanded transit services to meet specific transportation-related goals, such as reduced traffic congestion or

¹APTA operating members actually provide transit services, and these survey respondents carry over 90 percent of all persons using urban public transit in the United States.

²This figure is based on the fact that total transit ridership has increased by 8 percent over the last 10 years. The average annual increase, therefore, has been 0.8 percent.

³AASITTO recognized human service and rural transit needs but presented only additional funding needs/shortfalls (not total needs). Therefore, these costs were not included in our report.

improved air quality. Furthermore, future transit operating needs may exceed those forecast by either APTA or AASHTO, since these projections did not account for the operating needs associated with their projected capital expansion needs. Until such time as these factors are taken into account, projections may understate future transit needs.

Additional Capital Investments May Be Necessary

To the extent that local communities select transit projects to help meet transportation-related goals, such as improved air quality and reduced traffic congestion, transit capital needs will increase. None of the needs reports explicitly projected transit's costs to support all these goals. Additionally, several recently enacted federal laws—CAA, ADA, and the Energy Policy Act of 1992—impose greater capital costs to maintain existing transit service levels. None of these laws had been enacted at the time the AASHTO and APTA projections were made. FTA's 1992 report included projected capital costs to conform to ADA requirements and presented some possible impacts of CAA based on potential regulatory requirements. The Energy Policy Act was not enacted prior to issuance of FTA's 1992 report and therefore was not reflected in the needs projections.

Transit can contribute to improved air quality, reduced traffic congestion, enhanced mobility for the disabled, energy conservation, and land use and economic development plans. For example, increased transit is one of several CAA transportation control measures for making required air quality improvements. To the extent that expanded transit services are chosen to meet these or other goals, the nation's transit needs will increase.

Even if transit services are not expanded to meet transportation and other goals, recently enacted federal legislation imposes new costs on transit operators. For example, ADA requires transit operators to make all services fully accessible—including equipping all new buses with wheelchair lifts, putting elevators in all transit stations not at grade, and providing information in accessible formats—all of which add to transit's capital and operating costs. Because the ADA regulations were released after FTA's 1991, AASHTO's and APTA's reports were prepared, the law's effects were not included in these projections. FTA's 1992 report, however, included the capital costs to comply with ADA—\$260 million by DOT's estimate. The ADA regulations (49 C.F.R. parts 27, 37, and 38) require each transit operator to develop a plan for complying with ADA's paratransit (demand-responsive service) requirements within 5 years, including cost estimates. These estimates provide a new opportunity for FTA to include the most complete and accurate data available in its needs projections concerning estimated ADA costs to be incurred by local transit operators.

Operating Needs Increase With Capital Expansion

Future operating costs could increase for a variety of reasons, including expanded transit services and deteriorating transit equipment. Future decisions to expand transit services would increase transit's future operating needs, as operating and maintenance expenses increase in conjunction with the additional miles and hours operated. Additionally, if routine maintenance and replacement activities are deferred, which has occurred in the past, operating costs and inefficiencies will increase because poorly maintained and older vehicles are more costly to operate (e.g., are less fuel efficient, break down more often).

If operating costs increase, local communities may have to reduce transit service (which reduces capital effectiveness) or provide greater transit subsidies. For example, federal operating assistance declined from \$1,185 million in 1984 to \$845 million in 1990, and while state and local assistance increased from \$6.9 billion to \$8.7 billion, not all areas were able to find sufficient funds to support current transit operations and reduced service accordingly. Two of the eight states we visited told us that they have already cut services because of shortages of operating funds, and every transit official we spoke with told us that future service cuts were a possibility because of increased requirements and potential reductions in subsidies from all levels of government.

New Requirements Offer Opportunity to Improve Future Needs Projections

New opportunities exist for improving national transit needs projections by looking to state and local transit plans as well as data on transit systems' condition, performance, and effectiveness. ISTEA's new requirements for state-developed transportation plans and improvement programs, new management systems, and the creation of the Bureau of Transportation Statistics offer an opportunity for DOT to gather improved data on future transit investments and system condition, which can serve as inputs to future needs analysis. The processes necessary to collect this information are still being developed, but over the next several years, great progress could be made to lay the foundation for improvements to future transit needs projections.

ISTEA requires states and localities to prepare transportation plans and improvement programs that reflect local assessments of transit needs. Previously, such documents were neither required nor standardized; therefore, data from all areas were not available for national transit needs projections. As a result, all of the projections assumed that current services would be maintained, and some would be expanded, without considering actual plans. The projections therefore included current services that are no longer needed and may have understated needs exceeding current services. As FTA stated in its 1992 report, FTA plans to try to include data from urban area plans and improvement programs in its future needs reports. By also looking to the new state plans, information on actual needs, as reflected by new services as well as any planned reduction in existing services, could be included in future needs projections.

Besides new planning processes ISTEA requires all states to implement several transportation management systems, including a public transportation management system, before January 1, 1995. A PTMS can provide FTA with access to better local data and decisions from which nationwide needs can be better projected. For example, past FTA needs projections have relied on FTA's Rail Modernization Study, which describes the 1983 condition of the nation's rail transit systems. FTA would have access to more recent data on rail systems' condition if the states' PTMS contained this type of information. DOT is still developing the regulations for these management systems, but its announcement of a notice of proposed rulemaking indicates that the PTMS will describe the condition, efficiency, and effectiveness of transit systems in each state. However, DOT will need to provide descriptive guidance to the states and localities so that the data collected will be consistent. If DOT's regulations address these factors, the PTMS could be an invaluable resource for future needs projections.

ISTEA also creates, within DOT, BTS to compile, analyze, and publish a comprehensive set of transportation statistics. In doing this work, BTS is to coordinate with existing DOT administrations, including FTA, to prepare, among other things, (1) statistics on the availability, use, and condition of the nation's transit services and (2) information that crosses modes, such as variables influencing travel behavior. Although FTA is working toward improving its data in these areas, in part with FHWA, when in place BTS may provide another opportunity for DOT to collect and analyze state and local information relevant to transit needs projections and to ensure data consistency between the modes.

It is important to note that ISTEA's planning and management system changes will not immediately lead to improved needs projections, since it will take several years to develop and implement these changes. However, by including improved data as they become available, FTA's national transit needs projections can become more reflective of state and local transit needs.

Conclusions

The four transit needs projections were different because they included different cost elements and made different assumptions to calculate costs. By not including operating needs in its projections, FTA omitted the largest expense category for the nation's transit systems. Additionally, FTA potentially underestimated capital needs in a number of areas. For example, to maintain the existing human service fleet, FTA limited replacement needs to only those vehicles that were purchased with DOT funds, thereby leaving out half the vehicles in this fleet.

New federal requirements, which were not finalized when the needs reports were prepared (e.g., ADA and CAA), will likely increase costs beyond the projections. Additionally, transit needs could potentially exceed all of the projections should states and localities choose to increase transit services to meet a broad range of transportation-related goals. New planning requirements for state and local transit plans could become the basis for a nationwide estimate of transit needs. These kinds of data are not being collected currently, but DOT has an opportunity to facilitate future data availability. In developing the requirements for ISTEA-mandated transportation planning, management systems, and BTS, DOT can help ensure that useful data are collected for future transit needs reports.

Recommendations

To better assist the Congress and others in the transportation community, we recommend that the Secretary of Transportation take actions to improve future Federal Transit Administration transit needs reports required by 49 U.S.C. section 308 by

- including operating needs (current as well as expanded system) for the nation's transit systems;
- including vehicle replacement needs for the entire human service operator fleet, not just the vehicles DOT has funded;
- including transit operators' cost estimates for ADA compliance as reported to FTA under 49 C.F.R. parts 27, 37, and 38;
- developing new needs projection methods that are more reflective of potential costs, such as estimating the proportion of expanded ridership that will use rail versus bus service and projecting costs accordingly, and including costs to address CAA and the Energy Policy Act of 1992;
- ensuring that standard data requirements for transit needs projections, such as planned transit expansions and transit systems' condition and maintenance information, are included in the new ISTEA transportation planning and management system regulations that are currently under development; and
- considering transit needs data requirements, such as variables that influence the selection of transit over other alternative modes, when determining BTS' future activities.

Agency Comments

We discussed the contents of this report with officials from the Office of the Secretary of Transportation; FTA's Deputy Associate Administrator, Office of Budget and Policy; and other FTA officials from the Offices of Grants Management and Budget and Policy. We also obtained the views of AASITTO's Program Director and APTA's Director of Policy Analysis and other officials from these organizations. Officials from each of these offices generally agreed with our findings and recommendations, and we have incorporated their comments and clarifications where appropriate. However, the DOT officials disagreed with our recommendation to project operating needs in future DOT/FTA transit needs reports for several reasons, including that such projections would make their report inconsistent with the highway needs report, which includes only capital needs. FTA officials told us that consistent needs definitions are important because FTA and FHWA are working toward a consolidated report. We support the move to a consolidated report and agree that improved consistency in needs definition is an important component of this effort. However, we continue to believe that operating needs should be included in future FTA needs reports, because (1) transit's operating expenses are a significant portion of transit costs (far exceeding capital expenses); (2) FTA's statutory requirement specifically calls for capital, operating, and maintenance projections; and (3) acceptable methodologies for projecting operating needs are available. As agreed with your offices, we did not obtain written comments on a draft of this report.

Scope and Methodology

To evaluate the four transit needs reports, examine other factors that could affect the accuracy of these reports, and identify opportunities to improve future reports, we obtained information from FTA, AASITTO, APTA, and state and local transportation officials in eight states. Our review was conducted between April and November 1992 in accordance with generally accepted government auditing standards. Our objectives, scope, and methodology are discussed more fully in appendix II.

We are sending copies of this report to the Secretary of Transportation; the Administrator, Federal Transit Administration; the Director, Office of Management and Budget; participating organizations; and interested congressional committees. We will also send copies to other interested parties upon request.

Our work was performed under the direction of Kenneth M. Mead, Director, Transportation Issues, who can be reached on (202) 512-2834. Other major contributors to this report are listed in appendix III.



J. Dexter Peach
Assistant Comptroller General

Appendix I

Comparison of Transit Needs Projections

The Federal Transit Administration (FTA), American Association of State Highway and Transportation Officials (AASHTO), and American Public Transit Association (APTA) have prepared projections of the nation's transit investment needs. Each projection was prepared at a different time and covered different time periods. In addition, each projection made different assumptions about what constituted either an existing or expanded transit system need. As a result of these differences, the projections' needs ranged from about \$3 billion to \$32 billion per year.

Overview of Transit Needs Reports

Within the last 5 years, FTA has published two needs reports, and AASHTO and APTA have published one each—a total of four reports. FTA's 1991 Report did not quantify needs over a specified time frame, whereas the other three reports specified periods from 1 to 33 years. The two FTA reports were required by federal law, while the other two reports were produced for planning and legislative purposes. As table I.1 shows, FTA's 1991 report presented the most conservative amount for the nation's transit needs, as low as \$ 3.2 billion per year. At the other extreme was APTA's projection of nearly \$32 billion per year.

FTA's 1991 Report

FTA released its fourth transit needs report in February 1991.¹ This report did not specify any time frame for its projections. The report presented one scenario of transit needs (replacing existing capital) and reported the annual cost to maintain the conditions of the nation's existing transit systems to be between \$3 billion and \$3.7 billion. FTA's 1991 report did not include any transit system expansion or operating needs.

¹DOT is required by 49 U.S.C. section 308 to biennially report to the Congress on the current performance and condition of public mass transportation systems, including an assessment of future capital, operating, and maintenance requirements for 1-year, 5-year, and 10-year periods at specified levels of service. The requirement was established by 1983 technical corrections to the 1982 Surface Transportation Assistance Act; FTA also published reports in 1984, 1987, and 1988.

Table I.1: Overview of Transit Needs Reports

Dollars in millions per year ^a				
Report time frames	FTA—1991 report indefinite period	FTA—1992 report 1992 through 2001	AASHTO—1988 report 1988 through 2000 ^b	APTA—1990 report 1992 through 1997
Capital:				
Status quo	\$3,238 to 3,994	\$3,891	\$4,440	\$6,459
Expanded system	NA ^c	\$3,607	\$2,008	\$6,166
Other ^d	NA	NA	NA	\$3,057
Subtotal:	\$3,238 to 3,994	\$7,498	\$6,448	\$15,682
Operating:				
Status quo	NA	NA	\$14,019 ^e	\$16,269 ^f
Expanded system				Unquantified, new services would increase needs
	NA	NA	NA	
Total need	\$3,238 to 3,994	\$7,498	\$20,487	\$31,951

Source: GAO analysis of FTA, AASHTO, and APTA data.

^aTable presents constant 1991 dollars per year for all studies for comparative purposes. These needs are the overall needs projections and are not adjusted to reflect receipts of individual operators. Both of FTA's reports presented needs in annual amounts, whereas AASHTO and APTA presented a total amount for a multiyear time period. Annual amounts for both AASHTO and APTA were calculated by dividing total amounts by the number of years included in the time period. FTA's 1991 report presented needs in 1989 dollars, FTA's 1992 report presented 1991 dollars, AASHTO's report presented 1988 dollars, and APTA's 1990 report presented 1990 dollars. All values have been converted to constant (1991) dollars using the Gross Domestic Product implicit price deflator. Except as otherwise noted, dollar values do not include inflation.

^bAASHTO projected transit needs from 1988 through 2000. For this analysis, AASHTO's projections have been abbreviated to reflect only needs from 1988 through 2000. This more closely matches the time frames in FTA's and APTA's projections. However, AASHTO's analysis assumes heavy investment from 1988 through 2000 to address the backlog of deferred maintenance needs. Annual costs after 2000 are projected to be lower than those for 1988 through 2000.

^cNA indicates that an element was not addressed in the study.

^dOther capital items include service vehicles, computers, fare collection systems, and communications equipment.

^eAASHTO's needs projection assumed a 4.1 percent inflation rate in its calculation of transit's operating needs. For comparative purposes, GAO took AASHTO's base year (1988) needs estimate and converted the estimate to its 1991 dollar equivalent.

^fAPTA's needs projection stated that 1990 operating needs were \$15.7 billion and that nearly \$100 billion would be needed over the 1992 to 1997 period. For comparative purposes, GAO took APTA's base year (1990) needs estimate and converted the estimate to its 1991 dollar equivalent.

FTA's 1992 Report

FTA released a subsequent transit needs report in June 1992. This report projected costs over a 10-year period, from 1992 through 2001. FTA's 1992 report presented two different scenarios for transit needs: (1) maintain conditions and performance and (2) improve conditions and performance. The first scenario focused primarily on replacing existing capital equipment, but also included costs to modestly increase transit services—consistent with transit's ridership growth trends. The second scenario included the additional costs to improve transit facilities and services over those in the maintain scenario. FTA's report discussed bus and rail needs within each scenario. FTA calculated annual costs for each of these elements and then added them to present a total annual cost of \$7.5 billion to maintain and improve transit conditions and performance. The report projected a limited amount of growth in transit services, but it did not project any operating needs.

AASHTO's 1988 Report

AASHTO's 1988 transit needs report was published in September 1988 as an appendix to The Bottom Line report.² AASHTO's transit needs report presented several different categories of transit needs without combining them into one total needs requirement. The categories presented were maintenance of the current system, new starts, operations, rural, and specialized services. Within each category, AASHTO projected transit needs and funding for the 1988 to 2020 time period.³ If all of AASHTO's categories of needs for 1988 through 2000 are added together, a total annual transit investment of about \$20 billion is required.

²The Bottom Line and related reports were part of AASHTO's 2020 effort, a long-term planning effort to reach consensus on alternatives for meeting the nation's transportation requirements through the year 2020.

³For this analysis, AASHTO's projections have been abbreviated to reflect only needs from 1988 to 2000. This more closely matches the time frames in FTA's and APTA's projections. However, AASHTO's analysis assumed that higher levels of transit investment are made immediately (in the near term) to restore the condition of the nation's transit systems to a state of good repair. If these higher investments are made, AASHTO estimates that needed annual expenditures would decrease after the year 2000.

APTA's 1990 Report

APTA's transit needs report was published in October 1990, in time to be included in the pre-ISTEA congressional debate. The report projected needs from 1992 through 1997 for most types of needs, such as maintaining and improving current capital equipment and facilities, expanding transit services, and operating transit systems. Although APTA did not explicitly request data on human service transportation needs, some respondents may have included human service transit needs in their response to APTA's survey. APTA's total projection was nearly \$32 billion per year.

Assumptions Made Regarding Existing Transit System Needs

Although all of the transit needs reports included the costs to maintain current transit systems, each projection calculated these costs differently. For example, FTA and APTA collected and generated their own data that fed their calculations, whereas AASHTO largely relied on existing sources of data. Table 1.2 summarizes the assumptions made about existing transit system needs. These needs are divided into bus, rail, and human service for comparative purposes, although the original studies may not have followed this same organization.

FTA's 1991 Report

FTA's 1991 report focused on replacing existing capital equipment and facilities that were already in service. The report categorized needs into two types: bus and rail. To quantify replacement needs, FTA calculated the annual cost to replace existing fleet vehicles on the basis of its information on current vehicle fleet age, standards for vehicle useful life, and average costs of replacement vehicles.

Table 1.2: Assumptions Made to Determine Existing System Maintenance Needs

	FTA—1991 report	FTA—1992 report	AASHTO—1988 report	APTA—1990 report
Bus systems:				
Vehicle replacement	Minimum useful life for peak fleet in service	Average current age for peak fleet, plus ridership growth trends ^a	Average current age for peak fleet in service	1990 APTA survey of transit operators polled operator needs ^b
Vehicle rehab	NA ^c	NA	NA	1990 APTA survey of transit operators
Service vehicles	NA	NA	NA	1990 APTA survey of transit operators
Maint facilities	Ratio (1:2) of vehicle grants	Ratio of vehicle grants (1:1 urban) (1:2 rural)	Urban: 1983 APTA survey Rural: (1:2) ratio of vehicle grants	1990 APTA survey of transit operators
Operating facilities	NA	Included in maint. facilities above	NA	1990 APTA survey of transit operators
Non-DOT-funded systems	NA	NA	NA	1990 APTA survey expanded to include all operators
Rail systems				
Vehicle replacement	1987 Rail Modernization Study (RMS) (for services in operation in 1983)	1987 (RMS)	Average current age and cost for peak fleet in service	1990 APTA survey of transit operators polled operator needs
Vehicle rehab	1987 (RMS)	1987 (RMS)	NA	1990 APTA survey of transit operators
Service vehicles	NA	1987 (RMS)	NA	1990 APTA survey of transit operators
Maint facilities	1987 (RMS)	1987 (RMS)	1987 (RMS)	1990 APTA survey of transit operators
Operating facilities	1987 (RMS)	1987 (RMS)	1987 (RMS)	1990 APTA survey of transit operators
Human service systems				
Vehicle replacement	Minimum useful life for 1/2 of DOT-funded operator fleet (estimated by CTA ^a)	Average life for 1/2 of DOT-funded operator fleet (estimated by CTA ^a)	Minimum useful life for fleet (estimated by CTA ^a)	Only if included in 1990 APTA survey of transit operators
Vehicle rehab	NA	NA	NA	NA
Service vehicles	NA	NA	NA	NA
Maint facilities	NA	Ratio (1:2) of vehicle grants	NA	Only if included in 1990 APTA survey of transit operators
Operating facilities	NA	Include in maint. facilities above	NA	NA
ADA services in place	NA	ADA requirements included in bus services above	NA	NA

	FTA—1991 report	FTA—1992 report	AASHTO—1988 report	APTA—1990 report
Non-DOT-funded systems	NA	NA	NA	NA

⁴FTA treats continued system growth (at recent historical levels) as "maintaining the performance" of existing transit systems, although this does represent system expansion.

⁵APTA conducted a survey of all its U.S. operating members between February and June 1990. A total of 166 transit operators, representing nearly 60 percent of the U.S. fleet of transit passenger vehicles, responded to the survey. The survey asked operators to project capital needed from all funding sources to meet their communities' requirements for public transportation improvements from 1992 through 1997. Estimated total needs for all transit agencies were projected from survey responses.

⁶NA indicates that this element was not addressed.

Bus needs were divided into urban, rural, and human service transportation needs. FTA calculated the urban bus fleet inventory on the basis of the maximum number of peak-hour vehicles in service.⁴ FTA added a 20 percent spare ratio (additional buses) to the reported peak-service inventory to allow for buses to receive needed maintenance and other contingencies. FTA then determined the average cost for a new bus on the basis of information contained in recent grant applications. Since FTA specifies that the minimum useful life for a full-size bus is 12 years, FTA assumed that urban bus replacement needs were 1/12 of the bus fleet multiplied by the average bus cost identified above.

Rural bus needs were calculated similarly, except that FTA relied on a contractor for fleet size information. Information on rural transit systems is difficult to obtain, since rural operators are not required to report to FTA in section 15 reports, and many rural operators are small systems (often fewer than five vehicles). The Community Transportation Association of America (CTAA) prepared a 1986 fleet inventory of rural transit operators under a contract to FTA. FTA multiplied the fleet, divided by an average useful life of 5 years (since rural buses are smaller and less durable than urban buses), by the average vehicle cost to determine annual replacement needs.

Human service bus needs were calculated similarly to rural needs, except that FTA limited needs to only those vehicles purchased with FTA/DOT funds. CTAA prepared the estimate of the vehicles operated by FTA section 16(b)(2) recipients—nonprofit human service agencies. However, since many of these nonprofit human service agencies also receive vehicle funds from the Department of Health and Human Services (HHS), CTAA estimated that just over half of the fleets' vehicles were purchased with FTA 16(b)(2) funds. FTA then assumed that only one-half of the total vehicle replacement represented a "transit need." Replacement costs for these vehicles were based on average cost and a 5-year useful life. FTA multiplied the annual vehicle replacement costs by FTA's portion of the total fleet to determine the total replacement needs for human service transportation.

In addition to vehicle replacement needs, FTA included an amount for bus maintenance facilities (maintenance buildings, etc.). FTA assumed capital costs for bus facilities to be one-half the annual bus replacement costs for urban and rural providers.

Rail needs were calculated differently than were bus needs. FTA based its rail needs projections on the 1987 Rail Modernization Study.⁵ The study estimated the costs to restore the nation's rail transit systems to a "state of good condition" on the basis of the systems' 1983 conditions. The study did not include the cost of any service or technology improvements to the systems and was limited to only services in operation before 1983. Costs for new rail systems and new extensions to existing (pre-1983) systems were not included in the study.

FTA made two changes to information in the rail modernization report before including it in the 1991 needs report. First, FTA inflated the reported costs to 1989 dollars, since the rail modernization study used 1983 dollars

⁴FTA collects this information in its annual section 15 reports. The 1988 section 15 reports were used to determine the maximum number of vehicles in peak service (vehicle inventory) for the 1991 report's calculations.

⁵Rail Modernization Study: Final Report, April 1987, Gannett Fleming Transportation Engineers, Inc., prepared under contract to FTA.

for its calculations. Second, FTA calculated the amount of replacement and rehabilitation that had occurred since 1983. Because FTA was not able to identify whether improvements identified in the rail modernization study had been completed, FTA presented a range of remaining rail investment needs. The range reflected the percentage of total rail capital funds that may have been used to reduce the backlog of rail modernization needs between 1983 and 1989.

FTA's 1992 Report

FTA's 1992 report included three basic categories of existing transit system needs: maintaining current conditions, maintaining current performance, and the effects of recent legal requirements. FTA assumed that current conditions could be maintained by replacing rolling stock according to its present age, as opposed to its minimum useful life. To maintain current performance, FTA assumed that transit ridership would need to increase 8 percent over the next 10 years, which would match actual ridership increases over the last 10 years. Finally, FTA included the costs to meet Americans With Disabilities Act (ADA) requirements and discussed potential requirements that may be effected by the Clean Air Act Amendments of 1990 (CAA).

To maintain current conditions, FTA calculated the annual costs to replace the nation's bus and rail systems. Bus systems were divided into urban, rural, and human service fleets. The urban peak-service inventory was obtained from 1990 section 15 data. Unlike the 1991 report, which grouped all buses together, the 1992 report identified the number and replacement costs of several types of buses (full-size, mid-size, and small). Annual vehicle replacement costs were estimated to be the average bus purchase price (by vehicle type) divided by twice the current average age of the vehicle fleet. This resulted in a slower replacement schedule than was used in the 1991 report, e.g., maintaining the current age of the fleet rather than replacing vehicles according to their minimum useful life. For example, the 1991 report assumed replacement of full-size buses every 12 years, FTA's minimum useful life. The 1992 report calculates costs based on replacing buses every 15 years, thus maintaining the current average bus age of about 8 years.

Since no information was available on the average age of the rural and human service operator fleets, FTA used average useful life. CTA's estimates of these fleets were used to determine the vehicle replacement needs for the rural and 16(b)(2) operators. FTA included only about half of the 16(b)(2) operators fleets' needs in its replacement needs, as it did in its 1991 report.⁶

FTA's 1992 report treated bus facilities differently from its 1991 report. Whereas the 1991 report assumed that replacement needs for bus maintenance facilities were roughly half of annual vehicle purchases, the 1992 report includes both maintenance and nonmaintenance facilities (e.g., shelters, transit malls, etc.). The costs for both types of facilities were estimated to be equal to annual vehicle replacement costs, since FTA grants for all facilities have averaged about the same as bus purchase grants. FTA assumed that rural and human service bus facilities (maintenance and other) are only half of FTA-provided bus purchase grants, since these operators have fewer needs for nonmaintenance facilities.

Rail systems maintenance needs were based on the 1987 Rail Modernization Study (like the 1991 report). The study identified an annual amount of investment needed to bring rail systems to a state of good repair over a 10-year period. Since the Rail Modernization Study provided costs in 1983 dollars, FTA inflated the amounts into 1991 dollars and included this amount in its needs report.

FTA's 1992 report included cost estimates to comply with recent legal requirements, such as the ADA and the CAA. ADA requires operators to make fixed-route systems accessible to the disabled and to provide equivalent services for individuals unable (due to disabilities) to use fixed-route service. The CAA could require some transit operators to purchase only

⁶Only half of the fleet needs were included because CTA estimated that just over half of all the vehicles were purchased with DOT funds. IHS also provides substantial assistance to these operators.

vehicles that could run on alternative fuels. FTA included costs to comply with ADA, such as installing lifts on buses, on the basis of DOT's ADA Regulatory Impact Assessment. Since CAA requirements for alternative fuels had not been determined, for informational purposes FTA presented costs of converting transit fleets but did not include these costs in its total needs projections.

FTA's 1992 report included costs to maintain the "performance" of the nation's transit systems, defined as continuing the recent ridership growth trends, in its treatment of existing system needs. FTA estimated the additional dollars needed to maintain performance levels in terms of meeting continuing transit growth. During the 1980s transit ridership increased 8 percent, or about 0.8 percent per year. FTA assumed for the purposes of projecting needs that a 0.8 percent increase in the number of vehicles would result in an additional 0.8 percent increase in the number of passenger miles. FTA provided for 0.8 percent annual rail ridership growth by including cost estimates for additional rail cars for existing systems and some additional capital funds for new-start rail projects. However, FTA likely underestimated the costs of new rail service, because it based its projections on forecast costs that were all exceeded by actual costs.

AASHTO's 1988 Report

AASHTO presented several types of needs for maintaining the nation's transit systems, including capital maintenance, human service transportation, and operating assistance. In calculating the costs for these different needs, AASHTO did not utilize any original sources of data for its projections, relying instead on FTA section 15 and APTA survey data.⁷ AASHTO's total projections of need differ significantly from those in both FTA reports because AASHTO assumed that transit needs include more than just capital maintenance costs.

To quantify capital maintenance needs, AASHTO assumed that transit vehicles should be replaced at a rate that would maintain the current average age.⁸ Accordingly, AASHTO calculated the annual needed expenditure to replace the current bus and rail (car) fleet (similar to the methodology used by FTA for bus facilities in its 1991 needs report). The source of urban fleet information (both bus and rail) was 1985 FTA section 15 reports. The rural fleet size was based on DOT's 1986 Directory of Rural and Specialized Transit Operators.

To determine facilities and equipment needs, AASHTO used different sources of information. Unlike FTA, AASHTO did not assume that bus facilities and equipment needs were proportionally related to annual vehicle replacement costs. Instead, AASHTO based its bus facilities estimates on the results of a 1983 APTA survey of transit operators in which respondents reported what they considered to be their future needs. For rail facilities needs, AASHTO used FTA's Rail Modernization Study instead of APTA's survey. Overall, the different data sources used for calculating current capital infrastructure did not result in a large difference between AASHTO's and FTA's estimates of capital maintenance needs (see table 1.1).

Human service transportation needs were assumed to include the replacement of all vehicles for FTA 16(b)(2) operators' fleets. Like FTA, AASHTO relied on CTA's estimate of the nation's section 16(b)(2) operators' fleets. Unlike FTA, AASHTO included replacement costs for the entire fleet, rather than limiting the number of vehicles to those originally purchased with DOT funds. Vehicle replacement costs were calculated by multiplying average vehicle costs by the number of vehicles needed to maintain the current average age of the fleet.

AASHTO included operating assistance needs in its discussion of maintaining existing systems. AASHTO obtained actual operating cost information from the 1987 Transit Fact Book prepared by APTA. To project future operating needs, AASHTO assumed that operating costs would increase at an annual rate of 4.1 percent. AASHTO then presented three

⁷AASHTO acknowledged in its report that the level of accuracy among different data sources varied, since some information was based on surveys while other information came from actual audited filings and field studies.

⁸AASHTO also included the costs to reduce the average vehicle age to one-half the minimum useful life.

different scenarios for operating revenues. The scenarios assumed that (1) current funding (federal, local, and passenger fare revenues) would remain constant; (2) passenger fare revenues would increase the same as the cost of inflation, with federal and local subsidies remaining constant; and (3) passenger fare revenues and local subsidies would increase at 4.1 percent, with federal assistance remaining constant. All three scenarios for future funding availability predicted that there would be insufficient funds to sustain current operations, resulting in cutbacks in existing services should new sources of revenue not be found.

APTA's 1990 Report

APTA's report presented the largest projection of existing transit systems' needs. APTA distinguished needs for passenger vehicle replacement, passenger vehicle rehabilitation, service vehicles, maintenance facilities, and operating (nonmaintenance) facilities. APTA relied primarily on its own data collection for its needs report, although APTA compared its own sources with FTA's information (e.g., section 15 reports).

APTA projected needs on the basis of a survey of its operating members. Survey respondents were asked to report their total "needs," without considering existing or future financial constraints. APTA expanded the actual reported needs to reflect the entire transit industry on the basis of the ratio of respondents to the total U.S. fleet (by vehicle type), not including human service transportation other than that provided by FTA section 9 grantees.⁹ APTA's responding operating membership included primarily urban operators, which represented most of the nation's rail fleet and more than half of the nation's bus fleet.

Assumptions Made to Determine Expanded and Improved System Needs

While all four needs reports generally agreed that the costs to maintain existing transit systems should be included in their projections, they disagreed on how expansion needs should be included, if at all (see table 1.3). FTA's 1991 report did not include any expansion needs in its projections. FTA's 1992 report acknowledged that some unmet highway demand could result in greater demand for transit services and attempted to develop an estimate of the costs to provide these additional services. AASHTO's report included the projected costs of completing transit projects already approved by FTA for planning. APTA's report presented the most robust projection of future needs by including costs for all projects that transit operators stated were needed to meet their communities' transportation goals.

FTA's 1991 Report

FTA's 1991 report did not quantify expansion needs and stated that building new transit systems goes beyond maintaining the existing transit infrastructure. The report goes on to indicate that several new projects are under development, and several appear to have the potential to be cost-effective. However, the report does not quantify the costs of these projects and does not include them in its transit needs estimate.

⁹Limited human service by section 16(b)(2) grantees was included if these grantees were APTA members, although only a small number of these operators reported to APTA.

Table 1.3: Assumptions Made to Determine System Expansion and Improvement Needs

	FTA—1991 report	FTA—1992 report	AASHTO—1988 report	APTA—1990 report
Bus systems:				
Vehicle replacement	NA ^a	Reduction of avg. bus age to one-half minimum useful life	Included in existing system maintenance needs	1990 APTA survey of transit operators polled operator needs
Vehicle rehab	NA	NA	NA	1990 APTA survey of transit operators
Service vehicles	NA	NA	NA	1990 APTA survey of transit operators
Maint. facilities	NA	Ratio of vehicle grants (1:1)	NA	1990 APTA survey of transit operators
Operating facilities	NA	Included in maint. facilities above	NA	1990 APTA survey of transit operators
Service expansion	NA	Added bus capacity to serve increased passenger trips (10 percent of unmet highway demand)	Bus-related new-start projects, already receiving FTA funds (FTA's pipeline)	Bus-related new-start projects, (FTA's pipeline) or 1990 APTA survey of operating members

	FTA—1991 report	FTA—1992 report	AASHTO—1988 report	APTA—1990 report
Non-DOT-funded systems	NA	NA	NA	1990 APTA survey of operating members
Rail systems:				
Vehicle replacement	NA	1987 Rail Modernization Study (RMS)	Included in existing system maintenance needs	1990 APTA survey of transit operators polled operator needs
Vehicle rehab	NA	1987 (RMS)	NA	1990 APTA survey of transit operators
Service vehicles	NA	1987 (RMS)	NA	1990 APTA survey of transit operators
Maint facilities	NA	1987 (RMS) plus FTA estimates for improving condition of older rail facilities	1987 (RMS)	1990 APTA survey of transit operators
Operating facilities	NA	Included in maint. facilities above	1987 (RMS)	1990 APTA survey of transit operators
Service expansion	NA	NA ^b	Rail-related new-start projects, already receiving FTA funds (FTA's pipeline)	Rail related new-start projects, (FTA's pipeline) or 1990 APTA survey of operating members
Human service systems:				
Vehicle replacement	NA	NA	NA	NA
Vehicle rehab	NA	NA	NA	NA
Service vehicles	NA	NA	NA	NA
Maint facilities	NA	NA	NA	NA
Operating facilities	NA	NA	NA	NA
New ADA-required services	Regulations did not exist when projection was made	Compliance costs taken from ADA regulatory impact assessment ^c	Regulations did not exist when projection was made	Regulations did not exist when projection was made
Service expansion	NA	NA	Statement that growing elderly population could increase needs	NA
Non-DOT-funded systems	NA	NA	NA	NA

^aNA indicates that this element was not addressed

^bFTA calculated that 10 percent of the unmet demand for highway lane miles could result in increased transit ridership. For needs projection purposes, FTA quantified the costs of providing this increased service via buses, although it acknowledged that some of the actual increase in ridership would occur on rail systems

^cDOT prepared a regulatory impact assessment to determine the cost to comply with ADA

FTA's 1992 Report

To demonstrate the cost to improve the condition of the nation's bus systems, in 1992 FTA included costs to reduce the average age of the bus fleet and bus facilities to half their minimum useful life, which requires replacing vehicles faster than had been occurring. Using information on the average age of the urban fleet from its section 15 reports, FTA calculated the accelerated replacement costs that would be required to achieve the optimal vehicle age (half of the minimum useful life) in the urban fleet over a 10-year investment period. Unlike urban fleet ages, no data were readily available on the age or condition of urban bus maintenance and nonmaintenance facilities. Therefore, FTA assumed that the costs of eliminating the backlog of deferred facilities needs would equal annual vehicle replacement needs (similar to the assumption made in the "maintain" scenario above). As noted earlier, information on the average age of the rural and specialized fleets and facilities was not available; thus, costs to eliminate a backlog of needs were not included in FTA's 1992 report.

To improve the condition of the nation's rail systems, FTA included costs to restore rail cars and facilities to good condition. As noted earlier, the 1987 Rail Modernization Study identified annual expenditures (in 1983 dollars) that were needed to eliminate the backlog of deferred maintenance and restore rail systems to "good" condition over a 10-year period. FTA inflated this amount into 1991 dollars and included it in the report. FTA acknowledged that current standards have changed significantly since the old systems were built. Consequently, FTA estimated the annual costs to bring these very old systems to current standards over a 20-year time period and included this amount in its needs assessment.

To improve the performance of the nation's transit systems, FTA included costs to provide added transit capacity to meet potential future demand

for services. The source for increased future demand stems from the Federal Highway Administration's 1991 highway needs report, which forecasted that demand for about 34,000 lane-miles of highway capacity could be replaced by aggressive system and demand management. FTA assumed that 10 percent of the passenger miles of travel that would have been served by these lane-miles could potentially result in additional transit ridership. FTA calculated the costs to meet all of this potential ridership through expanded bus services, on the basis of the current reported average cost per bus passenger mile. FTA acknowledged that it is unlikely that all new service would be provided by buses and that rail costs exceed those for buses, but stated that bus capital costs could serve as an estimated amount for increased transit service. In addition, by using current average costs rather than marginal costs (the incremental cost to provide new services), FTA potentially understated the costs of this ridership growth. The marginal costs to increase ridership are likely to be higher than current average costs, because operating expenses increase (because efficiencies decline) as service is extended into less densely populated areas.

AASHTO's 1988 Report

AASHTO included the costs of constructing new-start projects in its discussion of transit needs. AASHTO included those transit projects that were in FTA's "pipeline"—projects that had been approved by FTA for preliminary planning and analysis, final design, and/or construction as of July 1987. In addition, AASHTO included costs to complete a list of high-occupancy vehicle and busway projects over the 1988 through 1992 time period.¹⁰

APTA's 1990 Report

APTA's report presented the largest estimate for expanded transit system service needs. APTA based this estimate on its 1990 survey of operating members' needs. APTA's survey asked transit operators to report all projects that were needed "to meet their communities' transportation goals." APTA officials told us that the resulting projections represented needs without regard to financial constraints. While it is true that APTA presented the greatest needs estimate, we were told by state and local officials we visited that they did not provide APTA with an unconstrained list of projects. Transit operators stated that they did not provide an unconstrained list of needs since their planning efforts reflect financial constraints. Nevertheless, APTA's projection was the largest of the four projections studied.

Appendix II

Objectives, Scope, and Methodology

The objectives of our study were to identify (1) why FTA's, AASHTO's, and APTA's transit needs projections varied, (2) what other factors could affect the accuracy of these transit needs projections, and (3) any opportunities for improving future transit needs projections. We made our review in response to section 3028 (a) of the Intermodal Surface Transportation Efficiency Act of 1991 (P.L. 102-240), which requires the General Accounting Office to study the extent to which current transit needs are adequately addressed and estimate the future transit needs of the nation.

To fulfill our three objectives, we (1) reviewed the individual needs projections and other relevant transportation literature; (2) interviewed officials at FTA (headquarters and one regional office), AASHTO, and APTA; and (3) interviewed state and local transportation officials in Massachusetts, New York, New Jersey, North Carolina, South Carolina, Alabama, Florida, and California. We chose these areas to provide variation by geographic region and types of mass transit available.

¹⁰The projections were based on an APTA survey of costs to complete proposed HOV and busway projects from 1988 through 1992.

In order to compare and contrast the different needs projections, we calculated an annual amount by major need category for each transit need projection. PTA's two needs reports presented annual amounts; therefore, no change was required. However, AASHTO's and APTA's needs projections present total dollar amounts for a specific multiyear time period. For these two projections, we divided the total amount by the number of years to result in an average annual need amount, except as otherwise noted. Since all four needs projections were prepared at different times and reported in different years' dollars, we inflated all projections into same-year 1991 dollars to allow direct comparisons and to eliminate differences between the projections due to inflation.

Our review was conducted from April 1992 to November 1992 in accordance with generally accepted government auditing standards.

Appendix III

Major Contributors to This Report

Resources,
Community, and
Economic
Development Division,
Washington, D.C.

John H. Anderson, Jr., Associate Director
Gary L. Jones, Assistant Director
Laurie S. Zeitlin, Assignment Manager
Kurt K. Heidtman, Evaluator-in-Charge

STATEMENT OF JACK GILSTRAP

Senator LAUTENBERG. Mr. Gilstrap.

Mr. GILSTRAP. Thank you, Mr. Chairman.

My name is Jack Gilstrap. I am executive vice president of the American Public Transit Association [APTA].

At the outset, let me state that APTA fully supports the President's short-term economic stimulus proposal as presented by the President. As you indicated, it would provide \$752 million in much needed supplemental transit funding in the current fiscal year and would be a positive first step toward our No. 1 priority, full funding of ISTEA for mass transit.

Looking to the longer term, our association did survey our members, as Ken has indicated, to determine their capital needs through fiscal year 1997. The capital requirements total approximately \$90 billion, or \$15 billion annually over the next 6 years.

We have submitted for the record a copy of our study presenting these needs in detail, Mr. Chairman.

Our APTA study shows that an investment at this level is needed to rehabilitate our old, worn out systems, build new ones, and replace overage buses, vans, and railcars.

Now I must tell you that because of the lack of funding, bus purchases in the United States are down over 50 percent the past 2 years. This is having a terrible effect on our bus manufacturing industry, which is operating today at only 25 percent capacity. Another important consideration, which has already been mentioned, is compliance with national mandates, which carry an enormous price tag and seriously complicate the overall funding picture.

DOT estimates the national cost to comply with ADA ranges from \$844 million to \$1.3 billion a year. This is the cost to put wheelchair lifts on all new buses, to make key rail stations, transit centers, and railcars accessible, as well as to develop paratransit systems, all of which are required under ADA. In addition, the Clean Air Act of 1990 requires reduced vehicle emissions. The cost to install exhaust cleaners and upgrade fuel is estimated to be \$110 million a year.

In short, the Nation's transit operators are in dire need of additional capital funding, even beyond the authorized levels of ISTEA. The principal reason why is that, in addition to the costly new mandates, public transit has suffered a 10-year decline in Federal transit funding, over 50 percent when adjusted for inflation.

These cuts, Mr. Chairman, would have been even worse except for the heroic efforts of key members, like yourself and your committee. But the fact is 10 years ago, transit received \$1 for every \$2 highways received, and today it is \$1 for transit for every \$4.50 for highways.

Well, that is history. What about the future?

Although President Clinton's proposal does call for increased transit aid in the out-years, it calls for full funding of highways but not for mass transit. We are deeply concerned about this and want to work with you and the administration on this issue.

The administration also is calling for an extension after 1995 of the 2.5-cent gas tax that went to deficit reduction, with the revenues to be deposited exclusively in the highway account of the transit fund, none for mass transit. Gas tax increases in 1982 and 1987 included a decided portion of revenues for transit. Excluding transit from future increases in the gas tax would break with past precedent and would have devastating consequences for mass transit. Furthermore, excluding transit would clearly be counter to the spirit of ISTEA, which was so carefully crafted by Congress to provide a balance and a level playing field among transportation modes.

I conclude, Mr. Chairman, by again expressing our full support for the administration's economic stimulus package and for full funding of ISTEA. I commend you, Mr. Chairman, and your committee for holding this hearing to focus on transit's long-range funding needs. Thank you.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much. Your full statement will be made part of the record.

[The statement follows:]

STATEMENT OF JACK R. GILSTRAP

INTRODUCTION

Mr. Chairman and Subcommittee Members, thank you for giving the American Public Transit Association this chance to testify on the need for increased transit investment, and on the Federal role in meeting those needs.

I am Jack R. Gilstrap, Executive Vice-President of the American Public Transit Association (APTA). APTA represents the transit systems that provide about 97 percent of our nation's mass transit services. We also represent many of the manufacturers and suppliers who provide the goods and services to the industry.

APTA SUPPORTS THE ECONOMIC STIMULUS PROPOSAL

We endorse the President's call for \$752 million in additional fiscal year 1993 capital funding for the Federal Transit Administration (FTA). This includes \$482 million for distribution to states and metropolitan areas through the Section 9, 18, and 16 formula programs, and a \$270 million increase in the Section 3 Bus Discretionary program.

This is a very positive first step toward full funding of the federal transit program authorized by the Intermodal Surface Transportation Efficiency Act (ISTEA). The approved fiscal year 1993 ISTEA funding of \$3.6 billion was far short of the \$5.2 billion authorized, but the \$752 million supplemental goes far toward bridging the gap. APTA believes that transit funding should, at a minimum, be set at ISTEA levels in fiscal year 1994, and we look forward to working with the Administration and Congress to reach that goal.

The transit industry recognizes that the purpose of these funding increases is to stimulate the economy by moving forward with projects that will quickly create jobs. In fact, both the \$482 million formula program increase and the \$270 million bus capital increase are ideally suited to fulfill this objective of the President's economic stimulus program. We will now provide more detailed information on our capacity to create jobs and provide a quick boost to the economy. We can also play a critical role in providing people with transportation to and from new job opportunities.

FORMULA PROGRAM INCREASES

The \$482 million formula funding increase is especially welcome because it addresses the fact that formula assistance was cut this year by \$280 million below the previous year's level. The Section 9 Urban Formula Program would receive \$438.5 million in additional funds, the Section 18 Non-Urban Formula Program would receive \$26.4 million, and the Section 16 Elderly/Handicapped Formula Program would receive \$17.4 million. These increases not only restore these programs to their fiscal year 1992 funding levels but bring them closer to the fiscal year 1993 authorized level.

The formula program increases will reach all parts of the country where they can be spent on ready-to-go projects. Can the transit industry put these funds to good use? The answer is a resounding yes. A partial survey of APTA members has identified 649 ready-to-go projects from 98 transit agencies in 31 states, the District of Columbia, and Puerto Rico with a federal funding component of \$5.19 billion. These projects would support 310,000 jobs. We are continuing to compile additional information on ready-to-go projects from transit agencies across the nation. A copy of the latest available list of these projects is included with this testimony.

In addition to bus purchases, which will be discussed in greater detail below, projects range from creation of new park-and-ride lots and high-occupancy vehicle lanes to the upgrading of communications equipment and computer systems to the addition of facilities needed to comply with federal accessibility, clean air, and energy conservation mandates. These projects can all be quickly started, they will create thousands of jobs, and they are all essential to address unmet needs and improve the efficiency of the nation's transit systems.

It is important to note that in today's market we in transit can obtain greater value for less money than we could have in the recent past, or probably will be able to in the future.

We view this proposal as a major statement by President Clinton about his intention to rebuild the nation's cities and considerably enhance the quality of life for inner city poor and other transit dependent individuals. We believe that increased transit investment is essential to meeting the nation's environmental and energy conservation goals. This investment in transit's capital assets will help to serve tens of millions of people today, tomorrow, and for generations to come.

BUS CAPITAL INCREASES

The \$270 million increase in bus capital funding is ideally suited to put people back to work, quickly, in a critical segment of the domestic motor vehicle industry. The U.S. bus manufacturing industry and its suppliers have factories in many communities around the country. The industry is now operating at only 25 percent of its capacity, so it is in a very strong position to speed up production in short order. With these funds, we can replace obsolete buses and speed up compliance with Americans with Disabilities Act (ADA) and Clean Air Act requirements for clean-operating buses that are accessible to people with disabilities.

Calendar Year 1992 is the third consecutive year of unprecedented, severely depressed demand for new standard size transit buses. The 1980-89 average annual

volume was 3,252 units, while the 1990-92 average annual volume was less than half that amount, at 1,560 units. The bus manufacturing industry's capacity is 6,240 units per year, so the 1990-92 capacity utilization is only 25 percent.

This situation, clearly, is tailor-made for an immediate stimulus. There is more than enough idle capacity to put additional funds directly into production. In the longer run, the health of this U.S. industry will depend on continued commitments for increased investments. Manufacturers will not add people to their workforces and invest in the required plant and equipment if they do not believe there is a long-term market for their products.

If the ability to supply additional buses is there, then so is the demand for new buses. The transit industry, nationwide, operates some 55,000 standard size buses. An estimated 12,000, 22 percent of the total, exceed the 12-year age at which the FTA recommends replacement. Some 40 percent of small buses and vans in use exceed age for recommended replacement.

In the partial survey of transit systems mentioned above, bus and van needs account for \$833 million worth of orders with the potential to create 35,640 jobs in fiscal year 1993. These would be full-time jobs in the private sector and not the result of short-term make-work programs. In other words, transit systems are ready to place bus orders with U.S. manufacturing firms worth more than three times the dollar value of the proposed bus capital funding increase.

This expanded bus procurement will have other benefits. New buses must be accessible to people with disabilities as required by the Americans with Disabilities Act, and in many cases they will replace older ones that are not lift-equipped. So any acceleration of bus purchases will speed up the process of complying with the ADA.

New transit buses can help reduce energy use and air pollution—a full bus is six times more energy efficient than a single occupant automobile, and transit buses are responsible for just 0.3 percent of transportation energy consumption compared to 72.1 percent for automobiles and trucks. Nonetheless, the \$270 million supplemental investment program will hasten the replacement of older buses, which are the least fuel efficient, least reliable, and most expensive to maintain.

Like the \$482 million increase in formula capital funds, the \$270 million increase in bus discretionary funds is an ideal means of priming the economy.

LONG-TERM INVESTMENT NEEDS

As we strive to meet this short-term responsibility, we want to work with Congress and the Administration for full funding of the ISTEA transit program in fiscal year 1994. That is the critical next step in implementing a program of nationwide transit investments that will sustain prosperity, enhance mobility, improve productivity, and meet the clean air, energy conservation, and other goals that we all support.

ISTEA created a carefully balanced program designed to meet the transit needs of urban, suburban, and rural areas in every region of the country. Full funding of each individual program at its authorized level is essential if the transit industry is to plan effectively for the next century.

I must note that even at the levels authorized in the ISTEA, transit funding is still well below 1981 appropriations levels in real terms. We recognize the pressure to reduce the deficit, but we also believe that we must make the investments required to meet transportation needs of the twenty-first century.

Ease of movement is vital for every American and for the businesses and industries that create the nation's wealth. In many ways, our ability to travel is a measure of our quality of life and the competitiveness of our economy.

Today, our ease of movement is severely threatened. Major cities are regularly gridlocked, resulting in waste of energy and serious air quality damage. Suburbs are clogged throughout the day with traffic. The increasing isolation of rural residents is all too commonplace.

Inadequate public investment in transportation lies at the heart of the problem. In particular, we have failed to plan and invest adequately in the most fundamental mode of transportation: public transit.

Between 1992 and 1997, transit will require \$90.8 billion in capital investment. Transit systems will need 63,800 new vehicles and another 29,930 rehabilitated buses and rail cars.

The backlog of transit investment needs continues to mount for two reasons: 1) the ten-year decline in federal funding; and 2) the increasing demand for transit service. Because of inadequate funding, essential reinvestment in existing transit systems is not being made, and service improvements are being slowed or deferred. In some areas, service reductions are becoming commonplace.

Equally important, efforts to add new transit capacity have been stymied by lack of funds. The following needs demonstrate the size of the funding commitment that should be made to public transit through 1997.

FIXED-GUIDEWAY NEW STARTS AND EXTENSIONS: \$30.1 BILLION

Transit's greatest advantage lies in high-capacity services operating on exclusive rights-of-way, including commuter rail, light rail (also known as modern trolleys), subway systems and exclusive bus and transitways. Eight major urban centers with a long history of rail transit continue to benefit from this investment and seek to expand or modernize their systems. Another ten urban areas built fixed-guideway transit in the past 15 years. All seek to expand them, forty-eight cities in 29 states plan new or expanded fixed-guideway systems, either rail lines or busways. These include 1,770 miles of rights-of-way, 2,400 rail cars, and 830 stations.

Capital investment needs for new fixed-guideway (rail and bus) transit services between 1992 and 1997 totals \$30.1 billion including \$3.9 billion for the necessary vehicles.

These needs are broken down as follows: 1) \$1.4 billion for busways and high occupancy vehicle (HOV) lanes; 2) \$3.5 billion for commuter rail; 3) \$9.7 billion for heavy rail; 4) \$13.5 billion for light rail; and, 5) \$2.0 billion for related capital facilities.

OTHER CAPITAL INVESTMENT NEEDS: \$17.7 BILLION

To ensure top quality service, an additional \$17.7 billion in capital investment is needed. These dollars are needed to purchase a wide range of capital items including service vehicles, computers and systems for fare collection and communications.

SUPPORT OF THE CAPITAL INVESTMENT: \$100 BILLION FOR MAINTENANCE AND OPERATIONS

Capital Investment by itself is not enough to ensure efficient effective service. Day-to-day maintenance and operations require a stable and reliable major financial commitment.

The Federal Government, and State and localities, have already made a huge investment in the transit infrastructure. It is important that we properly maintain that investment, which includes everything from rail systems to buses and garages. If we are to make increased investment in facilities we must also have the funds to operate the additional buses and trains so the benefits of increased transit ridership can be realized.

Today, maintenance and operations of the nation's transit systems require an investment of \$15.7 billion per year, of which seven percent is from the federal government. Operating today's systems through 1997 will cost nearly \$100 billion in current dollars. As transit systems offer both expanded and new services to meet new passenger demand, increased support for operations, as well as capital, will be required.

NEW BUS FACILITIES: \$5.6 BILLION

As transit systems continue to provide current services as well as offer new ones, a variety of new bus facilities will be needed.

Through 1997, \$5.6 billion is needed to build the following bus facilities: 1) 280 terminal/transfer centers; 2) 130 maintenance and repair shops; 3) 95 storage facilities or garages; 4) 45 administrative offices; 5) 590 parking structures for transit passengers.

MODERNIZATION OF EXISTING BUS AND RAIL FACILITIES: \$17.1 BILLION

Comfortable, convenient and efficient transit service requires a wide range of support facilities and up-to-date equipment.

Through 1997, \$17.1 billion is needed to modernize: 1) 450 maintenance and other facilities; 2) 880 rail and bus stations; 3) 1,230 miles of rights-of-way

NEW VEHICLE NEEDS FOR EXISTING SERVICES: \$16.8 BILLION

Through 1997, transit authorities will require \$16.8 billion in new vehicle investment for existing services plus \$4.9 billion for vehicles for new-fixed guideway routes and extensions; a total of \$20.7 billion for new vehicles.

Total New Vehicle Requirements 1992-1997

Type	Number
Bus	49,610
Van	9,130
Heavy Rail	1,940
Light Rail	1,500
Commuter Rail	1,220
Other	400
Total	63,800

Buses are truly the workhorse of public transit. They carry 64 percent of the nation's transit passengers and are responsible for 51 percent of passenger miles. Through 1997, new bus needs total \$12 billion.

Rail transit, defined as light, heavy, or commuter, carries passengers longer distances. Rail accounts for 36 percent of all transit trips and 49 percent of total passenger miles. The percentage of passenger miles on rail is increasing every year. Rail transit carries more than 10 million passengers an average of 65 million miles each weekday. Rail transit is probably the mode that is least damaging to the environment and the most energy-efficient.

Through 1997, new rail vehicle needs for existing service are \$4.8 billion and \$3.9 billion for new fixed guideway systems and extensions.

TRANSIT VEHICLE REHABILITATION: \$3.5 BILLION

Rehabilitation is a cost-effective way to extend the life of transit vehicles. A sound rehabilitation program can add six years to the 12 year useful life of a bus and 15 years to the 30 year average life of a rail car.

Through 1997, \$3.5 billion is required to rehabilitate: 1) 18,570 buses; 2) 11,360 rail cars (heavy, light and commuter).

MEETING THE COST OF FEDERAL MANDATES

Over the past several years, Congress has enacted several comprehensive pieces of legislation that are imposing great costs on the transit industry. Both the Americans with Disabilities Act (ADA) and the Clean Air Act Amendments of 1990 impose mandates without providing the financing to carry them out.

The transit industry supports these laws and the policies they represent because the ADA will increase mobility for all people with disabilities and the Clean Air Act Amendments will help reduce air pollution and conserve energy. However, full funding of the ISTEA is necessary to properly implement the mandates established in both of these laws.

For example, in the provision of services to people with disabilities, there is a growing and alarming trend toward health and human service agencies discontinuing their transportation services for their clients and "dumping" them on the local public transit system who must provide service under the ADA. This practice adds a tremendous burden to an already challenging financial struggle.

The U.S. Department of Transportation estimates the national, annual cost to comply with the Americans with Disabilities Act of 1990 (ADA) ranges from \$844 million to \$1.3 billion. The costs covers proposed lifts on buses, making key rail stations, transit centers and rail cars accessible as well as developing paratransit systems.

The Clean Air Act of 1990 requires reduced vehicle emissions. The annual cost to install exhaust cleaners and upgrade fuel is \$110 million. One nationwide survey of transit systems found that installation of particulate traps on the U.S. bus fleet would cost an estimated \$522 million.

We are hopeful that Congress and the new Administration recognize the value of helping the industry with the costs of federally mandated operating and capital increases resulting from federal mandates. If transit operators are forced to raise fares and reduce service to pay for federal mandates, there will be a corresponding reduction in transit ridership. This will undercut transit's ability to fulfill its role in achieving national goals related to the environment, congestion, mobility, energy conservation, and the economy. For every 10 percent increase in fares there is a 4 percent reduction in ridership.

TRANSIT FUNDING SOURCE JEOPARDIZED

APTA has heard that President Clinton's long-term investment program calls for extension of the 2.5 cents per gallon gasoline tax currently scheduled to expire in

1995, with the revenues to be deposited exclusively in the Highway Account of the Highway Trust Fund.

The entire transit industry firmly believes that a portion of any increase in the gas tax should continue to be dedicated to the mass Transit Account of the Highway Trust Fund. Gas tax increases for surface transportation purposes in 1982 and 1987 included a dedicated portion of revenues for transit. Breaking with past precedents and excluding transit from future increases in the gas tax would have devastating consequences for our industry. It may also send the wrong signal to those who feel that increased transit use can reduce pollution and energy consumption.

Annual transit capital needs far exceed available resources, and we strongly believe that the proceeds of any future gas tax increase be distributed equitably among surface transportation modes. Transit funding declined from \$4.6 billion in 1981 to \$3.8 billion in the current year, while funding for Title 23 highway programs went from \$9.1 billion to over \$18 billion. We urge that some of the revenues from future gas tax increases be used to provide a stable, reliable source of funding for the federal transit program.

CONCLUSION

Thank you for this opportunity to testify on transit's needs. I want to again express our support for the economic stimulus proposal and for full funding of ISTEA in fiscal year 1994 and beyond.

As pollution grows, highway traffic is at a standstill, and energy consumption increases, we believe we must invest more in public transit: a rational solution to each of these national concerns. APTA looks forward to working with this Committee to meet our nation's infrastructure needs and prepare us for the 21st Century.

We also feel strongly that funding for all surface transportation modes be increased in an equitable manner. Past inequities between highway and transit programs must be reversed so that the people of this nation have real transportation alternatives. We urge Congress and the Administration to adhere to the funding priorities established in the ISTEA at whatever funding level Congress establishes in Appropriations Acts.

READY-TO-GO CAPITAL PROJECTS

Summary of a Survey of Transit System Members of the American Public Transit Association

The American Public Transit Association (APTA) was requested by the U.S. Conference of Mayors (USCM) to support their effort to answer a request by Federico Peña, U.S. Secretary of Transportation, and Henry Cisneros, U.S. Secretary of Housing and Urban Development, to gather information concerning "ready-to-go" transportation and community development projects from USCM members. APTA distributed a revised format of the USCM survey to its transit agency members by facsimile on February 2, 1993. This summary describes results received as of February 7, 1993.

According to the cover memorandum of the USCM survey dated January 27, 1993, the Secretaries "requested mayors to provide examples of ready-to-go projects in the transportation and CDBG [community development block grant] areas, where federal assistance (when provided) would be obligated within a maximum of 120 days and completion of the ready-to-go project would be finished within the 1993 calendar year."

The results of the APTA survey as of February 5, 1993 were provided to the USCM in order to help meet the Secretaries' request. The results of this survey as of February 8, 1993 were also forwarded to all members of the U.S. Senate and the U.S. House of Representatives.

Results

A total of 96 responses have been received. This report will be updated to include later submissions, which we expect to receive. The 98 respondents reported 649 transit projects. These projects would spend a total of \$5.2 billion in federal funds and create 310,000 direct and indirect jobs through the life of the projects.

In addition to transit projects, other surface transportation projects for which APTA member agencies are responsible were included in the responses. These projects add an additional \$1.3 billion needed for ready-to-go projects bringing the total to \$6.5 billion reported for all types of ready-to-go projects by responding agencies.

Table 1 summarizes the number and value of projects reported stratified by the amount of time they require for obligation. Table 2, listing each project in alphabetical order by state/city, follows the summary. Some of the responses are edited as described in the section "Description of Survey Parameters," that follows, for conformity of presentation.

Table 1: Ready-To-Go Projects by Obligation Period

Time Required for Obligation	Number of Projects	Federal Dollars Needed (Millions)	Total Jobs Created (as reported)
30 Days or Fewer	93	\$ 584.7	37,252
31 to 60 Days	120	\$ 298.8	19,549
61 to 90 Days	129	\$ 755.3	41,400
91 to 120 Days	188	\$ 1,823.9	125,121
More than 120 Days	55	\$ 919.0	43,300
Uncertain/Not Specified	64	\$ 808.7	44,014
Total Transit	649	\$ 5,190.4	310,636
Road and Other	23	\$ 1,304.3	76,103
Total Reported	672	\$ 6,494.6	386,739

Comparison to Prior Surveys

These responses are a sample that illustrate the types of projects that transit agencies could go forward with if funding were available. The total amount of federal funds that transit agencies would be able to spend in Fiscal Year 1993, beyond the amount of funds available, was determined by a survey conducted by APTA in November and December of 1992 that resulted in a report titled *Survey of Ability to Spend Federal Transit Funds During Fiscal Year 1993*. That report found that transit agencies could spend \$7 billion dollars in additional federal funds during Fiscal Year 1993. Spending was defined as obligating capital funds or actually spending operating funds. The amount included an additional \$5.6 billion in capital funds and \$1.4 billion in operating funds. The amount is a projection for the entire U.S. transit industry. The results of the *Ready-To-Go Capital Projects* survey indicate that transit agencies can obligate at least the \$5.6 billion capital amount previously projected and possibly an even greater amount.

The ability to spend an additional total of \$7 billion was estimated from detailed statistical analysis of responses from 113 APTA member transit agencies. The agencies sampled for that analysis operate over 69 percent of all transit vehicles operated by APTA members.

Description of Survey Parameters

Investment in transit infrastructure includes not only rights-of-way and buildings, but also vehicles, maintenance equipment, communications equipment, and other capital items. Only the information in the original facsimile (see Appendix One) was available to respondents unless they contacted APTA by telephone for additional information. Respondents who requested additional information were advised to consider infrastructure to be any project that would qualify for capital assistance under the Federal Transit Act. Any separately identified portion of a project directed toward operations was deleted from survey responses. When the same project is reported by both a local and a regional agency, the duplicated amount is not included in Table 1 summation but all reported amounts are included in individual agency reports on Table 2.

When respondents identified a "federal share" amount for project cost this amount is listed on Table 2. If only a total amount without a federal share was reported, the total amount is listed on Table 2. The requirement for local funding participation in an administration supplemental program was not known when this survey was conducted. Current funding sources used by transit agencies require from 20 percent down to no local match, with a waiver applicable to the requirement in some cases.

Many respondents were unable to estimate the job impact of their projects. If the 1993 job impact was left blank on a response, APTA calculated a number for that response. The numbers calculated by APTA are indicated by an asterisk (*) on Table 2. Total direct and indirect jobs from capital projects are estimated at a rate of 53.3 jobs per one million project dollars.

When obligation time periods were not exact, the longest reported time-period was used in summarizing for Table 1. Some projects with an uncertain time period for obligation could be obligated within 30 days or 60 days.

Productive Capacity for Reported Bus Demand

One of the most frequently reported needs, in terms of number of respondents is for additional or replacement buses and other road vehicles. Current bus manufacturing capacity in the U.S. is estimated at 6,200 standard-size (35 and 40 foot) units per year. Production capacity for small buses and vans is not estimated, but is known to be large. Only about 25 percent of the standard-size bus capacity is currently being used. Manufacturers report that full capacity production could be reached after approximately four months but employment benefits of increased orders would be felt quickly both at the manufacturing site and at the locations of a large number of component and subsystem suppliers. A substantial "ramping-up" of standard-size bus production can be accomplished during Calendar Year 1993, but full production for the remainder of 1993 requires early approval of an infrastructure or economic stimulus program.

Mechanism for Distribution of Funds

It is important to note that the Fiscal Year 1993 transit appropriation of \$3.8 billion substantially underfunded the transit program when compared to the fully authorized level of \$5.2 billion. More than \$1.1 billion of this shortfall occurred in the formula program, which is distributed to each urbanized area as well as small urban and rural areas through sections 9, 18, and 16(b) of the Federal Transit Act. On average, this actually produced a 14 percent cut in each recipient's formula funding in Fiscal Year 1993 compared to Fiscal Year 1992. These funds are normally used for routine capital replacement needs.

Given the response APTA has received to this and other surveys, we believe that the section 9, 18, and 16(b) formulas represent a fair and equitable method of distributing short-term economic stimulus funds provided through a Fiscal Year 1993 supplemental appropriation. A supplemental appropriation would normally be apportioned to or be available for grant requests from all transit agencies, not just agencies reporting projects in this or other surveys. We believe virtually every recipient of these funds would be able to utilize them in a reasonable period of time with an emphasis on job creation projects.

Table 2: Survey of Ready-To-Go Projects

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential Jobs (b)	Jobs Beyond 1993
Metro Area Express	Birmingham	AL	Twenty-nine 40 foot buses meeting ADA/CAA	6,390,000	120	341 *	...
Metro Area Express	Birmingham	AL	Retrofit maintenance facility	1,500,000	120	80 *	...
Metro Area Express	Birmingham	AL	Fifteen wheelchair accessible vehicles	715,560	90	38 *	...
Metro Area Express	Birmingham	AL	Downtown transit transfer center	5,000,000	120	267 *	...
Metro Area Express	Birmingham	AL	TOTAL OF ALL PROJECTS	13,605,560	90/120	725 *	...
Central Arkansas Transit Auth.	Little Rock	AR	Downtown transfer center	2,000,000	90	85	8
Central Arkansas Transit Auth.	Little Rock	AR	Fifty-seven buses CAA/ADA compatible	10,500,000	90	210	12
Central Arkansas Transit Auth.	Little Rock	AR	TOTAL OF ALL PROJECTS	12,500,000	90	295	20
Glendale Transit	Glendale	AZ	Expand and upgrade CNG fueling station	323,093	60	3	0
Glendale Transit	Glendale	AZ	TOTAL OF ALL PROJECTS	323,093	60	3	0
Phoenix Public Transit Department	Phoenix	AZ	Forty 40 foot buses	8,000,000	230	426 *	...
Phoenix Public Transit Department	Phoenix	AZ	Thirteen 35 foot buses	2,288,000	230	122 *	...
Phoenix Public Transit Department	Phoenix	AZ	Office equipment and furniture	16,000	230	1 *	...
Phoenix Public Transit Department	Phoenix	AZ	Support vehicles	100,000	230	5 *	...
Phoenix Public Transit Department	Phoenix	AZ	Radios for support vehicles	16,000	230	1 *	...
Phoenix Public Transit Department	Phoenix	AZ	Miscellaneous tools and machinery	74,400	230	4 *	...
Phoenix Public Transit Department	Phoenix	AZ	Associated capital maintenance	200,000	230	11 *	...
Phoenix Public Transit Department	Phoenix	AZ	Design and construct park and ride lot	1,600,000	230	85 *	...
Phoenix Public Transit Department	Phoenix	AZ	Install upgrades on maintenance facility	320,000	230	17 *	...
Phoenix Public Transit Department	Phoenix	AZ	Twenty 25 foot buses	904,000	230	48 *	...
Phoenix Public Transit Department	Phoenix	AZ	TOTAL OF ALL PROJECTS	13,518,400	230	721 *	...
Antelope Valley Transit Authority	Alhambra	CA	20 additional over-the-road coaches	5,800,000	90	349	40
Antelope Valley Transit Authority	Alhambra	CA	500 all weather bus stop signs	65,000	70	15	5
Antelope Valley Transit Authority	Alhambra	CA	400 regular and 5 major bus shelters	4,000,000	100	238	10
Antelope Valley Transit Authority	Alhambra	CA	Dial-a-ride computerized dispatch system	120,000	60	11	5
Antelope Valley Transit Authority	Alhambra	CA	On-board security cameras	128,000	70	12	5
Antelope Valley Transit Authority	Alhambra	CA	Park-and-ride lot security	280,000	30	12	12
Antelope Valley Transit Authority	Alhambra	CA	TOTAL OF ALL PROJECTS	10,393,000	30/100	638	77

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential 1993 Jobs (b)	Jobs Beyond 1993
Golden Empire Transit District	Bakersfield	CA	South West transfer facility	500,000	60	50	2
Golden Empire Transit District	Bakersfield	CA	Network computer system & software conversion	250,000	90	15	2
Golden Empire Transit District	Bakersfield	CA	TOTAL OF ALL PROJECTS	750,000	60/90	65	4
Fresno Area Express	Fresno	CA	Seventeen ADA/CAA equipped 40 foot buses	3,665,455	Immediate	195 *	...
Fresno Area Express	Fresno	CA	TOTAL OF ALL PROJECTS	3,665,455	Immediate	195 *	...
Gardena Municipal Bus Lines	Gardena	CA	Purchase 3 standard size transit coaches	600,000	90	32	...
Gardena Municipal Bus Lines	Gardena	CA	Construction training/administrative offices	468,000	90	12	1
Gardena Municipal Bus Lines	Gardena	CA	Upgrade bus stops and zones	89,000	90	3	1
Gardena Municipal Bus Lines	Gardena	CA	Upgrade vehicle communications	361,500	90	10	1
Gardena Municipal Bus Lines	Gardena	CA	Replace fuel storage tanks	400,000	90	7	1
Gardena Municipal Bus Lines	Gardena	CA	TOTAL OF ALL PROJECTS	1,918,500	90	64	4
Orange County Transportation Auth.	Garden Grove	CA	Purchase 327 large transit coaches	63,170,000	90	3,387 *	15
Orange County Transportation Auth.	Garden Grove	CA	TOTAL OF ALL PROJECTS	63,170,000	90	3,387 *	15
City of Los Angeles DOT	Los Angeles	CA	Purchase 10 alternate fuel 30 foot buses	1,600,000	90	70	20
City of Los Angeles DOT	Los Angeles	CA	TOTAL OF ALL PROJECTS	1,600,000	90	70	20
Los Angeles County Transp. Comm.	Los Angeles	CA	Street and highway improvements	89,036,000	Short-term	4,766 *	...
Los Angeles County Transp. Comm.	Los Angeles	CA	Safety Projects, various	44,008,000	Short-term	2,366 *	...
Los Angeles County Transp. Comm.	Los Angeles	CA	Safety Projects, seismic	24,965,000	Short-term	1,351 *	...
Los Angeles County Transp. Comm.	Los Angeles	CA	Harbor transitway extension	11,772,000	Short-term	647 *	...
Los Angeles County Transp. Comm.	Los Angeles	CA	Sepulveda tunnel widening	141,648,000	Short-term	7,570 *	...
Los Angeles County Transp. Comm.	Los Angeles	CA	Long Beach Transit facility construction	17,538,000	Short-term	955 *	...
Los Angeles County Transp. Comm.	Los Angeles	CA	Pasadena light rail project	425,500,000	Over 120	22,699 *	...
Los Angeles County Transp. Comm.	Los Angeles	CA	Alameda corridor transportation project	266,000,000	Short-term	600	10,000
Los Angeles County Transp. Comm.	Los Angeles	CA	Electric trolley bus project	21,000,000	Short-term	1,139 *	...
Los Angeles County Transp. Comm.	Los Angeles	CA	SCR10 370 bus replacement and expansion	83,920,000	Short-term	4,693 *	...
Los Angeles County Transp. Comm.	Los Angeles	CA	ADA transit bus requirements	38,300,000	Short-term	2,061 *	...

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential Jobs (b)	Jobs Beyond 1993
Los Angeles County Transp. Comm.	Los Angeles	CA	Union station gateway multimodal facility	58,000,000	Short-term	3,111	---
Los Angeles County Transp. Comm.	Los Angeles	CA	MetroLink commuter stations in LA County	24,000,000	Short-term	1,299	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Transporation demand management projects	11,300,000	Short-term	622	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Pico-San Vicente metro transit mall	30,100,000	Short-term	1,624	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Bus shelter construction program	1,770,000	Short-term	36	108
Los Angeles County Transp. Comm.	Los Angeles	CA	Blue Line grade crossing improvement	1,364,000	Short-term	15	30
Los Angeles County Transp. Comm.	Los Angeles	CA	Blue line enhancements	796,000	Short-term	62	---
Los Angeles County Transp. Comm.	Los Angeles	CA	RCC systemwide procurement project	2,301,000	Short-term	70	100
Los Angeles County Transp. Comm.	Los Angeles	CA	Electric vehicle battery exchanger demo.	5,311,000	Short-term	303	---
Los Angeles County Transp. Comm.	Los Angeles	CA	SCRRA rail/highway/grade separations	88,530,000	Short-term	4,739	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Route 5 traffic operations system	3,100,000	Short-term	185	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Route 101 traffic operations system	1,500,000	Short-term	100	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Montebello ready-to-go transit projects	575,000	Short-term	51	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Port of Los Angeles access improvements	2,390,000	Short-term	147	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Port of Long Beach access improvements	16,590,000	Short-term	904	---
Los Angeles County Transp. Comm.	Los Angeles	CA	City of Agoura Hills transportation projects	2,123,000	Short-term	133	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Antelope Valley Transit Authority	9,198,000	Short-term	510	---
Los Angeles County Transp. Comm.	Los Angeles	CA	City of Burbank transportation projects	20,025,000	Short-term	1,087	---
Los Angeles County Transp. Comm.	Los Angeles	CA	City of Calabasas transportation projects	1,449,000	Short-term	98	---
Los Angeles County Transp. Comm.	Los Angeles	CA	City of Glendale	12,885,000	Short-term	707	---
Los Angeles County Transp. Comm.	Los Angeles	CA	City of La Canada Flintridge	1,770,000	Short-term	114	---
Los Angeles County Transp. Comm.	Los Angeles	CA	City of Lancaster	60,470,000	Short-term	3,243	---
Los Angeles County Transp. Comm.	Los Angeles	CA	City of Palmdale	3,567,000	Short-term	210	---
Los Angeles County Transp. Comm.	Los Angeles	CA	City of San Fernando	2,031,000	Short-term	128	---
Los Angeles County Transp. Comm.	Los Angeles	CA	City of Santa Clarita	44,100,000	Short-term	2,371	---
Los Angeles County Transp. Comm.	Los Angeles	CA	City of Westlake Village	435,000	Short-term	43	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Route 5 HOV Lane	207,868,000	Short-term	11,099	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Route 10 HOV Lane	186,975,000	Short-term	9,986	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Route 14 HOV Lane	54,357,000	Short-term	2,917	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Route 57 HOV Lane	23,992,000	Short-term	1,299	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Route 60 HOV Lane	97,826,000	Short-term	5,234	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Route 118 HOV Lane	34,704,000	Short-term	1,870	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Route 134 HOV Lane, project I	10,600,000	Short-term	585	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Route 134 HOV Lane, project II	7,790,000	Short-term	435	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Route 170 HOV Lane	10,712,000	Short-term	591	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Route 210 HOV Lane	8,853,000	Short-term	492	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Route 405 HOV Lane	22,130,000	Short-term	1,200	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Route 605 HOV Lane	55,597,000	Short-term	2,983	---
Los Angeles County Transp. Comm.	Los Angeles	CA	Metro rail segment 3	132,710,000	Short-term	637	16,180
Los Angeles County Transp. Comm.	Los Angeles	CA	TOTAL OF ALL PROJECTS	2,423,501,000	Short-term	107,943	26,418

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential Jobs to 1993	Jobs Beyond 1993
Southern California RTD	Los Angeles	CA	Electric trolley bus project	135,000,000	150	310	2,316
Southern California RTD	Los Angeles	CA	Union Station gateway transit center	14,200,000	120	2,500	3,000
Southern California RTD	Los Angeles	CA	Bus overcrowding relief project-capital cost	1,384,794	90	---	---
Southern California RTD	Los Angeles	CA	Maximum 30-minute headway program-cap. cost	1,107,835	90	---	---
Southern California RTD	Los Angeles	CA	Blue Line feeder bus service-capital cost	830,876	90	---	---
Southern California RTD	Los Angeles	CA	TOTAL OF ALL PROJECTS	152,523,505	90/150	2,810	5,316
City of Montebello	Montebello	CA	Greenwood bus terminal demolition	150,000	120	8 *	---
City of Montebello	Montebello	CA	Pico Rivera bus terminal reconstruction	250,000	120	13 *	---
City of Montebello	Montebello	CA	Anti graffiti window refurbishing program	250,000	120	13 *	---
City of Montebello	Montebello	CA	TOTAL OF ALL PROJECTS	650,000	120	35 *	---
Monterey-Salinas Transit	Monterey	CA	Purchase 23 large and 10 mid-size buses	8,928,000	90	475	---
Monterey-Salinas Transit	Monterey	CA	TOTAL OF ALL PROJECTS	8,928,000	90	475	---
Bay Area Rapid Transit District	Oakland	CA	Station escalator replacement	3,250,000	120	178	2
Bay Area Rapid Transit District	Oakland	CA	Traction power improvements	6,000,000	90	329	2
Bay Area Rapid Transit District	Oakland	CA	Reconstruct eight transit railcars	2,500,000	120	170	0
Bay Area Rapid Transit District	Oakland	CA	Network telecommunications systems	3,100,000	120	170	4
Bay Area Rapid Transit District	Oakland	CA	Radio communications system	29,500,000	120	800	35
Bay Area Rapid Transit District	Oakland	CA	Parking security improvements	3,000,000	120	164	18
Bay Area Rapid Transit District	Oakland	CA	Automatic fare collection replacement	50,000,000	120	500	0
Bay Area Rapid Transit District	Oakland	CA	Commuter rail service in I-80 corridor	40,000,000	120	2,192	100
Bay Area Rapid Transit District	Oakland	CA	Expansion of transportation buildings	1,500,000	90	82	12
Bay Area Rapid Transit District	Oakland	CA	TOTAL OF ALL PROJECTS	138,850,000	90/120	4,585	175
South Coast Area Transit	Ontario	CA	15 alternative fueled buses for SCAT	3,000,000	---	160 *	---
South Coast Area Transit	Ontario	CA	2 spare bus engines	120,000	---	6 *	---
South Coast Area Transit	Ontario	CA	SCAT facility improvements	600,000	---	32 *	---
South Coast Area Transit	Ontario	CA	South Ontario transfer facility	96,000	---	5 *	---
South Coast Area Transit	Ontario	CA	4 CMG buses for city of Thousand Oaks	1,000,000	---	---	---
South Coast Area Transit	Ontario	CA	Thousand Oaks transit service expansion	600,000	---	32 *	---
South Coast Area Transit	Ontario	CA	2 "trolley" buses for City of Ojai	160,000	---	9 *	---

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential 1993 Jobs (b)	Jobs Beyond 1993
South Coast Area Transit	Oxnard	CA	City of Moorpark commuter express	35,000	---	2 *	---
South Coast Area Transit	Oxnard	CA	Carnarillo bus purchase/route improvements	240,000	---	13 *	---
South Coast Area Transit	Oxnard	CA	Santa Clara River Valley intercity corridor	1,660,000	---	90 *	---
South Coast Area Transit	Oxnard	CA	East County intercity corridor	1,100,000	---	59 *	---
South Coast Area Transit	Oxnard	CA	Central County intercity interconnect	1,200,000	---	65 *	---
South Coast Area Transit	Oxnard	CA	2 replacement service vehicles	38,000	---	2 *	---
South Coast Area Transit	Oxnard	CA	5 replacement 35 foot transit coaches	1,250,000	---	67 *	---
South Coast Area Transit	Oxnard	CA	Bus production audits	50,000	---	3 *	---
South Coast Area Transit	Oxnard	CA	AAE services for CMG facility modification	150,000	---	8 *	---
South Coast Area Transit	Oxnard	CA	CMG fast-fill fuel station facility modif.	1,350,000	---	73 *	---
South Coast Area Transit	Oxnard	CA	Budgeting software/hardware	30,000	---	2 *	---
South Coast Area Transit	Oxnard	CA	TOTAL OF ALL PROJECTS	12,679,000	---	680 *	---
Riverside Transit Agency	Riverside	CA	Bus expansion	3,960,000	90	30	---
Riverside Transit Agency	Riverside	CA	TOTAL OF ALL PROJECTS	3,960,000	90	30	---
Sacramento Regional Transit Dist.	Sacramento	CA	Stockton to 59th double tracking	3,500,000	90	187 *	---
Sacramento Regional Transit Dist.	Sacramento	CA	Purchase 4 light rail vehicles	7,500,000	90	400 *	---
Sacramento Regional Transit Dist.	Sacramento	CA	Purchase 17 CMG powered buses	5,850,000	90	312 *	---
Sacramento Regional Transit Dist.	Sacramento	CA	TOTAL OF ALL PROJECTS	16,850,000	90	898 *	---
San Diego Met. Transit Dev. Board	San Diego	CA	Grade crossing replacements	1,500,000	sw 140	83	0
San Diego Met. Transit Dev. Board	San Diego	CA	L St. track removal and drainage corrections	300,000	sw 110	17	0
San Diego Met. Transit Dev. Board	San Diego	CA	South line drainage improvements	300,000	sw 170	17	0
San Diego Met. Transit Dev. Board	San Diego	CA	East line drainage improvements	200,000	sw 170	11	0
San Diego Met. Transit Dev. Board	San Diego	CA	Spring St. station retaining wall	600,000	sw 25	33	0
San Diego Met. Transit Dev. Board	San Diego	CA	Station and parking lot lighting enhancements	800,000	sw 200	44	0
San Diego Met. Transit Dev. Board	San Diego	CA	12th/C St. trackway rehabilitation	1,100,000	sw 140	61	0
San Diego Met. Transit Dev. Board	San Diego	CA	Urban improvements-12th/Imperial and Bayside	300,000	sw 170	17	0
San Diego Met. Transit Dev. Board	San Diego	CA	ADA station modifications - phase 2	500,000	sw 230	28	0
San Diego Met. Transit Dev. Board	San Diego	CA	Station platform widening - phase 2	500,000	sw 230	28	0
San Diego Met. Transit Dev. Board	San Diego	CA	SDAE desert line tunnel repair	3,100,000	sw 40	171	---
San Diego Met. Transit Dev. Board	San Diego	CA	SDAE desert line bridge repair	400,000	sw 140	22	---
San Diego Met. Transit Dev. Board	San Diego	CA	SDAE desert line washout repair	400,000	sw 170	22	---
San Diego Met. Transit Dev. Board	San Diego	CA	TOTAL OF ALL PROJECTS	10,000,000	---	554	---

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential Jobs (b)	Jobs Beyond 1993
San Francisco Municipal Railway	San Francisco	CA	Purchase 5 light rail vehicles	10,985,000	10	---	25
San Francisco Municipal Railway	San Francisco	CA	Advanced purchase 12 light rail vehicles	26,366,000	90/120	---	60
San Francisco Municipal Railway	San Francisco	CA	Advanced train control system equipment	11,000,000	30	---	15
San Francisco Municipal Railway	San Francisco	CA	TOTAL OF ALL PROJECTS	48,349,000	10/120	---	100
San Luis Obispo City Transit	San Luis Obispo	CA	Replace 7 obsolete vehicle wheelchairs lifts	175,000	60	10	0
San Luis Obispo City Transit	San Luis Obispo	CA	Construct exterior bus wash facility	85,000	75	6	0
San Luis Obispo City Transit	San Luis Obispo	CA	Add bay with pit to maintenance facility	150,000	90	20	0
San Luis Obispo City Transit	San Luis Obispo	CA	New engines and transmissions for 3 buses	135,000	60	20	0
San Luis Obispo City Transit	San Luis Obispo	CA	TOTAL OF ALL PROJECTS	545,000	60/90	56	0
Santa Barbara MTD	Santa Barbara	CA	Construct consolidated facility	10,000,000	120	125	---
Santa Barbara MTD	Santa Barbara	CA	Purchase 19 electric battery buses	3,500,000	120	25	---
Santa Barbara MTD	Santa Barbara	CA	Develop and install network computer software	300,000	Immediate	16 *	---
Santa Barbara MTD	Santa Barbara	CA	Electric vehicle equipment	55,000	Immediate	3 *	---
Santa Barbara MTD	Santa Barbara	CA	TOTAL OF ALL PROJECTS	13,855,000	1/120	169	---
Santa Cruz MTD	Santa Cruz	CA	Reconstruct earthquake damaged facilities	12,033,000	120	200	200
Santa Cruz MTD	Santa Cruz	CA	Urban bus replacement, 2 vehicles	521,000	120	10	0
Santa Cruz MTD	Santa Cruz	CA	Management information system replacement	250,000	90	5	0
Santa Cruz MTD	Santa Cruz	CA	Watsonville transit center construction	200,000	120	40	25
Santa Cruz MTD	Santa Cruz	CA	Paratransit vehicle purchase, 6 vehicles	150,000	90	5	4
Santa Cruz MTD	Santa Cruz	CA	Aggregate billing/registering fareboxes	100,000	90	3	2
Santa Cruz MTD	Santa Cruz	CA	ADA bus stop improvement program	50,000	120	0	0
Santa Cruz MTD	Santa Cruz	CA	Non-revenue vehicle replacement, 18 vehicles	328,000	60	6	0
Santa Cruz MTD	Santa Cruz	CA	Santa Cruz operations facility improvements	35,000	60	2	0
Santa Cruz MTD	Santa Cruz	CA	Metro center sidewalk/crosswalk replacement	10,000	60	2	0
Santa Cruz MTD	Santa Cruz	CA	Minor capital improvements	20,000	60	2	0
Santa Cruz MTD	Santa Cruz	CA	Minor capital equipment purchase	18,000	60	2	0
Santa Cruz MTD	Santa Cruz	CA	TOTAL OF ALL PROJECTS	13,715,000	60/120	280	251

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	Mo. of Days to Obligate	Potential 1993 Jobs (b)	Jobs Beyond 1993
Stockton Met. Transit Dist.	Stockton	CA	17 accessible/air quality complying buses	3,580,000	120	270	---
Stockton Met. Transit Dist.	Stockton	CA	10 buses to expand interregional service	2,150,000	120	170	17
Stockton Met. Transit Dist.	Stockton	CA	Radio communication/vehicle locator system	1,200,000	120	90	---
Stockton Met. Transit Dist.	Stockton	CA	Maintenance/operations support equipment	292,744	120	24	---
Stockton Met. Transit Dist.	Stockton	CA	TOTAL OF ALL PROJECTS	7,230,744	120	554	---
Central Contra Costa Transit Auth.	Walnut Creek	CA	Management information system replacement	680,000	90	36 *	---
Central Contra Costa Transit Auth.	Walnut Creek	CA	Admin./maintenance facility rehabilitation	325,000	90	17 *	---
Central Contra Costa Transit Auth.	Walnut Creek	CA	Service vehicle replacement program	125,000	60	7 *	---
Central Contra Costa Transit Auth.	Walnut Creek	CA	Alternate fueling system	850,000	120	45 *	---
Central Contra Costa Transit Auth.	Walnut Creek	CA	Computerized paratransit scheduling system	120,000	120	6 *	---
Central Contra Costa Transit Auth.	Walnut Creek	CA	Martinez/San Francisco commuter ferry boat	7,250,000	120	366 *	---
Central Contra Costa Transit Auth.	Walnut Creek	CA	Expansion bus program including 10 buses	2,625,000	120	140 *	---
Central Contra Costa Transit Auth.	Walnut Creek	CA	Paratransit van expansion with 5 vans	254,600	120	14 *	---
Central Contra Costa Transit Auth.	Walnut Creek	CA	Fixed route patron/fleet security system	750,000	90	40 *	---
Central Contra Costa Transit Auth.	Walnut Creek	CA	TOTAL OF ALL PROJECTS	12,979,680	60/120	692 *	---
Yolo County Transit Authority	Woodland	CA	Purchase 29 CAA/ADA complying buses	8,990,000	30/60	270	27
Yolo County Transit Authority	Woodland	CA	Purchase 3 ADA complying small buses	180,000	30/60	5	1
Yolo County Transit Authority	Woodland	CA	Purchase 3 accessible vans	120,000	30/60	4	3
Yolo County Transit Authority	Woodland	CA	Expand service to Sacramento Airport	660,000	30/60	8	3
Yolo County Transit Authority	Woodland	CA	Supplement added cost of 16 clean air buses	960,000	30/60	29	3
Yolo County Transit Authority	Woodland	CA	Increased service demonstration to U.C. Davis	360,000	30/60	5	5
Yolo County Transit Authority	Woodland	CA	Unitrans CNG fueling facility	1,200,000	30/60	36	3
Yolo County Transit Authority	Woodland	CA	Four CAA/ADA buses for service expansion	1,240,000	30/60	37	3
Yolo County Transit Authority	Woodland	CA	Implement bikes on buses program	60,000	30/60	2	5
Yolo County Transit Authority	Woodland	CA	Two-way trunked radio system	50,000	30/60	2	5
Yolo County Transit Authority	Woodland	CA	Upgrade registering fareboxes	40,000	30/60	1	0
Yolo County Transit Authority	Woodland	CA	Replace service vehicle with clean fuel van	20,000	30/60	1	0
Yolo County Transit Authority	Woodland	CA	Replace computer system	3,000	30/60	...	0
Yolo County Transit Authority	Woodland	CA	Methane detection system for CNG	50,000	30/60	1	0
Yolo County Transit Authority	Woodland	CA	Automated telephone information system	200,000	30/60	6	1
Yolo County Transit Authority	Woodland	CA	Portable information booth with display	10,000	30/60	...	0
Yolo County Transit Authority	Woodland	CA	West Sacramento transit center	3,000,000	90	63	10
Yolo County Transit Authority	Woodland	CA	Maintenance/fueling facility	8,000,000	90	195	10
Yolo County Transit Authority	Woodland	CA	TOTAL OF ALL PROJECTS	25,143,000	30/90	665	79

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential Jobs (b)	Jobs Beyond 1993
Yuba-Sutter Transit	Yuba City	CA	Four replacement commuter buses	1,000,000	90	53 *	---
Yuba-Sutter Transit	Yuba City	CA	Six replacement mid-size buses	750,000	90	40 *	---
Yuba-Sutter Transit	Yuba City	CA	Construct maint./operations/admin. facility	3,000,000	90	160 *	---
Yuba-Sutter Transit	Yuba City	CA	TOTAL OF ALL PROJECTS	4,750,000	90	253 *	---
Roaring Fork Transit Agency	Aspen	CO	Purchase 15 transit vehicles and equipment	2,651,950	Immediate	30	35
Roaring Fork Transit Agency	Aspen	CO	TOTAL OF ALL PROJECTS	2,651,950	Immediate	30	35
Regional Transportation District	Denver	CO	Twin Forks park-n-ride	1,400,000	90	25	0
Regional Transportation District	Denver	CO	Superior park-n-ride expansion	750,000	120	20	0
Regional Transportation District	Denver	CO	Montbello Transit Transfer Station	1,500,000	120	30	0
Regional Transportation District	Denver	CO	Bus station upgrades, improvements	2,600,000	120	52	0
Regional Transportation District	Denver	CO	TOTAL OF ALL PROJECTS	6,450,000	90/120	127	0
Town of Vail	Vail	CO	Traffic gates at Golden Park east terminal	30,000	90	5	---
Town of Vail	Vail	CO	Vehicle locator and bus stop info. system	100,000	60	8	1
Town of Vail	Vail	CO	Traffic control video monitors	100,000	90	4	---
Town of Vail	Vail	CO	TOTAL OF ALL PROJECTS	230,000	60/90	17	1
Greater Bridgeport Transit Dist.	Bridgeport	CT	Emergency generator	35,000	120	2 *	---
Greater Bridgeport Transit Dist.	Bridgeport	CT	Elderly & Disabled computer system hardware	40,000	120	2 *	---
Greater Bridgeport Transit Dist.	Bridgeport	CT	Fuel tank level and leak monitor system	10,000	120	1 *	---
Greater Bridgeport Transit Dist.	Bridgeport	CT	Equipment for E & D maintenance facility	107,500	120	6 *	---
Greater Bridgeport Transit Dist.	Bridgeport	CT	Equipment for fixed-route maint. facility	80,000	120	4 *	---
Greater Bridgeport Transit Dist.	Bridgeport	CT	TOTAL OF ALL PROJECTS	272,500	120	15 *	---
Washington MET Area Transit Auth.	Washington	DC	Rhor car body rehabilitation	5,985,000	120	60	---
Washington MET Area Transit Auth.	Washington	DC	Rhor car truck rehabilitation	2,880,000	120	30	---
Washington MET Area Transit Auth.	Washington	DC	Breda chopper blower replacement	1,648,000	120	20	---
Washington MET Area Transit Auth.	Washington	DC	Station escalator overhaul	16,900,000	120	200	---
Washington MET Area Transit Auth.	Washington	DC	Station elevator rehabilitation	2,704,000	120	35	---

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential Jobs Beyond	
						1993	1993
Washington Met. Area Transit Auth.	Washington	DC	Station/tunnel leak repair	2,289,000	120	65	...
Washington Met. Area Transit Auth.	Washington	DC	Station/tunnel ventilation rehabilitation	2,480,000	120	25	...
Washington Met. Area Transit Auth.	Washington	DC	Station structural retrofit, R.I. Avenue	2,860,000	120	37	...
Washington Met. Area Transit Auth.	Washington	DC	AFCS Gates/EDADS	13,000,000	120	25	...
Washington Met. Area Transit Auth.	Washington	DC	Station enhancement/rehabilitation	14,045,000	120	210	...
Washington Met. Area Transit Auth.	Washington	DC	ROM floating slab retrofit	1,180,000	120	12	...
Washington Met. Area Transit Auth.	Washington	DC	Access for high dampers	430,000	120	4	...
Washington Met. Area Transit Auth.	Washington	DC	Pipe relocation-Drummond Avenue	380,000	120	4	...
Washington Met. Area Transit Auth.	Washington	DC	ROM Tunnel Electrical	460,000	120	5	...
Washington Met. Area Transit Auth.	Washington	DC	ROM track rehabilitation	5,880,000	120	70	...
Washington Met. Area Transit Auth.	Washington	DC	Mid-life rehab.-AIC wayside equipment	735,000	120	7	...
Washington Met. Area Transit Auth.	Washington	DC	Traction power station switchgear rehab.	950,000	120	10	...
Washington Met. Area Transit Auth.	Washington	DC	Mid-life rehabilitation of power equipment	2,310,000	120	23	...
Washington Met. Area Transit Auth.	Washington	DC	AC power control system	740,000	120	8	...
Washington Met. Area Transit Auth.	Washington	DC	Car wash rehabilitation	830,000	120	8	...
Washington Met. Area Transit Auth.	Washington	DC	RAIL/BUSV structure, yards, shops rehab.	900,000	120	14	...
Washington Met. Area Transit Auth.	Washington	DC	Rehab. vital communications equipment	210,000	120	3	...
Washington Met. Area Transit Auth.	Washington	DC	Rail support equipment	8,050,000	120	100	...
Washington Met. Area Transit Auth.	Washington	DC	Rail support equipment other offices	1,515,000	120	18	...
Washington Met. Area Transit Auth.	Washington	DC	Rail work equipment rehabilitation	2,045,000	120	30	...
Washington Met. Area Transit Auth.	Washington	DC	Rail work equip.-locomotives/prime movers	5,885,000	120	72	...
Washington Met. Area Transit Auth.	Washington	DC	Harris press replacement	488,000	120	5	...
Washington Met. Area Transit Auth.	Washington	DC	Winterization	1,805,000	120	22	...
Washington Met. Area Transit Auth.	Washington	DC	Fire equipment system rehab.	1,440,000	120	15	...
Washington Met. Area Transit Auth.	Washington	DC	Parking lot rehab.	1,205,000	120	12	...
Washington Met. Area Transit Auth.	Washington	DC	Bus procurements	191,059,000	120	1,000	...
Washington Met. Area Transit Auth.	Washington	DC	Bus washer rehab.	1,450,000	120	15	...
Washington Met. Area Transit Auth.	Washington	DC	Southern Ave. annex contamination abatement	1,287,000	120	12	...
Washington Met. Area Transit Auth.	Washington	DC	Bus lifts	450,000	120	5	...
Washington Met. Area Transit Auth.	Washington	DC	Bus support equipment	1,307,000	120	15	...
Washington Met. Area Transit Auth.	Washington	DC	Bus support equipment-other offices	379,000	120	4	...
Washington Met. Area Transit Auth.	Washington	DC	Upgrade/replace underground storage tanks	6,243,000	120	75	...
Washington Met. Area Transit Auth.	Washington	DC	Mainframe computer upgrade	3,570,000	120	25	...
Washington Met. Area Transit Auth.	Washington	DC	Bus radios	7,850,000	120	63	...
Washington Met. Area Transit Auth.	Washington	DC	New uniform fare technology	1,000,000	120	10	...
Washington Met. Area Transit Auth.	Washington	DC	TOTAL OF ALL PROJECTS	316,914,000	120	2,371	...

Transit Agency	City	State	Project Description	1993 Federal Funding		Mo. of Days to Obligate	Potential Jobs (b)	Jobs Beyond 1993
				Needed (a)	Received			
Metro Dade Transit	Miami	FL	Purchase 100 artic./inter-city/small buses	27,600,000	0	90	1,500	0
Metro Dade Transit	Miami	FL	Metrorail Florida City extension design	20,000,000	0	90	1,097	0
Metro Dade Transit	Miami	FL	Metrorail FC ext. other (18/24 month to done)	290,000,000	0	90	15,903	106
Metro Dade Transit	Miami	FL	Replacement of roofs at Metrorail stations	3,000,000	0	60	83	0
Metro Dade Transit	Miami	FL	Paint Metrorail and Metromover stations	3,500,000	0	90	83	8
Metro Dade Transit	Miami	FL	Metrorail crossover	2,000,000	0	90	115	0
Metro Dade Transit	Miami	FL	Purchase paratransit vehicles	3,000,000	0	90	160	0
Metro Dade Transit	Miami	FL	Metromover upgrade for compatibility	1,700,000	0	94	94	---
Metro Dade Transit	Miami	FL	ADA full Metrorail/mover station access.	1,600,000	0	90	88	---
Metro Dade Transit	Miami	FL	Bus shelters and equipment	1,100,000	0	90	60	3
Metro Dade Transit	Miami	FL	ADA bus system accessibility	7,500,000	0	90	412	---
Metro Dade Transit	Miami	FL	Sound barriers for the Metrorail	13,000,000	0	90	715	---
Metro Dade Transit	Miami	FL	Fiber optics network	1,500,000	0	90	82	---
Metro Dade Transit	Miami	FL	Rail/mover & maint. facility refurbishing	2,000,000	0	90	110	---
Metro Dade Transit	Miami	FL	TOTAL OF ALL PROJECTS	377,500,000	0	60/90	20,502	117
Hillsboro Area Reg. Transit Auth.	Tampa	FL	Purchase fifteen 27 passenger mini-buses	3,000,000	160	Immediate	160	---
Hillsboro Area Reg. Transit Auth.	Tampa	FL	Engine retrofit to comply with ADA	1,000,000	53	Immediate	53	---
Hillsboro Area Reg. Transit Auth.	Tampa	FL	Bus shelters	3,500,000	27	Immediate	27	---
Hillsboro Area Reg. Transit Auth.	Tampa	FL	Addition to operations facility	3,600,000	120	120	194	---
Hillsboro Area Reg. Transit Auth.	Tampa	FL	TOTAL OF ALL PROJECTS	8,100,000	345	Imm./120	435	---
Metropolitan Atlanta Rapid TA	Atlanta	GA	Purchase of 138 replacement buses	31,000,000	120	120	1,652	---
Metropolitan Atlanta Rapid TA	Atlanta	GA	Associated capital maintenance items	2,500,000	120	120	133	---
Metropolitan Atlanta Rapid TA	Atlanta	GA	Rebuild 6 rapid transit cars	3,000,000	120	160	160	---
Metropolitan Atlanta Rapid TA	Atlanta	GA	Maintenance facility rehabilitation	500,000	120	27	27	---
Metropolitan Atlanta Rapid TA	Atlanta	GA	Rail station rehabilitation	1,000,000	120	53	53	---
Metropolitan Atlanta Rapid TA	Atlanta	GA	E/W line and track rehabilitation	1,000,000	120	53	53	---
Metropolitan Atlanta Rapid TA	Atlanta	GA	M/S line and track rehabilitation	500,000	120	27	27	---
Metropolitan Atlanta Rapid TA	Atlanta	GA	TOTAL OF ALL PROJECTS	39,500,000	120	2,105	---	---
Hawaii County Transit System	Hilo	HI	Purchase three buses	60,000	3	90	3	3
Hawaii County Transit System	Hilo	HI	Purchase bus repair equipment	20,000	60	1	1	0
Hawaii County Transit System	Hilo	HI	Computerize maintenance & ride match programs	10,000	90	1	1	0
Hawaii County Transit System	Hilo	HI	TOTAL OF ALL PROJECTS	90,000	60/90	5	5	3

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential Jobs Beyond 1993	Jobs Beyond 1993
Honolulu Dept. of Transp. Services	Honolulu	HI	Honolulu rapid transit project, 1st year	138,130,000	140	7,362 *	---
Honolulu Dept. of Transp. Services	Honolulu	HI	TOTAL OF ALL PROJECTS	138,130,000	140	7,362 *	---
Metra	Chicago	IL	Replace Chicago River bridge, Mil. North Line	3,000,000	Short-term	160 *	---
Metra	Chicago	IL	Replace Golf Road bridge, Mil. North Line	5,000,000	Short-term	267 *	---
Metra	Chicago	IL	Rehab. 3 bridges, Rock Island Line	4,000,000	Short-term	213 *	---
Metra	Chicago	IL	Replace retaining walls, Rock Island Line	4,000,000	Short-term	213 *	---
Metra	Chicago	IL	Replace bridges, C&N Northwest Line	24,000,000	Short-term	1,279 *	---
Metra	Chicago	IL	Rehab. 3 bridges, Metra Electric Line	6,000,000	Short-term	320 *	---
Metra	Chicago	IL	Rehab. Blue Island Yard, Rock Island Line	9,000,000	Short-term	480 *	---
Metra	Chicago	IL	Rehab. track, Milwaukee West Line	13,000,000	Short-term	693 *	---
Metra	Chicago	IL	Reconst. Kensing. stations, Metra Elec. Line	3,000,000	Short-term	160 *	---
Metra	Chicago	IL	TOTAL OF ALL PROJECTS	71,000,000	Short-term	3,784 *	---
Champaign-Urbana MTD	Urbana	IL	Headquarters facility modifications	1,235,000	90	82	---
Champaign-Urbana MTD	Urbana	IL	TOTAL OF ALL PROJECTS	1,235,000	90	82	---
Muncie Indiana Transit System	Muncie	IN	Purchase six 35 foot advanced design buses	700,000	120	37 *	---
Muncie Indiana Transit System	Muncie	IN	Purchase three 22/25 foot buses	500,000	120	27 *	---
Muncie Indiana Transit System	Muncie	IN	TOTAL OF ALL PROJECTS	1,200,000	120	64 *	---
Transit Authority of River City	Louisville	KY	Dixie Hwy. Transp. center construction	1,707,500	120	75	15
Transit Authority of River City	Louisville	KY	Preston Hwy. transp. center construction	1,741,000	120	50	10
Transit Authority of River City	Louisville	KY	Union Station regulatory needs	682,000	90	30	30
Transit Authority of River City	Louisville	KY	Expansion of ADA services	200,000	45	20	10
Transit Authority of River City	Louisville	KY	Bus exhaust ventilation system, 29th/Broadway	160,000	15	5	0
Transit Authority of River City	Louisville	KY	UST's regulatory needs system, 29th/Broadway	465,000	90	20	15
Transit Authority of River City	Louisville	KY	New entrance at 29th/Broadway	50,000	60	2	0
Transit Authority of River City	Louisville	KY	Materials handling facility upgrade	100,000	90	5	0
Transit Authority of River City	Louisville	KY	TOTAL OF ALL PROJECTS	5,105,500	15/120	207	80

Transit Agency	City	State	Project Description	1993 Federal Funding		No. of Days to Obligate	Potential Jobs Beyond 1993
				Needed (a)	Jobs (b)		
Spportran	Shreveport	LA	Seven 40 foot lift-equipped buses	1,575,000	60	84 *	---
Spportran	Shreveport	LA	Two lift-equipped demand response vehicles	80,000	60	4 *	---
Spportran	Shreveport	LA	Four service vehicles	52,500	90	3 *	---
Spportran	Shreveport	LA	Administrative/maintenance facility	4,000,000	120	213 *	---
Spportran	Shreveport	LA	TOTAL OF ALL PROJECTS	5,707,500	60/120	304	---
Massachusetts Bay Transp. Auth.	Boston	MA	LR and RT systemwide modernization program	103,000,000	120	5,562	5,562
Massachusetts Bay Transp. Auth.	Boston	MA	Systemwide procurement program	9,000,000	120	486	486
Massachusetts Bay Transp. Auth.	Boston	MA	Bridge rehabilitation/replacement program	44,000,000	120	2,376	2,376
Massachusetts Bay Transp. Auth.	Boston	MA	Parking garage rehabilitation	1,000,000	120	54	54
Massachusetts Bay Transp. Auth.	Boston	MA	Modernize RT stations, power supply	71,000,000	120	3,834	3,834
Massachusetts Bay Transp. Auth.	Boston	MA	Commuter rail signal improvements	7,000,000	120	376	376
Massachusetts Bay Transp. Auth.	Boston	MA	Commuter rail track rehab.-Fitchburg line	50,000,000	120	2,700	2,700
Massachusetts Bay Transp. Auth.	Boston	MA	RT track and bridge Reconstruction-Red Line	11,000,000	120	594	594
Massachusetts Bay Transp. Auth.	Boston	MA	Procurement of 180 buses	50,000,000	120	2,700	2,700
Massachusetts Bay Transp. Auth.	Boston	MA	Commuter rail track rehab.-Haverhill line	70,000,000	120	3,780	3,780
Massachusetts Bay Transp. Auth.	Boston	MA	Procurement 35 rapid transit vehicles	53,000,000	120	2,862	2,862
Massachusetts Bay Transp. Auth.	Boston	MA	Procurement 100 light rail vehicles	350,000,000	120	18,900	18,900
Massachusetts Bay Transp. Auth.	Boston	MA	TOTAL OF ALL PROJECTS	819,000,000	120	44,224	44,224
Cape Cod Regional Transit Auth.	Dennis	MA	Purchase 10 mini buses	470,000	120	25 *	---
Cape Cod Regional Transit Auth.	Dennis	MA	TOTAL OF ALL PROJECTS	470,000	120	25 *	---
Montachusett Reg. Transit Auth.	Fitchburg	MA	Five lift equipped buses	995,000	100	53 *	---
Montachusett Reg. Transit Auth.	Fitchburg	MA	Bus facility window replacement	10,000	60	2	0
Montachusett Reg. Transit Auth.	Fitchburg	MA	TOTAL OF ALL PROJECTS	1,005,000	60/100	55 *	---
Cape Ann Transportation Authority	Glouster	MA	Three 35 foot buses	---	Immediate	---	---
Cape Ann Transportation Authority	Glouster	MA	Two vans	---	Immediate	---	---
Cape Ann Transportation Authority	Glouster	MA	One minibus	---	Immediate	---	---
Cape Ann Transportation Authority	Glouster	MA	Ventilation system for garage	---	Immediate	---	---
Cape Ann Transportation Authority	Glouster	MA	Purchase office space	---	Immediate	---	---

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential Jobs (b)	Jobs Beyond 1993
Cape Ann Transportation Authority	Glouster	MA	Upgrade computer system	---	Immediate	---	---
Cape Ann Transportation Authority	Glouster	MA	Repair septic system to EPA requirements	---	Immediate	---	---
Cape Ann Transportation Authority	Glouster	MA	TOTAL OF ALL PROJECTS	893,000	Immediate	49 *	---
Pioneer Valley Transit Authority	Springfield	MA	Fifteen ADA/CAA standard buses	3,198,000	Immediate	170 *	---
Pioneer Valley Transit Authority	Springfield	MA	TOTAL OF ALL PROJECTS	3,198,000	Immediate	170 *	---
Montgomery County DOT	Rockville	MD	Revenue counting facility	423,000	120	23 *	---
Montgomery County DOT	Rockville	MD	Radio communications system replacement	2,500,000	120	133 *	---
Montgomery County DOT	Rockville	MD	Mass transit pedestrian access	125,000	90	7 *	---
Montgomery County DOT	Rockville	MD	Paratransit bus replacement, 15 vehicles	1,050,000	120	56 *	---
Montgomery County DOT	Rockville	MD	Purchase 45 replacement ADA compliant buses	11,475,000	120	612 *	---
Montgomery County DOT	Rockville	MD	TOTAL OF ALL PROJECTS	15,573,000	90/120	830 *	---
Mass Transportation Authority	Flint	MI	Purchase forty-one 40 foot transit buses	7,420,000	90	395 *	---
Mass Transportation Authority	Flint	MI	Smartnet radio system	480,000	60	26 *	---
Mass Transportation Authority	Flint	MI	Expand and modernize computer hardware	262,400	90	14 *	---
Mass Transportation Authority	Flint	MI	Upgrade automatic bus diagnostic system	40,000	120	2 *	---
Mass Transportation Authority	Flint	MI	Hydraulic transmission retarders for 34 buses	87,040	60	5 *	---
Mass Transportation Authority	Flint	MI	Install flip seats and wheelchair securements	104,160	60	6 *	---
Mass Transportation Authority	Flint	MI	Public address on 52 buses for ADA compliance	20,800	60	1 *	---
Mass Transportation Authority	Flint	MI	Install 100 passenger shelters	400,000	45	21 *	---
Mass Transportation Authority	Flint	MI	Install 800 bus stop pads and signs	652,800	45	35 *	---
Mass Transportation Authority	Flint	MI	Bus security camera boxes and camcorders	48,376	60	3 *	---
Mass Transportation Authority	Flint	MI	Bus storage area overhead doors	400,000	45	21 *	---
Mass Transportation Authority	Flint	MI	Electronic sign making equipment	20,000	60	1 *	---
Mass Transportation Authority	Flint	MI	Upgrade bus washer	28,000	120	1 *	---
Mass Transportation Authority	Flint	MI	Replace fuel maintenance system	96,000	120	5 *	---
Mass Transportation Authority	Flint	MI	Fleet fueling system meeting EPA requirements	52,000	120	3 *	---
Mass Transportation Authority	Flint	MI	Stainless steel wheel covers for 52 buses	12,480	45	1 *	---
Mass Transportation Authority	Flint	MI	Rehab bulkheads and floorboards on 20 buses	160,000	90	9 *	---
Mass Transportation Authority	Flint	MI	TOTAL OF ALL PROJECTS	10,284,256	45/120	548 *	---

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential 1993 Jobs (b)	Jobs Beyond 1993
Grand Rapids Area Transit Auth.	Grand Rapids	MI	Twenty-four buses to meet increased demand	4,800,000	120	12	12
Grand Rapids Area Transit Auth.	Grand Rapids	MI	TOTAL OF ALL PROJECTS	4,800,000	120	12	12
Kalamazoo Metro Transit System	Kalamazoo	MI	Replacement of 23 buses	3,864,000	120	206 *	...
Kalamazoo Metro Transit System	Kalamazoo	MI	Five vans for ADA service implementation	160,000	120	9 *	...
Kalamazoo Metro Transit System	Kalamazoo	MI	Facility ventilation equipment	80,000	30	4 *	...
Kalamazoo Metro Transit System	Kalamazoo	MI	TOTAL OF ALL PROJECTS	4,104,000	30/120	219 *	...
State of Michigan 001	Lansing	MI	Large/small bus replacement	62,500,000	90	3,331 *	...
State of Michigan 001	Lansing	MI	Facilities	22,600,000	90	1,205 *	...
State of Michigan 001	Lansing	MI	Non-bus equipment	13,400,000	90	714 *	...
State of Michigan 001	Lansing	MI	TOTAL OF ALL PROJECTS	98,500,000	90	5,250 *	...
Muskegon Area Transit System	North Muskegon	MI	Maintenance and storage facility	2,416,127	110	25	3
Muskegon Area Transit System	North Muskegon	MI	TOTAL OF ALL PROJECTS	2,416,127	110	25	3
City of Mankato	Mankato	MN	Purchase 10 transit buses	1,900,000	60	101 *	...
City of Mankato	Mankato	MN	TOTAL OF ALL PROJECTS	1,900,000	60	101 *	...
Metropolitan Transit Commission	Minneapolis	MN	6th Street/Minnesota Street stations	290,000	14	28	1
Metropolitan Transit Commission	Minneapolis	MN	Improve 6th and Hennepin waiting station	50,000	60	3	1
Metropolitan Transit Commission	Minneapolis	MN	Upgrade Minneapolis traffic signals	1,500,000	90	6	0
Metropolitan Transit Commission	Minneapolis	MN	Smelling garage relocation study	50,000	30	3	0
Metropolitan Transit Commission	Minneapolis	MN	Hollywood office remodeling study	60,000	90	1	0
Metropolitan Transit Commission	Minneapolis	MN	Expand Coons park and ride	1,500,000	100	20	1
Metropolitan Transit Commission	Minneapolis	MN	Create comprehensive bus stop data base	300,000	30	10	1
Metropolitan Transit Commission	Minneapolis	MN	Install 10,000 bus schedule sign holders	1,000,000	60	10	5
Metropolitan Transit Commission	Minneapolis	MN	Bus stop signage market research	30,000	30	2	0
Metropolitan Transit Commission	Minneapolis	MN	Retrofit bus shelters with sodium lights	20,000	60	1	0
Metropolitan Transit Commission	Minneapolis	MN	Bus Scheduling Computer System	225,000	60	1	2

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential 1993 Jobs (b)	Jobs Beyond 1993	
Metropolitan Transit Commission	Minneapolis	MN	Implement bus usage planning system	180,000	60	3	2	
Metropolitan Transit Commission	Minneapolis	MN	Install GIS automated mapping system	200,000	60	1	1	
Metropolitan Transit Commission	Minneapolis	MN	Install automated passenger counter system	159,200	60	1	1	
Metropolitan Transit Commission	Minneapolis	MN	Install public timetable desktop publishing	50,000	60	0	0	
Metropolitan Transit Commission	Minneapolis	MN	Purchase optical scanner	12,000	60	0	0	
Metropolitan Transit Commission	Minneapolis	MN	Telephone system upgrade	750,000	60	0	0	
Metropolitan Transit Commission	Minneapolis	MN	Purchase six transit police cars	110,000	60	0	0	
Metropolitan Transit Commission	Minneapolis	MN	Two minivans for disabled service backup	40,000	90	0	0	
Metropolitan Transit Commission	Minneapolis	MN	Install computers 25 service vehicles	150,000	90	1	0	
Metropolitan Transit Commission	Minneapolis	MN	Twenty five articulated buses	6,250,000	90	100	0	
Metropolitan Transit Commission	Minneapolis	MN	On street supervisor cellular phones	13,000	90	0	0	
Metropolitan Transit Commission	Minneapolis	MN	Hand-held radios for MIC police	72,000	90	0	0	
Metropolitan Transit Commission	Minneapolis	MN	Purchase police management computer system	75,000	90	4	0	
Metropolitan Transit Commission	Minneapolis	MN	Purchase bus drivers uniforms	1,200,000	90	64	0	
Metropolitan Transit Commission	Minneapolis	MN	Purchasing and stores information system	160,000	90	9	0	
Metropolitan Transit Commission	Minneapolis	MN	Fueling information system	107,000	90	6	0	
Metropolitan Transit Commission	Minneapolis	MN	TOTAL OF ALL PROJECTS	16,553,200	14/100	275	15	
St. Cloud Metrolink	St. Cloud	MN	Garage addition and improvements	304,000	60/90	16	0	
St. Cloud Metrolink	St. Cloud	MN	Acquire property for intermodal facility	200,000	60/90	0	0	
St. Cloud Metrolink	St. Cloud	MN	TOTAL OF ALL PROJECTS	504,000	60/90	16	0	
Bi-State Development Agency	Saint Louis	MO	East St. Louis transfer center	2,000,000	30	109	0	
Bi-State Development Agency	Saint Louis	MO	Metro Link signal system power backup	500,000	60	27	0	
Bi-State Development Agency	Saint Louis	MO	Anti-vandalism fencing/contentory cover	750,000	30	41	0	
Bi-State Development Agency	Saint Louis	MO	Ends bridge fire protection improvements	2,200,000	60	120	0	
Bi-State Development Agency	Saint Louis	MO	CCTV enhancement at Metro Link stations	2,000,000	30	54	0	
Bi-State Development Agency	Saint Louis	MO	Metro Link downtown tunnel improvements	2,000,000	30	100	0	
Bi-State Development Agency	Saint Louis	MO	Specialized equipment/rail transp. improv.	2,000,000	60	107	0	
Bi-State Development Agency	Saint Louis	MO	Metro Link fare collection equipment	953,000	30	51	0	
Bi-State Development Agency	Saint Louis	MO	Metro Link right-of-way fencing	1,000,000	30	55	0	
Bi-State Development Agency	Saint Louis	MO	Right-of-way master plan improvements	2,000,000	30	100	0	
Bi-State Development Agency	Saint Louis	MO	Delmar station transfer site improvements	400,000	30	22	0	
Bi-State Development Agency	Saint Louis	MO	Forest park transfer center	1,200,000	60	66	0	
Bi-State Development Agency	Saint Louis	MO	St. Charles Rock Road transfer center	500,000	30	27	0	
Bi-State Development Agency	Saint Louis	MO	Metro Link yard switch heaters	100,000	30	5	0	
Bi-State Development Agency	Saint Louis	MO	Metro Link systems equipment/vehicles	250,000	30	13	0	

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential Jobs (b)	Jobs Beyond 1993
Bi-State Development Agency	Saint Louis	MO	Metro Link site/right-of-way improvements	600,000	30	33	---
Bi-State Development Agency	Saint Louis	MO	One hundred CNG buses	24,500,000	60	1,306*	---
Bi-State Development Agency	Saint Louis	MO	Thirty ADA vans for paratransit service	1,200,000	60	69*	32
Bi-State Development Agency	Saint Louis	MO	Brentwood bus garage/CNG yard construction	2,000,000	60	109	---
Bi-State Development Agency	Saint Louis	MO	Eads bridge roadway deck reconstruction	25,000,000	30	1,369	---
Bi-State Development Agency	Saint Louis	MO	Eads bridge roadway deck reconstruction	3,500,000	30	187*	---
Bi-State Development Agency	Saint Louis	MO	Metro Link project completion	29,000,000	30	1,587	---
Bi-State Development Agency	Saint Louis	MO	Light rail extension preliminary engineering	8,000,000	120	426*	---
Bi-State Development Agency	Saint Louis	MO	Headquarters building rehabilitation	230,000	60	13	---
Bi-State Development Agency	Saint Louis	MO	Kiel center station access and park	3,700,000	120	203	---
Bi-State Development Agency	Saint Louis	MO	TOTAL OF ALL PROJECTS	115,673,000	30/120	6,198	32
County of Morris DOT Management	Morristown	NJ	High Bridge Branch Railroad reactivation	754,500	45	500	475
County of Morris DOT Management	Morristown	NJ	Multi-modal park and ride center	3,250,000	100	50	---
County of Morris DOT Management	Morristown	NJ	TOTAL OF ALL PROJECTS	4,004,500	45/100	550	475
NJ Transit	Newark	NJ	Cherry Hill station construction	1,000,000	120	30	---
NJ Transit	Newark	NJ	Grade crossing rehabilitation	3,000,000	120	90	---
NJ Transit	Newark	NJ	Tie program	2,000,000	120	60	---
NJ Transit	Newark	NJ	Newark Penn Station repair	500,000	120	15	---
NJ Transit	Newark	NJ	Amper Station demolition	350,000	120	11	---
NJ Transit	Newark	NJ	Weehauken bus lot site improvements	500,000	120	15	---
NJ Transit	Newark	NJ	Wilwood terminal construction	450,000	120	14	---
NJ Transit	Newark	NJ	Elberon station construction	570,000	120	14	---
NJ Transit	Newark	NJ	Point Pleasant station	1,100,000	120	33	---
NJ Transit	Newark	NJ	Market Street garage construction	32,000,000	180	160	---
NJ Transit	Newark	NJ	Hoboken terminal and yards design	10,000,000	150	50	---
NJ Transit	Newark	NJ	South Amboy PCB remediation	9,000,000	150	45	---
NJ Transit	Newark	NJ	Exchange Place transit hubs	3,600,000	150	15	---
NJ Transit	Newark	NJ	Gateway park/ride	7,000,000	150	35	---
NJ Transit	Newark	NJ	Metropark parking deck	26,000,000	120	130	---
NJ Transit	Newark	NJ	TOTAL OF ALL PROJECTS	97,070,000	120/180	717	---

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential Jobs (b)	Jobs Beyond 1993
City of Albuquerque	Albuquerque	NM	Bus stop signage program	525,000	120	9	3
City of Albuquerque	Albuquerque	NM	TOTAL OF ALL PROJECTS	525,000	120	9	3
Capital District Transp. Auth.	Albany	NY	Replacement of 10 full-size transit buses	2,500,000	30	50	0
Capital District Transp. Auth.	Albany	NY	TOTAL OF ALL PROJECTS	2,500,000	30	50	0
MIA/MTCIA	New York	NY	Scheduled maintenance system	9,000,000	30	447	38
MIA/MTCIA	New York	NY	Upgrade lighting 20 stations	800,000	30	32	0
MIA/MTCIA	New York	NY	Passenger information screens - design	400,000	30	17	4
MIA/MTCIA	New York	NY	58 st/Columbus Circle BMT line - design	800,000	30	8	19
MIA/MTCIA	New York	NY	In-house station condition survey	500,000	30	13	30
MIA/MTCIA	New York	NY	Fan plant wrap up - 9 locations	900,000	30	29	3
MIA/MTCIA	New York	NY	Line structure rehab: Atlantic-Bergen	3,500,000	30	42	7
MIA/MTCIA	New York	NY	1993 sidewalk vent reconstruction	1,400,000	30	160	47
MIA/MTCIA	New York	NY	Signal enclosures White Plains line	1,300,000	30	75	0
MIA/MTCIA	New York	NY	Repair Edgewater depot bulkhead - design	200,000	30	65	6
MIA/MTCIA	New York	NY	Revenue extraction/sorting equipment - design	100,000	30	12	0
MIA/MTCIA	New York	NY	Waste water control: 3 locations - design	400,000	30	5	0
MIA/MTCIA	New York	NY	188 rapid transit rubber tire service veh.	5,500,000	30	23	0
MIA/MTCIA	New York	NY	Asbestos abatement - design	700,000	30	133	162
MIA/MTCIA	New York	NY	Underground tank replacement program-1	13,000,000	30	38	0
MIA/MTCIA	New York	NY	Speed indication system - 752 cars	1,200,000	45	80	542
MIA/MTCIA	New York	NY	1994 station signage initiative - design	200,000	45	11	0
MIA/MTCIA	New York	NY	Station rehabilitation program: 1994 - design	12,400,000	45	335	335
MIA/MTCIA	New York	NY	Water condition remedy study: 1993	100,000	45	5	0
MIA/MTCIA	New York	NY	Platform edge gap reduction	1,000,000	45	54	0
MIA/MTCIA	New York	NY	Fan plant rehab: 3 locations - design	600,000	45	28	9
MIA/MTCIA	New York	NY	Pump facility rehab: 6 locations - design	1,000,000	45	31	21
MIA/MTCIA	New York	NY	Replace submarine cables - design	3,300,000	45	15	2
MIA/MTCIA	New York	NY	Signal equipment - design, Dyra, White Plains	5,800,000	45	122	191
MIA/MTCIA	New York	NY	Signal equipment - des. Jn. Pelham	4,600,000	45	169	99
MIA/MTCIA	New York	NY	Signal equipment - design, Sea Beach	2,000,000	45	54	54
MIA/MTCIA	New York	NY	Substation equipment - design, Tudor	800,000	45	12	11
MIA/MTCIA	New York	NY	Coney Island motor/electronics shop - design	1,000,000	45	32	22
MIA/MTCIA	New York	NY	Asbestos abatement survey	600,000	45	32	0
MIA/MTCIA	New York	NY	Fire protection remedy: 1993	2,500,000	45	102	34

Transit Agency	City	State	Project Description	1993 Federal Funding		No. of Days to Obligate	Potential Jobs Beyond 1993	
				Needed (a)	Jobs (b)			
MIA/NYCTA	New York	NY	Purchase 300 ADA/CAA buses - design	2,000,000	60	84	21	
MIA/NYCTA	New York	NY	Fen plant wrap up: 11 locations - % design	700,000	60	32	8	
MIA/NYCTA	New York	NY	Replace equip: South Channel bridge - design	1,400,000	60	78	0	
MIA/NYCTA	New York	NY	Substation equip: Commonwealth - design	700,000	60	25	12	
MIA/NYCTA	New York	NY	Substation equip: Broad Channel - design	500,000	60	18	9	
MIA/NYCTA	New York	NY	Railings and turnstiles: 1994	3,000,000	90	81	81	
MIA/NYCTA	New York	NY	Upgrade/repair track geometry car	1,000,000	90	58	0	
MIA/NYCTA	New York	NY	Police antenna cable: 1994 - design	600,000	90	21	13	
MIA/NYCTA	New York	NY	Rehop RTD employee facility - design	300,000	90	15	2	
MIA/NYCTA	New York	NY	New bus purchases: 300 buses (1993)	69,300,000	120	2,805	935	
MIA/NYCTA	New York	NY	Grand Central platform - design	7,100,000	120	115	268	
MIA/NYCTA	New York	NY	E/D access - various locations - design	500,000	120	14	14	
MIA/NYCTA	New York	NY	Substation enclosure: Broadway/Houston	5,900,000	120	54	264	
MIA/NYCTA	New York	NY	E 180th St. maintenance shop rehab - design	4,700,000	120	128	128	
MIA/NYCTA	New York	NY	New iron shop south - design	1,100,000	120	30	30	
MIA/NYCTA	New York	NY	Repair crosstown paint shop bulkhead - design	300,000	120	17	0	
MIA/NYCTA	New York	NY	Crosstown sewer connection - design	100,000	120	5	5	
MIA/NYCTA	New York	NY	Improve facade: District 4-Union Square	400,000	120	23	0	
MIA/NYCTA	New York	NY	Underground tank replacement (1994) - design	800,000	120	9	23	
MIA/NYCTA	New York	NY	Rehab employee toilets & locker room (1993)	4,100,000	120	111	111	
MIA/NYCTA	New York	NY	Franklin Ave shuttle rehab - design	5,200,000	150	79	204	
MIA/NYCTA	New York	NY	Mezzanine rehab: 5 locations - design	1,200,000	150	31	31	
MIA/NYCTA	New York	NY	Substation enclosure: Hillside - design	300,000	150	5	11	
MIA/NYCTA	New York	NY	Substation equipment: Hillside - design	800,000	150	20	28	
MIA/NYCTA	New York	NY	128th St bus parking structure - design	900,000	150	21	29	
MIA/NYCTA	New York	NY	Car alarm systems - 112 subway cars	1,000,000	150	58	0	
MIA/NYCTA	New York	NY	Rehab 3 zone superintendent offices - design	500,000	150	14	14	
MIA/NYCTA	New York	NY	Track and contact rail replacement	3,800,000	30	189	16	
MIA/SIRTOA	New York	NY	Station rehab: 6 stations - design	1,300,000	45	28	42	
MIA/SIRTOA	New York	NY	Switch replacement II	2,400,000	45	97	32	
MIA/SIRTOA	New York	NY	Groton River bridge rehab	10,600,000	30	114	458	
MIA/Metro	New York	NY	RM security fencing	500,000	60	11	16	
MIA/Metro	New York	NY	Restore station canopies	600,000	90	13	19	
MIA/Metro	New York	NY	Replace railtop bridges/culvert	400,000	120	22	0	
MIA/Metro	New York	NY	Miscellaneous bridge rehabilitation	2,000,000	120	22	86	
MIA/Metro	New York	NY	Rebuild high voltage feeder - MAP yard	400,000	120	22	0	
MIA/Metro	New York	NY	Purchase event recorders	1,300,000	150	35	35	
MIA/Metro	New York	NY	Rehab station heating system	400,000	150	6	15	
MIA/Metro	New York	NY	Over Plains track work	700,000	150	19	19	
MIA/Metro	New York	NY	Cad system for valuation maps	800,000	150	15	30	
MIA/Metro	New York	NY	Grand Central terminal restoration	15,000,000	150	81	729	

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential Jobs (b)	Jobs Beyond 1993
MIA/Metro North Railroad	New York	NY	ADA employee facility	1,000,000	150	27	27
MIA/Metro North Railroad	New York	NY	Upper M/N signal system modifications	2,500,000	150	54	81
MIA/Metro North Railroad	New York	NY	Replace signal equip: New Haven line	900,000	150	15	34
MIA/Long Island Railroad	New York	NY	On board ASC test device - construction	1,900,000	30	26	77
MIA/Long Island Railroad	New York	NY	ADA compliance	7,600,000	30	610	0
MIA/Long Island Railroad	New York	NY	Communications component replacement program	2,800,000	30	150	0
MIA/Long Island Railroad	New York	NY	Valley tower - design	2,900,000	30	78	78
MIA/Long Island Railroad	New York	NY	Babylon-Patchogue reverse signaling - design	2,600,000	30	83	55
MIA/Long Island Railroad	New York	NY	Office renovation - purchasing department	300,000	30	15	0
MIA/Long Island Railroad	New York	NY	East River tunnel safety improv. - design	2,400,000	30	52	79
MIA/Long Island Railroad	New York	NY	Huntington parking improvements - construct.	6,500,000	45	141	211
MIA/Long Island Railroad	New York	NY	Station rehab and accessibility	6,900,000	45	112	261
MIA/Long Island Railroad	New York	NY	Morris Park heating plant replacement	2,600,000	45	124	14
MIA/Long Island Railroad	New York	NY	Regulatory and compliance issues	1,700,000	45	61	33
MIA/Long Island Railroad	New York	NY	Woodside station rehab	900,000	60	32	17
MIA/Long Island Railroad	New York	NY	ROM improvements - construction	2,700,000	60	145	0
MIA/Long Island Railroad	New York	NY	Huntington station rehab - design	400,000	120	7	13
MIA/Long Island Railroad	New York	NY	Rosetonoma parking improvements	7,700,000	150	83	333
MIA/Long Island Railroad	New York	NY	Diesel hauled coach purchase - design	4,400,000	150	95	143
MIA/Long Island Railroad	New York	NY	Cab car purchase - design	1,000,000	150	21	31
MIA/Long Island Railroad	New York	NY	Jamaica station rehab	3,000,000	150	81	81
MIA/Long Island Railroad	New York	NY	East River tunnel safety improvement	6,600,000	150	213	142
MIA/TBTA	New York	NY	Deck replacement	1,100,000	30	45	15
MIA/TBTA	New York	NY	Hazardous material/asbestos removal	1,600,000	30	86	0
MIA/TBTA	New York	NY	Queens concrete ramps rehab	300,000	60	6	10
MIA/TBTA	New York	NY	ADA facility modification	400,000	60	22	0
MIA/TBTA	New York	NY	Rehabilitation of tunnel ceiling and walls	2,500,000	90	54	81
MIA/TBTA	New York	NY	Roadway drain replacement - Manhattan	300,000	90	10	8
MIA/TBTA	New York	NY	Underground tank replacement all facilities	3,300,000	150	89	89
Metropolitan Transportation Auth.	New York	NY	TOTAL OF ALL PROJECTS	306,400,000	30/150	9,281	7,289
Greater Glens Falls Transit	Queensbury	NY	Two "trolley" buses for tourist circulation	300,000	Immediate	16 *	3
Greater Glens Falls Transit	Queensbury	NY	One paratransit bus for ADA service	60,000	Immediate	3 *	1
Greater Glens Falls Transit	Queensbury	NY	TOTAL OF ALL PROJECTS	360,000	Immediate	20 *	4

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential 1993 Jobs (b)	Jobs Beyond 1993
Central New York RTA	Syracuse	NY	Purchase 25 CMG fueled buses	5,200,000	60	277 *	---
Central New York RTA	Syracuse	NY	Automatic vehicle locator system	480,000	100	26 *	---
Central New York RTA	Syracuse	NY	Construct CMG fueling station	4,000,000	100	100	---
Central New York RTA	Syracuse	NY	TOTAL OF ALL PROJECTS	9,680,000	60/100	403 *	---
METRO Regional Transit Authority	Akron	OH	Twenty-five ADA accessible buses	4,875,000	60	260 *	---
METRO Regional Transit Authority	Akron	OH	Four buses to develop U. of Akron shuttle	300,000	70	16 *	3
METRO Regional Transit Authority	Akron	OH	Establish Northcoast Express bus routes	1,000,000	75	3	3
METRO Regional Transit Authority	Akron	OH	Automatic vehicle locator system	500,000	90	2	1
METRO Regional Transit Authority	Akron	OH	TOTAL OF ALL PROJECTS	6,675,000	60/90	281	7
Greater Cleveland RTA	Cleveland	OH	New bus garage supplemental funds	5,000,000	Short-term	267 *	---
Greater Cleveland RTA	Cleveland	OH	Woodhill bus garage rehabilitation	16,500,000	Short-term	879 *	---
Greater Cleveland RTA	Cleveland	OH	Rehabilitate 3 garages for CMG fueling	3,000,000	Short-term	160	---
Greater Cleveland RTA	Cleveland	OH	Bus loop rehabilitation (construction)	500,000	Short-term	27	---
Greater Cleveland RTA	Cleveland	OH	Revenue facility expansion (design/const.)	500,000	Short-term	27	---
Greater Cleveland RTA	Cleveland	OH	Red line track rehabilitation	3,300,000	Short-term	176	---
Greater Cleveland RTA	Cleveland	OH	Rail station rehabilitation	6,192,000	Short-term	330	---
Greater Cleveland RTA	Cleveland	OH	Track bridge rehabilitation (design)	500,000	Short-term	27	---
Greater Cleveland RTA	Cleveland	OH	Shelters	660,000	Short-term	35	---
Greater Cleveland RTA	Cleveland	OH	Revenue vehicles	5,763,000	Short-term	307 *	---
Greater Cleveland RTA	Cleveland	OH	TOTAL OF ALL PROJECTS	41,915,000	Short-term	2,234 *	---
Central Ohio Transit Authority	Columbus	OH	Purchase 350 two-way radios and new base sys.	2,160,000	90	115 *	0
Central Ohio Transit Authority	Columbus	OH	TOTAL OF ALL PROJECTS	2,160,000	90	115 *	0
Miami Valley RTA	Dayton	OH	Complete purchase 61 electric trolley buses	15,000,000	Short-term	663	663
Miami Valley RTA	Dayton	OH	Electric trolley bus infrastructure	2,647,000	Short-term	94	---
Miami Valley RTA	Dayton	OH	ETB power supply system engineering	1,800,000	Short-term	60	---
Miami Valley RTA	Dayton	OH	Salem mall passenger facility	600,000	Short-term	23	7
Miami Valley RTA	Dayton	OH	TOTAL OF ALL PROJECTS	20,047,000	Short-term	840	670

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential 1993 Jobs (b)	Jobs Beyond 1993
Laketran	Grand River	OH	Purchase 19 large paratransit vans	950,000	120	51*	---
Laketran	Grand River	OH	Purchase 19 small paratransit vans	760,000	120	41*	---
Laketran	Grand River	OH	Purchase 7 CMG fueled 30-35 foot buses	250,000	120	13*	---
Laketran	Grand River	OH	Construct Madison Township park and ride lot	300,000	Over 120	16*	---
Laketran	Grand River	OH	Construct two passenger transfer stations	400,000	Over 120	21*	---
Laketran	Grand River	OH	Automatic vehicle locator system	2,000,000	Over 120	107*	---
Laketran	Grand River	OH	TOTAL OF ALL PROJECTS	4,660,000	120 +	248*	---
Toledo Area Regional Transit Auth.	Toledo	OH	Purchase 60 replacement buses	13,200,000	60/90	704*	---
Toledo Area Regional Transit Auth.	Toledo	OH	Purchase 220 electronic fareboxes	1,100,000	60/120	59*	---
Toledo Area Regional Transit Auth.	Toledo	OH	TOTAL OF ALL PROJECTS	14,300,000	60/120	762*	---
COFTA	Oklahoma City	OK	Ten 30 foot replacement buses	1,750,000	Immediate	93*	---
COFTA	Oklahoma City	OK	TOTAL OF ALL PROJECTS	1,750,000	Immediate	93*	---
Lehigh and Northampton TA	Allentown	PA	Purchase five 26 foot low floor buses	624,000	90	42	45
Lehigh and Northampton TA	Allentown	PA	Purchase 10 accessible vans/ minibuses	264,000	90	20	50
Lehigh and Northampton TA	Allentown	PA	TOTAL OF ALL PROJECTS	888,000	90	62	95
Area Transportation Authority	Johnsbourg	PA	Administrative/maintenance facilities	3,373,160	100	70	39
Area Transportation Authority	Johnsbourg	PA	TOTAL OF ALL PROJECTS	3,373,160	100	70	39
Cambria County Transit Authority	Johnstown	PA	Shop tools, equipment, and parts	90,000	90	5*	---
Cambria County Transit Authority	Johnstown	PA	Computer hardware/software	70,000	90	4*	---
Cambria County Transit Authority	Johnstown	PA	Office equipment/furniture	32,000	90-	2*	---
Cambria County Transit Authority	Johnstown	PA	Bus shelters, stop signs and standards	36,000	90	2*	---
Cambria County Transit Authority	Johnstown	PA	Facility air circulation equipment	250,000	90	3	0
Cambria County Transit Authority	Johnstown	PA	Garage roof	60,000	90	6	0
Cambria County Transit Authority	Johnstown	PA	Garage expansion	150,000	90	6	2
Cambria County Transit Authority	Johnstown	PA	Storm water system	60,000	90	6	0
Cambria County Transit Authority	Johnstown	PA	Maintenance facility floor replacement	200,000	90	8	0

Transit Agency	City	State	Project Description	1993 Federal Funding		No. of Days to Obligate	Potential 1993 Jobs (b)	Jobs Beyond 1993
				(a)	(b)			
Cambria County Transit Authority	Johnstown	PA	Maintenance facility repairs	25,000	90	8	0	
Cambria County Transit Authority	Johnstown	PA	Two accessible paratransit vans	50,000	90	3	---	
Cambria County Transit Authority	Johnstown	PA	Transit center equipment	12,000	90	1	---	
TOTAL OF ALL PROJECTS				1,035,000	90	52	2	
Southeastern Penn.	Philadelphia	PA	Market-Frankfort 220 car acquisition	320,000,000	30	2,432	21,888	
Southeastern Penn.	Philadelphia	PA	Market-elevated reconstruction project	48,000,000	180	365	3,283	
Southeastern Penn.	Philadelphia	PA	Broad Street subway signals modernization	64,000,000	120	730	4,134	
Southeastern Penn.	Philadelphia	PA	Market-Frankfort infrastructure improvements	4,800,000	120	109	255	
Southeastern Penn.	Philadelphia	PA	Broad Street subway stations II-Engineering	4,000,000	120	152	152	
Southeastern Penn.	Philadelphia	PA	Transit station ADA accessibility compliance	3,200,000	90	162	81	
Southeastern Penn.	Philadelphia	PA	Utility fleet renewal	8,000,000	60	608	0	
Southeastern Penn.	Philadelphia	PA	Purchase 70 light rail vehicles	92,800,000	120	705	6,348	
Southeastern Penn.	Philadelphia	PA	LRT infrastructure improvements	25,600,000	120	195	1,751	
Southeastern Penn.	Philadelphia	PA	STD priority bridges reconstruction	8,000,000	60	406	202	
Southeastern Penn.	Philadelphia	PA	STD track and curve renewal	8,000,000	60	406	202	
Southeastern Penn.	Philadelphia	PA	City Transit Division track renewal	16,000,000	90	608	608	
Southeastern Penn.	Philadelphia	PA	RRD priority bridge reconstruction	8,000,000	60	202	406	
Southeastern Penn.	Philadelphia	PA	30th Street to suburban-cantenary rehab.	12,800,000	90	324	669	
Southeastern Penn.	Philadelphia	PA	30th Street to suburban-bridge reconstruction	2,000,000	90	76	76	
Southeastern Penn.	Philadelphia	PA	Wayne Junction-Glenside systems improvements	28,000,000	180	213	1,915	
Southeastern Penn.	Philadelphia	PA	RRD control center	24,000,000	60	365	1,459	
Southeastern Penn.	Philadelphia	PA	Chestnut Hill West systems improvements	24,000,000	60	547	1,277	
Southeastern Penn.	Philadelphia	PA	RRD electric traction power improvements	9,600,000	90	219	511	
Southeastern Penn.	Philadelphia	PA	Midvale bus garage	24,240,000	60	553	1,290	
Southeastern Penn.	Philadelphia	PA	Purchase 120 advanced design buses	23,040,000	90	876	876	
Southeastern Penn.	Philadelphia	PA	Underground storage tanks modernization	4,800,000	30	365	0	
TOTAL OF ALL PROJECTS				762,890,000	30/180	10,618	47,363	
Port Authority of Allegheny City	Pittsburgh	PA	Ross bus garage reconstruction	14,100,000	90	760	350	
Port Authority of Allegheny City	Pittsburgh	PA	Hd. Washington transit tunnel reconstruction	12,300,000	60	665	---	
Port Authority of Allegheny City	Pittsburgh	PA	Radio system modernization	9,800,000	60	530	---	
Port Authority of Allegheny City	Pittsburgh	PA	Procurement of 150 transit buses	31,500,000	30	1,700	400	
TOTAL OF ALL PROJECTS				67,700,000	30/90	3,655	750	

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential Jobs to 1993	Jobs Beyond 1993
Berks Area Reading Transp. Auth.	Reading	PA	PA consolidated bus procurement, 101 buses	12,780,000	30/60	1,279	---
Berks Area Reading Transp. Auth.	Reading	PA	Penn Square transp. and development project	800,000	30/90	213	127
Berks Area Reading Transp. Auth.	Reading	PA	Computer system upgrade, facility rehab.	700,000	90/120	38	127
Berks Area Reading Transp. Auth.	Reading	PA	Purchase ADA special service vehicles	600,000	90/120	32	127
Berks Area Reading Transp. Auth.	Reading	PA	TOTAL OF ALL PROJECTS	14,880,000	30/120	1,562	127
Central Area Transportation Auth.	State College	PA	CHG fueling station and 16 CHG fueled buses	3,856,000	90/120	206*	---
Central Area Transportation Auth.	State College	PA	TOTAL OF ALL PROJECTS	3,856,000	90/120	206*	---
Williamsport Bureau of Transp.	Williamsport	PA	Garage and office improvement project	500,000	30	50	---
Williamsport Bureau of Transp.	Williamsport	PA	Purchase 7 lift-equipped transit vehicles	1,650,000	120	88*	---
Williamsport Bureau of Transp.	Williamsport	PA	TOTAL OF ALL PROJECTS	2,150,000	30/120	138	---
York County Transportation Auth.	York	PA	Improvements to downtown transfer center	200,000	30	11*	---
York County Transportation Auth.	York	PA	TOTAL OF ALL PROJECTS	200,000	30	11*	---
Metropolitan Bus Authority	Hato Ray	PR	Purchase 15 paratransit accessible vehicles	825,000	60	44*	---
Metropolitan Bus Authority	Hato Ray	PR	TOTAL OF ALL PROJECTS	825,000	60	44*	---
Memphis Area Transit Authority	Memphis	TN	Rail trolley vehicle refurbishment	5,200,000	30	20	30
Memphis Area Transit Authority	Memphis	TN	Trolley maint. facility enhance. and equip.	750,000	30	10	0
Memphis Area Transit Authority	Memphis	TN	Purchase 25 standard buses	5,000,000	30	90	0
Memphis Area Transit Authority	Memphis	TN	Purchase 5 vehicles for paratransit service	800,000	30	18	12
Memphis Area Transit Authority	Memphis	TN	Passenger amenity corridor improvements	300,000	30	10	0
Memphis Area Transit Authority	Memphis	TN	TOTAL OF ALL PROJECTS	12,050,000	30	148	42
Capital Area Rural Transp. System	AUSTIN	TX	San Marcos transit project implementation	1,127,500	60/90	25	9
Capital Area Rural Transp. System	Austin	TX	TOTAL OF ALL PROJECTS	1,127,500	60/90	25	9

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	Mo. of Days to Obligate	Potential 1993 Jobs (b)	Jobs Beyond 1993
Bee Community Action Agency	Beeville	TX	Vehicle maintenance facility	100,220	90	5*	---
Bee Community Action Agency	Beeville	TX	TOTAL OF ALL PROJECTS	100,220	90	5*	---
Sun Metro	El Paso	TX	33 full size alternate fuel buses	7,035,600	30	375*	---
Sun Metro	El Paso	TX	27 demand response alternate fuel vehicles	1,640,500	30	89*	---
Sun Metro	El Paso	TX	Contingencies	848,400	30	45*	---
Sun Metro	El Paso	TX	TOTAL OF ALL PROJECTS	9,544,500	30	509*	49
Fort Worth Transportation Auth.	Fort Worth	TX	Rebuild and expand maintenance facility	11,700,000	60	200	100
Fort Worth Transportation Auth.	Fort Worth	TX	Renovate intermodal transportation center	500,000	60	50	25
Fort Worth Transportation Auth.	Fort Worth	TX	TOTAL OF ALL PROJECTS	12,200,000	60	250	125
VIA Metropolitan Transit	San Antonio	TX	Bus rolling stock alternate fuel costs	3,256,000	Immediate	174*	---
VIA Metropolitan Transit	San Antonio	TX	Bus support/facilities alternate fuel costs	136,800	Immediate	7*	---
VIA Metropolitan Transit	San Antonio	TX	Bus support equipment/facilities	8,281,160	Immediate	441*	---
VIA Metropolitan Transit	San Antonio	TX	Bus other capital items	575,728	Immediate	31*	---
VIA Metropolitan Transit	San Antonio	TX	Restoration historic Sunset train depot	2,500,000	90/300	100	100
VIA Metropolitan Transit	San Antonio	TX	Vehicle facility rehab. and improvements	2,100,000	30/300	84	84
VIA Metropolitan Transit	San Antonio	TX	Transit portion city street improvements	5,000,000	90/300	200	200
VIA Metropolitan Transit	San Antonio	TX	TOTAL OF ALL PROJECTS	21,849,688	Imm./300	1,037	364
Utah Transit Authority	Salt Lake City	UT	Purchase 13 buses for expansion	2,286,000	120	32	---
Utah Transit Authority	Salt Lake City	UT	Construction of Fleettrans facility-phase I	2,000,000	120	25	---
Utah Transit Authority	Salt Lake City	UT	Additions/repairs Meadowbrook facility	320,000	90	30	---
Utah Transit Authority	Salt Lake City	UT	Street furniture and support (ADA needs)	14,400	60	6	---
Utah Transit Authority	Salt Lake City	UT	Four spare power trains for buses	240,000	120	3	---
Utah Transit Authority	Salt Lake City	UT	Purchase 11 vans to meet ADA requirements	495,000	90	11	---
Utah Transit Authority	Salt Lake City	UT	Bus PA systems and padding for ADA requir.	193,500	120	6	---
Utah Transit Authority	Salt Lake City	UT	Computer/communications system equipment	120,000	90	5	---
Utah Transit Authority	Salt Lake City	UT	Transportation planning	90,000	90	4	---
Utah Transit Authority	Salt Lake City	UT	Transit center hubs	800,000	120	20	---
Utah Transit Authority	Salt Lake City	UT	TOTAL OF ALL PROJECTS	6,560,900	60/120	142	---

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential Jobs (b)	Jobs Beyond 1993
Peninsula Transp. Dist.	Commission Hampton	VA	Purchase twenty 40 foot replacement buses.	3,600,000	60	192 *	...
Peninsula Transp. Dist.	Commission Hampton	VA	TOTAL OF ALL PROJECTS	3,600,000	60	192 *	...
Chittenden County Transp. Auth.	Burlington	VT	Facility expansion/renovation	1,528,500	30	25	...
Chittenden County Transp. Auth.	Burlington	VT	Replace 9 buses	1,739,700	30	93 *	...
Chittenden County Transp. Auth.	Burlington	VT	Passenger amenities/support equipment	250,100	30	2	...
Chittenden County Transp. Auth.	Burlington	VT	TOTAL OF ALL PROJECTS	3,518,300	30	120 *	...
Kitsap Transit	Bremerton	WA	10 accessible buses, used/rehabbed 40 foot	900,000	90	30	5
Kitsap Transit	Bremerton	WA	30 new 12 passenger vans	600,000	60	20	2
Kitsap Transit	Bremerton	WA	10 new 25 passenger buses with lifts	1,200,000	90	30	2
Kitsap Transit	Bremerton	WA	40 passenger shelters	200,000	60	10	2
Kitsap Transit	Bremerton	WA	One 50-100 passenger ferry	400,000	90	10	2
Kitsap Transit	Bremerton	WA	TOTAL OF ALL PROJECTS	3,300,000	60/90	100	13
Community Transit	Lynnwood	WA	ADA bus zone enhancement	180,000	120	1	...
Community Transit	Lynnwood	WA	Edmonds transit center siting and design	100,000	120	1	2
Community Transit	Lynnwood	WA	Marysville park and ride lot siting study	300,000	120	2	24
Community Transit	Lynnwood	WA	Mariner park and ride lot expansion	290,000	120	2	12
Community Transit	Lynnwood	WA	Bus pull outs	100,000	120	2	...
Community Transit	Lynnwood	WA	Central operating base expansion design	590,000	120	3	22
Community Transit	Lynnwood	WA	Bus rebuilding program	1,140,000	120	10	18
Community Transit	Lynnwood	WA	TOTAL OF ALL PROJECTS	2,700,000	120	21	78
Jefferson Transit	Port Townsend	WA	ADA compliance project	330,000	90	13	2
Jefferson Transit	Port Townsend	WA	Maintenance facility upgrade	40,000	60	1	...
Jefferson Transit	Port Townsend	WA	Passenger amenity improvement program	78,000	60	2	1
Jefferson Transit	Port Townsend	WA	"frolley" shuttle for tourist congestion	440,000	90	10	2
Jefferson Transit	Port Townsend	WA	TOTAL OF ALL PROJECTS	880,000	60/90	26	5

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	Mo. of Days to Obligate	Potential Jobs (b)	Jobs Beyond 1993
Metro Seattle	Seattle	WA	Rainier transit signal priority project	500,000	120	38 *	---
Metro Seattle	Seattle	WA	TOTAL OF ALL PROJECTS	500,000	120	38 *	---
Spokane Transit	Spokane	WA	Purchase 8 lift-equipped shuttle buses	1,624,000	120	98 *	---
Spokane Transit	Spokane	WA	Purchase 10 lift-equipped replacement buses	2,270,000	120	121 *	---
Spokane Transit	Spokane	WA	Purchase 5 lift-equipped paratransit vans	243,500	120	13 *	---
Spokane Transit	Spokane	WA	Transit support vehicles and equipment	292,000	120	17 *	---
Spokane Transit	Spokane	WA	TOTAL OF ALL PROJECTS	4,429,500	120	248 *	---
Pierce Transit	Tacoma	WA	Federal way park and ride expansion	1,500,000	120	35	0
Pierce Transit	Tacoma	WA	Vanpool fleet expansion, 11 vehicles	233,000	120	13 *	---
Pierce Transit	Tacoma	WA	TOTAL OF ALL PROJECTS	1,733,000	120	48	---
Kenosha Transit	Kenosha	WI	Install lifts on six buses	118,500	90	3	0
Kenosha Transit	Kenosha	WI	Remodal shop into administrative space	27,257	90	1	0
Kenosha Transit	Kenosha	WI	Phone system update	6,000	90	1	0
Kenosha Transit	Kenosha	WI	Computer system update	8,550	30	1	0
Kenosha Transit	Kenosha	WI	Shelter rehabilitation	32,000	30	1	0
Kenosha Transit	Kenosha	WI	Supervisors van with wheel chair lift	20,000	90	1	0
Kenosha Transit	Kenosha	WI	Six CMG powered buses	1,296,000	90	12	0
Kenosha Transit	Kenosha	WI	TOTAL OF ALL PROJECTS	1,508,307	30/90	20	0

Transit Agency	City	State	Project Description	1993 Federal Funding Needed (a)	No. of Days to Obligate	Potential 1993 Jobs (b)	Jobs Beyond 1993
LaCrosse Municipal Transit Util.	LaCrosse	WI	Purchase six 30 foot transit buses	1,080,000	120	56*	---
LaCrosse Municipal Transit Util.	LaCrosse	WI	One ADA equipped paratransit minibus	30,000	120	2	---
LaCrosse Municipal Transit Util.	LaCrosse	WI	Update computer for ADA paratransit	16,500	120	1	---
LaCrosse Municipal Transit Util.	LaCrosse	WI	TOTAL OF ALL PROJECTS	1,126,500	120	61	---

* Number of direct and indirect jobs estimated by APTA based on cost data provided by respondent. Job totals estimated by respondents do not normally include indirect jobs, some only include employment at responding agency, not at supplier or manufacturer of materials or products purchased.

SW Actual time to start work on project including obligation period.

(a) Current federal share only where differentiated; entire amount if local share waiver needed for immediate expenditure.

(b) APTA estimates (marked *) include direct and indirect jobs measured in person-years.

Appendix One**Facsimile Survey Request**

Sent 9:00 a.m. February 2, 1993

To: APTA U.S. Transit System Members

From: Jack R. Gilstrap, Executive Vice President

Subject: Ready-to-Go Projects: Urgent Information Request

We have had an urgent information request from the U.S. Conference of Mayors to provide information to the Clinton Administration on "Ready-to-Go" transit projects by close of business on February 4. The request was made personally by Federico Peña, Secretary of Transportation, and the information we provide will help shape Administration proposals for a short term economic stimulus package. For purposes of this survey, "ready-to-go" means a project for which funds can be obligated within 120 days and the project will be finished within calendar 1993.

If you have such a project or projects, please answer the questions set out below and FAX your response to John Neff by COB February 4, FAX number (202) 898-4049, or if you have questions please contact Mr. Neff at (202) 898-4112. APTA will develop a response for all APTA members.

For each project please supply, in the order listed, the following information:

1. Description: (Be brief)
2. 1993 funding needed:
3. Number of days needed to obligate funding:
4. Potential 1993 jobs:
5. Employment potential beyond 1993:

Note: All projects listed must have completed all necessary local approval processes, such as engineering and environmental reviews, and be able to move forward immediately to obligate funding within a maximum of 120 days and complete construction within calendar 1993.

Thanks for your help.

AMERICAN PUBLIC TRANSIT ASSOCIATION

FINAL REPORT:
SURVEY OF ABILITY TO SPEND FEDERAL
TRANSIT FUNDS DURING FISCAL YEAR 1993

SUMMARY OF FINDINGS:
Transit Agencies Need and Can Spend \$7 Billion
of Additional Federal Funds Creating
405,000 New Jobs During Fiscal Year 1993

- o Transit agencies can spend \$7 billion dollars in new federal funds during Fiscal Year 1993 if additional federal funds are made available.
- o This is in addition to \$4.8 billion in federal funds currently available to transit agencies from all federal sources during Fiscal Year 1993.
- o The \$7 billion in additional federal funding would result in 405,000 jobs, directly and indirectly.
- o Nearly 40 percent of the needed funds are for transit vehicles to replace over-age buses, vans, and rail cars. The additional \$1.2 billion of federal funds for buses and vans would purchase 8,370 more vehicles. These buses and vans are urgently needed to replace expensive-to-maintain vehicles currently in service and to provide vehicles to meet the requirements of the Americans with Disabilities Act.
- o Full appropriation of the Intermodal Surface Transportation Efficiency Act (ISTEA) authorization for Fiscal Year 1993 would have provided \$1.5 billion of the additional funds transit agencies could spend this year. Full appropriation of ISTEA would also provide an additional \$105 million for research and training, administration of the transit program, and grants to social service agencies.

Transit Agencies Expect to Spend \$4.8 Billion
In Currently Available Funds During Fiscal Year 1993

Transit agencies expect to spend over \$4.8 billion dollars in already available federal funds during Fiscal Year 1993. These expenditures include funds appropriated to the Federal Transit Administration (FTA) for Fiscal Year 1993, carry-over funds from previous years' appropriations that have not yet been obligated, flexible funds from Federal Aid Highways appropriations transferred to transit use in accordance with provisions of the Intermodal Surface Transportation Efficiency Act (ISTEA), and funds from other federal agencies used for transit purposes.

The federal funds will be spent for a variety of purposes. Fifteen percent of the expenditure is planned for operations, 17 percent for new buses and vans, 23 percent for

new start fixed-guideway system infrastructure, 17 percent for modernization of existing fixed-guideway systems, 2 percent for new rail cars, 17 percent for other new buildings and facilities, and 10 percent for other capital purposes.

Transit Agencies Need and Can Spend an Additional \$7.0 Billion in Federal Funds During Fiscal Year 1993

Transit agencies could spend an additional \$7 billion in federal funds during Fiscal Year 1993 for maintenance and operations, to buy capital equipment and build infrastructure, to increase service to meet federal mandates, and provide increased service demanded by growing communities. The funds would be spent for the wide variety of uses shown on Table 1.

TABLE 1: ADDITIONAL FEDERAL FUNDS THAT WOULD BE SPENT IN FISCAL YEAR 1993

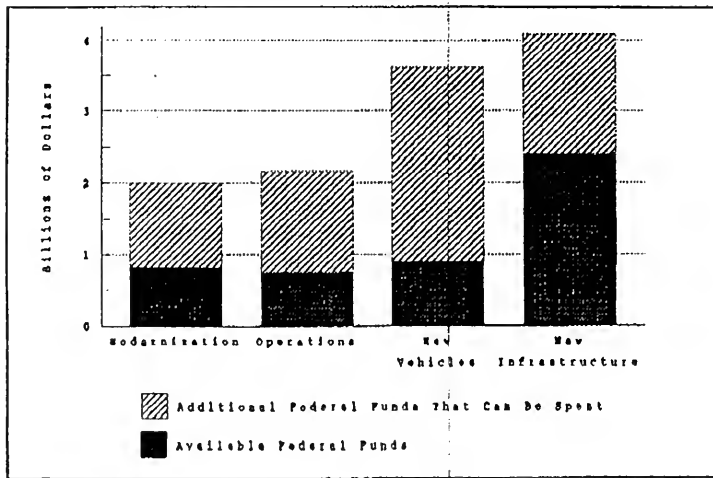
Use of Funds	Amount	Percent of Funds
Operations	\$1.43 billion	20.3 %
Buses and Vans	1.21 billion	17.1 %
Other Vehicles	1.53 billion	21.8 %
Fixed-Guideway Modernization	1.19 billion	17.0 %
New Starts	0.60 billion	7.1 %
Other Facilities	0.63 billion	12.5 %
Other Purposes	0.30 billion	4.2 %
Total	7.04 billion	100.0 %

Funds that can be expended include 20 percent for operations, 39 percent for buses, vans, and rail cars, 17 percent for fixed-guideway modernization, 7 percent for new start fixed-guideway construction, and 17 percent for other capital purposes. This distribution of needs is different from the way federal funds already available are projected to be spent.

A larger percentage of expenditure would be directed toward new vehicles and operations and a smaller percentage for fixed-guideway new starts, other facilities, and other capital purposes. Although this shift reflects in part the needs of transit agencies, it is also a recognition of the purposes for which funds can be most quickly spent. Survey respondents were restricted to reporting only needed federal funds that could be spent by the end of Fiscal Year 1993 or for which contracts for capital projects could be signed and work begun before the end of Fiscal Year 1993.

Figure 1 shows the amount of additional funds that could be expended compared to available funds by use. Transit agencies could spend a total of \$2.0 billion for fixed-guideway modernization, 148 percent more than the amount available from all federal sources. Potential expenditures of \$2.2 billion for operations are 192 percent more than available federal funds, of \$3.6 billion for new vehicles are 305 percent more than available, and of \$4.1 billion for new infrastructure are 70 percent more than available.

FIGURE 1: TRANSIT AGENCY ABILITY TO SPEND ADDITIONAL FUNDS IN FY 1993 COMPARED TO AVAILABLE FEDERAL FUNDS BY USE



The Additional Spending Would Create 405,000 Jobs

Additional federal funding of \$7 billion would result in an additional 405,000 jobs with each job equal to one person-year of employment. The jobs created include both direct employment by transit agencies and in industries providing goods and services and building infrastructure for transit agencies and indirect jobs resulting from the effects of those expenditures in the economy.

Approximated 58,000 jobs are created for each \$1 billion of transit spending. The number of jobs created by specific use of additional transit spending are shown on Table 2. Investment in operations has the greatest potential for rapid job creation and creating the largest number of jobs. Spending for operations results in 68,000 jobs per \$1 billion while capital investment results in 53,000 to 57,000 jobs per \$1 billion.

The job creation potential of transit projects is estimated by APTA using input-output analysis techniques. Other researchers have described the positive impact of transit investment on the economy. Michael Renner of the Worldwatch Institute has described German studies showing light rail track construction generates up to 64 percent more jobs than highway construction.¹

The Urban Institute has found that shutting down the Southeastern Pennsylvania Transportation Authority (SEPTA) which employs 9,250 persons would result in a long-term loss of 175,000 jobs throughout Pennsylvania.² Economist David Aschauer has found that investment in transit infrastructure has more potential to stimulate long-run economic growth than does highway spending.³

TABLE 2: JOBS CREATED BY ADDITIONAL TRANSIT SPENDING IN FY 1993

Use of Funds	Funding In Billions of Dollars	Jobs Per Billion Dollars (a)	Total Jobs Created
Operations	\$ 1.43	68,000	97,300
Buses and Vans	1.21	55,000	66,600
Other Vehicles	1.53	55,000	84,200
Fixed-Guideway Modernization	1.19	54,000	64,300
New Starts	0.50	55,000	27,500
All Other Capital	1.18	55,000	64,900
Total	\$ 7.04	57,500	404,800

(a) Direct and indirect jobs equivalent to one person year of employment.

**An Additional \$2.7 Billion Can Be Spent for Vehicles,
\$1.4 Billion for Operations and
\$2.9 Billion for Other Capital Needs**

The use of additional federal funds would vary between types of transit agencies. Medium size bus systems would use 38 percent of additional funds for operations while larger bus systems, rail systems, and small bus systems would use only 18 to 19 percent of additional funds for operations. Table 3 shows the percent of additional funds needed by purpose for three groups of transit systems.

The first grouping is large bus systems which own or lease 501 or more buses and vans, any system operating only rail cars or ferry boats, and multi-modal systems operating any number of buses and vans plus three or more rail cars, trolley coaches, or ferry boats. The second group is medium size bus only systems which own or lease 151 to 500 buses and vans. The final group is small bus only systems which own or lease 150 or fewer buses and vans.

TABLE 3: PERCENT OF ADDITIONAL FUNDS NEEDED BY SYSTEM TYPE

Use of Funds	Type of Transit System		
	Multi-Mode, Rail, and Large Bus	Medium Bus Only	Small Bus Only
Operations	18.9 %	37.9 %	18.5 %
Buses and Vans	10.7 %	48.9 %	54.6 %
Other Vehicles	25.5 %	1.9 %	0.9 %
Fixed-Guideway Modernization	19.9 %	0.0 %	0.0 %
New Starts	8.0 %	2.7 %	1.9 %
Other Facilities	12.8 %	4.3 %	17.0 %
Other Capital	4.2 %	4.3 %	7.1 %

The primary need for small and medium size bus systems is for buses and vans. Medium size bus systems would spend 49 percent of additional federal funds for buses and vans, and small bus systems would spend 55 percent for buses and vans. Larger systems would still spend 10 percent of their funds for buses and vans but would devote 26 percent of additional funds to purchasing rail cars and other vehicles. The small percentage of funds designated for "other vehicles" by medium size and small bus systems is for service vehicles such as tow trucks and dispatcher vehicles.

**The Additional Spending Would Buy 8,370 New Buses and Vans;
Even Including Buses and Vans That Will be Bought With Available
Funds, 60 Percent of Bus and Van Needs Would Still Go Unmet**

The additional \$1.2 billion that would be spent for buses and vans would purchase approximately 8,370 new vehicles of all sizes. If the number of vehicles by size is in the same proportion as Federal Transit Administration-funded vehicles were in Fiscal Year 1991, the additional funds would provide for 4,110 full size buses of 35 feet or longer, 1,820 small buses of 30 feet or shorter, and 2,440 vans.⁴ This number of vehicles also assumes the deferral of state and local matching funds. If state or local matching funds are also included, the number of vehicles would be greater. A larger number of vehicles of any size could, of course, be purchased with a reduction in the number of vehicles of other sizes purchased.

As of January 1, 1992 there were 12,400 full size buses, 2,800 smaller buses, and 4,400 vans being operated that were older than their economically useful lives as defined by the Federal Transit Administration. Over age vehicles are not reliable, are expensive to maintain, and because they are expensive to maintain are used only when necessary while new vehicles are intensively used and wear out more quickly than necessary. New vehicles that meet the requirements of the Americans with Disabilities Act and The Clean Air Act increase mobility for the transit dependent and reduce air polluting emissions. APTA estimates that transit systems will also need up to 7,500 more vans and small buses to meet new mobility requirements recently mandated by the Americans with Disabilities Act.

Approximately 3,500 buses and vans are expected to be ordered in Fiscal Year 1993 with already-available funds. Even if those vehicles are added to the 8,370 that would be bought with additional funds, less than 40 percent of the buses and vans needed to meet ADA mandates, replace over age vehicles, and replace vehicles that will exceed their economic life this year will be purchased. The \$1.2 billion additional funds for buses and vans is only a portion of the funds needed to bring America's bus and van fleets to acceptable standards.

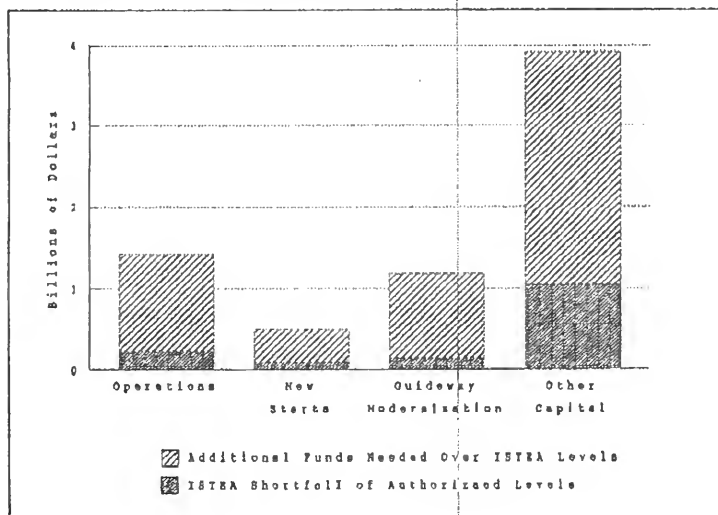
These numbers exclude a portion of vans needed for use by social service or other agencies eligible for Federal Transit Act Section 16(b) funding for elderly and disabled special services. On average over the past six years, the Federal Transit Administration has funded 1,400 to 1,500 of those vehicles. Because a very limited number of these agencies are APTA members, funds and vehicles for their use are not fully included in this projection. Full appropriation of the Fiscal Year 1993 authorization of the transit program--as proposed by APTA--would provide funds for an additional 650 vans for Section 16(b) service providers beyond those included in this report.

Full Funding of ISTEA Would Provide \$1.5 Billion of Additional Funds for Transit Agencies

Transit appropriations in Fiscal Year 1993 were \$1.6 billion less than the amount authorized by the Intermodal Surface Transportation Efficiency Act. Of that amount, \$1.5 billion is authorized for transit system uses and \$100 million is for research and training, Federal Transit Administration operations, and vehicles for social service agencies. APTA supports full appropriation of ISTEA as an essential goal in federal support of transit. Even if, however, ISTEA were appropriated at fully authorized levels, transit agencies would still be able to spend an additional \$5.5 billion during Fiscal Year 1993 to create jobs and improve America's infrastructure.

Figure 2 shows the uses of additional funds from a fully appropriated ISTEA and the additional amount transit systems could spend beyond full appropriation of ISTEA. The additional \$231 million that would be available for operations from full appropriation of ISTEA is 16 percent of the amount that can be spent, \$90 million for new starts is 18 percent of the amount that can be spent, \$146 million for fixed-guideway modernization is 12 percent of the amount that can be spent, and \$1 billion for other uses is 27 percent of the amount that can be spent.

FIGURE 2: PORTION OF ADDITIONAL SPENDABLE FUNDS THAT WOULD BE PROVIDED BY FULL APPROPRIATION OF ISTEA IN FISCAL YEAR 1993



Survey Results Are Estimated From Data From 113 APTA Members Operating 69 Percent of Transit Vehicles

The amounts reported for transit systems' ability to spend additional funds in Fiscal Year 1993 are based on responses by APTA members to a survey distributed at the end of October 1992. The survey asked each participant to identify (1) the amount of existing federal funds they anticipate spending in Fiscal Year 1993, i.e., amounts already apportioned or earmarked for their use and other funds they expect to receive from successful grant applications; and (2) of additional funds they could spend in Fiscal Year 1993. The local match for additional funds was assumed to be waived for capital uses for at least two years but not waived for funds used for operations. Spending was

defined as the actual outlay of operating funds and the signing of contracts or other instruments of obligation for capital funds that would allow contractors to commence work and create jobs.

Responses were received from 113 APTA member participants. Responses were solicited from all of the largest multi-modal transit systems and from a sample of other systems. The responding systems own and lease 69 percent of all transit vehicles operated by APTA members. APTA-member transit systems provide approximately 97 percent of all U.S. transit service.

Data from respondents was expanded to estimated totals for all transit systems in five categories of systems in order to account for the variation in needs between types of transit systems identified by vehicle mode and size. Those categories were (1) very large multi-modal transit systems where data was obtained from all identified transit systems, (2) other multi-modal and all rail-only systems, (3) large bus and van only transit systems, (4) medium size bus and van only transit systems, and (5) small bus and van only transit systems.

Information was also requested in an open ended format about any impediments transit systems face in spending federal funds that result from federal regulations or procedures and what the effect is on their system of the 14 percent reduction in transit formula fund appropriations in Fiscal Year 1993 contrasted to Fiscal Year 1992.

These Survey Results Are Consistent With Studies of Long-Term Transit Needs

This survey identified \$4.8 billion in federal funds that transit systems anticipate spending in Fiscal Year 1993 plus \$7 billion in additional federal funds that could be spent for a total of \$11.8 billion dollars in federal funds that could potentially be spent. This amount of federal funds that transit systems report they can spend in Fiscal Year 1993 is consistent with other estimates of transit system funding needs.

An APTA proposal for reauthorization of federal transit legislation called for eventual program growth to \$11 billion in 1991 dollars.⁵ In 1993 dollars this amount would be approximately \$11.9 billion, almost the exact amount predicted by the Ability to Spend Survey. The proposed level of \$11.0 billion in 1991 dollars was based on a model of investment required for long-term nationwide growth in transit ridership to levels achieved in the most transit intensive U.S. and Canadian cities with ridership goals stratified by population size.

An APTA survey of long-term investment needs in mid-1991 projected an average need for \$15 billion in capital funds from all sources over the following six years.⁶ With standard capital grant matching ratios of 80 percent of funds from the federal government and 20 percent from state and local governments, this is an average need for \$12 billion in federal capital funds. The Ability to Spend Survey estimates transit systems can spend a total of \$9.7 billion in federal capital funds in Fiscal Year 1993 out of the total \$11.8 billion, somewhat less than the average long-term need.

The U.S. Department of Transportation has issued several studies that support transit's needs for funds for specific uses. The Office of The Secretary estimated that the additional annual cost of compliance with provisions of the Americans with Disabilities Act is up to \$628 million for operations and \$310 for vehicles and capital improvements.⁷ The Federal Transit Administration estimates that on average \$1.7 billion (1991 dollars) will be needed annually for fixed guideway modernization over the next decade.⁸ In 1993

dollars this amount would be approximately \$1.9 billion, slightly less than the \$2 billion transit systems report they would be able to spend in Fiscal Year 1993. The FTA study does not, however, include relatively smaller fixed-guideway operations in 10 urbanized areas that received fixed-guideway apportionments from Fiscal Year 1993 appropriations.

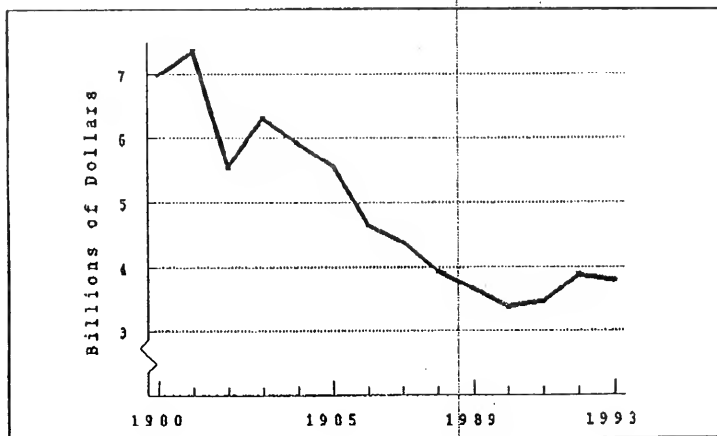
The Federal Transit Administration has estimated a need for over \$10 billion in federal funds to complete new start fixed-guideway projects that had advanced to at least the alternatives analysis stage.⁹ Only a portion of this amount can be spent immediately, however, dependent upon the stage of development of individual projects, because of the large scale and complex nature of their construction. The Ability to Spend Survey projection that transit systems can spend \$1.6 billion in Fiscal Year 1993 indicates a reasonable six plus year average to complete all listed projects.

Federal Transit Funding Has Declined Substantially In Past 12 Years

Federal funding for transit has declined significantly over the past 12 years. Measured in today's dollars, the Fiscal Year 1981 federal transit program of \$4.6 billion has a value of \$7.4 billion. As show on Figure 3, the value of the program measured in 1992 dollars declined to \$3.4 billion in Fiscal Year 1990 and has only returned to \$3.8 billion in Fiscal Year 1993. The real value of the federal transit program is now only 52 percent of its value in Fiscal Year 1981.

The decline in the real value of federal operating assistance has been even greater. Operating assistance for urbanized areas in Fiscal Year 1980 was \$1.1 billion which would have a real worth of nearly \$1.9 billion in 1992 dollars. The actual limit on operating assistance in Fiscal Year 1993 is \$802 million, a decline to 43 percent of the real value of operating assistance since Fiscal Year 1980. In 1980, federal assistance from all programs represented nearly 17 percent of all transit operating funds while in 1991, federal assistance accounted for less than six percent of transit operating dollars.

FIGURE 3: REAL VALUE OF FEDERAL TRANSIT FUNDING IN 1992 DOLLARS



Fiscal Year 1993 Reductions In Federal Formula Funds Have Hurt Many Transit Agencies

Survey participants were asked in an open ended question to describe the effects they are experiencing from the 14 percent reduction of federal formula funds in Fiscal Year 1993, contrasted to Fiscal Year 1992. Respondents reported problems in both operating and capital financing, compounded by the costs of new federal mandates of the Clean Air Act and the Americans with Disabilities Act.

Difficulties financing capital purchases, especially regular bus and van purchases, were the most frequently cited negative effect. Inadequate funding for replacement and expansion of bus and van fleets will cause difficulty in implementing service to comply with the Americans with Disabilities Act and the Clean Air Act. Without the ability to buy new buses many communities will not be able to meet increased demands for service, forcing potential riders to continue to depend upon expensive private transportation. The gradual decline transit systems are experiencing in their ability to replace worn out equipment or expand service is the same situation that forced private operators out of business in the 1950s and 60s. The continued use of old vehicles increases maintenance costs and causes service to become less reliable and less safe, a vicious cycle that discourages ridership and increases future costs to pay for today's mistakes.

Capital improvement budgets also are being strained. Facilities cannot be improved to take advantage of technological improvements. New communication systems that improve the efficiency of operations, fare collection system improvements, and automation are being deferred by many systems. Lack of capital investment reduces the potential for productivity improvements in transit system operations.

Lack of growth in federal operating funds is forcing many transit systems to increase fares, increase local financial assistance, or reduce service. Fare increases and service reductions are, of course, counterproductive and increase the cost to individuals and local governments. Even transit systems that are able to get by without reducing service or raising fares are making cuts in other activities such as training and advertising. Although hidden, these cuts have a serious, long-term effects because the quality of employee performance can deteriorate without training and a system's market share can drop if the public is not aware of services offered.

Many transit systems that are fortunate enough not to be affected this year noted that continued low levels of federal funding will affect them next year. Systems making up operating funds from reserves will use up their reserves and be forced to find funds from other sources or cut service. Almost all respondents have experienced or expect a negative effect from the reductions in federal formula funds.

Other Federal Actions Could Speed Up Spending

Rapid spending of increased federal funding by transit systems would be much easier if a number of activities that are now viewed as impeding the process are modified. Respondents were asked to identify changes in current federal regulations and procedures that would aid them in the rapid spending of the additional federal funds they need. Their responses resembled a check list of nearly all federal regulations and procedures that applied to transit. One respondent noted that all federal regulations impede spending. The following list summarizes recurring responses:

- o Required approval of local Transportation Improvement Programs at the state level.
- o Failure of the Federal Transit Administration to fully implement the Like-Kind Bus Program.
- o Delays by regional Federal Transit Administration staff in processing grant requests. Some systems suggest this is due to a lack of an adequate size staff in Federal Transit Administration regional offices.
- o Routine Federal Transit Administration revisions of requirements for a grant application. The Federal Transit Administration does not have clearly defined procedures for grant applications. Unclear procedures result in requests for additional material that seriously delay the grant process.
- o Slowness of the grant amendment process and requiring amendments when only simple changes in a grant are required.
- o Spare ratio requirement prevents acquisition of new buses without first retiring existing buses.
- o New pre-award/post-delivery audits are extremely complicated and time consuming.
- o Department of Labor delay in review and approval of 13(c) agreements that have been signed and approved by all parties.
- o The application of Buy America requirements to all purchases.
- o Slow processing of Letter Of No Prejudice requests.
- o Federal Transit Administration policy of releasing funds on a quarterly cycle delays funds that are ready to go before the end of a quarter.
- o Bus testing for medium and small buses is an excessive expense and delays procurement.

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3. David Alan Aschauer. *Transportation Spending and Economic Growth*. Washington: American Public Transit Association, 1991.
4. *1991 Statistical Summaries, Grant Assistance Programs*. Washington: U.S. Department of Transportation, Federal Transit Administration, 1992. Tables 41 and 44.
5. *Reauthorization Proposal for the Federal Public Transportation Act of 1991*. Washington: American Public Transit Association, February 1991.

6. *Public Transit--Sound Investment for the 21st Century*. Washington: American Public Transit Association, August 1991.
7. *Final Regulatory Impact Analysis Assessing the National Compliance Costs of the Department of Transportation's Final Rule Implementing the American's with Disabilities Act of 1990 Surface Transportation Accessibility Requirements*. Washington: U.S. Department of Transportation, Office of the Secretary, November 1991.
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9. *Report on Funding Levels and Allocation of Funds*. Washington: Department of Transportation, Federal Transit Administration, June 1992.

LETTER FROM BILL CLINTON

To Members of the American Public Transit Association and Users and Supporters of America's Public Transportation Systems:

My best wishes to you on the occasion of your Annual Meeting in San Diego. With only days left before the election, I firmly believe that we are on the threshold of a new era for public transportation.

In traveling throughout the nation, Senator Gore and I have seen firsthand a hunger for new ideas and new leadership to put our nation back on course. We cannot move America into the 21st century by relying on past policies and programs, or by further diminishing federal attention to national transportation needs. Our competitors around the world have certainly learned this lesson and are making extraordinary investments in a new generation of integrated, multi-modal transportation systems that rely heavily on high-occupancy, high-technology passenger transportation services.

Accordingly, we must introduce a builders agenda into our 21st century national transportation policy. It will be essential to expand the role of public transportation in this agenda, and I ask for your help and support as we move ahead.

Improving public transportation is an essential element of a larger, essential commitment to rebuild America's crumbling infrastructure and revitalize our communities. Already, through your industry's leadership and foresight, despite a decade of neglect and hostility by two successive Administrations in Washington, a new era in public transportation has been launched in America. I see the evidence all across the country. Yet there is more that must be done, and competing transportation interests must come together in the effort. Metropolitan and rural transit, commuter rail, high speed rail and community-based services must be expanded and fully integrated as part of tomorrow's surface transportation system.

In addition, I am keenly aware of the enormous potential of the Intermodal Surface Transportation Efficiency Act of 1991 to serve as a catalyst to spur long overdue investment in our surface transportation system, and in public transportation in particular. I strongly support full funding of ISTEA and the flexible local decision-making that is the hallmark of the bill.

Your industry's strategic objective - to enhance mobility and assure a better balance among the transportation options available to every American - is entirely consistent with the broader goals we all share. These include economic and productivity growth, job opportunities, energy conservation, clean air and improved access for disabled Americans.

For us to make meaningful progress, however, our national leadership must recognize and act on these connections too, and it is my intention that we do so. ISTEA and the commitment of inspired and dedicated leaders around the country have already launched a new era in public transportation in community after community, both urban and rural. The challenge to a new Administration - a challenge I intend to meet fully - will be to enhance, and to guide, and to enable you and the people you serve to fully realize the enormous potential of public transportation as we enter the 21st century. Our goal for transit will be to add resources, to remove barriers, to catalyze partnerships and to instill a new ethic based on the value of moving together.

I applaud your ongoing efforts to move us in this direction and look forward, beginning next January, to your help in building an Administration that will serve as a strong ally and advocate for enhanced public transportation across America.



Bill Clinton

PUBLIC TRANSIT—

SOUND INVESTMENT FOR THE 21st CENTURY

Ease of movement is vital for every American and for the businesses and industries that create the nation's wealth. In many ways, our ability to travel is a measure of our quality of life and the competitiveness of our economy.

Today, our ease of movement is severely threatened. Major cities are regularly gridlocked, resulting in waste of energy and serious air quality damage. Suburbs are clogged throughout the day with traffic. The increasing isolation of rural residents is all too commonplace.

Inadequate public investment in transportation lies at the heart of the problem. In particular, we have failed to plan and invest adequately in the most fundamental mode of transportation: public transit.

- Between 1992 and 1997, transit will require \$90.8 billion in capital investment.
- Transit systems will need 63,800 new vehicles and another 29,930 rehabilitated buses and rail cars.

If transit capital funding from the federal government continues at the current level, only 16% of transit's capital needs will be met.

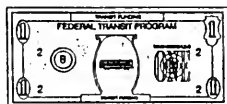
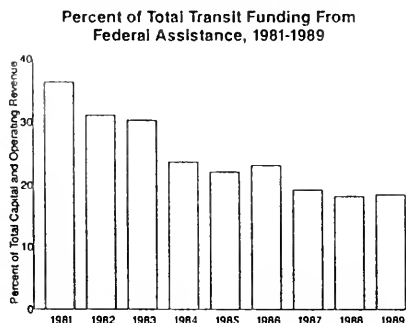
- \$17.1 billion will be necessary to modernize bus and rail facilities.
- Forty-eight metropolitan areas in 29 states are planning new fixed-guideway rail and busway systems or extensions.
- Between now and 1997, transit operations and maintenance will require \$100 billion.

Today, more than at any other time in recent history, America's public transit systems and services should be upgraded and expanded.

The Problem: Lack of Investment in Transit

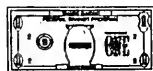
Budgetary decisions made by the federal government have led to inadequate investments in America's public services and facilities, its *infrastructure*.

The Value of Federal Funding for Transit Has Decreased 53 Percent in the Past Decade



1981 Funding:
\$4.66 Billion

1991 Funding:
\$2.18 Billion
in 1981 Dollars



- Overall investment in the U.S.'s public infrastructure, including transit, is in a 20-year decline.
- In the ten years since 1981, as transit ridership increased, federal transit funding declined 53%, adjusted for inflation.

Tomorrow's Problem: Addressing New National Priorities and Telling Trends

Increased investment in public transit is essential.

Consider these trends.

- The number of vehicle-miles we travel are growing faster than *both* population and the number of vehicle registrations.
- The era of massive highway construction is over. Between 1984 and 1988, vehicle-miles travelled increased more than *four* times faster than the number urban freeway miles built.
- The U.S. Department of Transportation estimates that annual total vehicle delays will exceed 3.9 *billion* hours by the year 2005.
- Transportation uses 63% of our oil and is the *only* sector of the economy where oil consumption continues to increase.
- America's population is changing. An older, more diverse workforce will be more dependent on public transit. The needs of disabled persons must also be served.

Transit is proud of its role in achieving clean air and broader service to the disabled, but new national priorities in these areas carry a substantial price tag.

The Cost of Accessibility for Disabled Persons

The U.S. Department of Transportation estimates the national, annual cost to comply with the Americans with Disabilities Act of 1990 (ADA) ranges from \$844 million to \$1.3 billion.

The cost covers proposed lifts on buses, making key rail stations, transit centers and rail cars accessible as well as developing paratransit systems.

The Cost of Transit's Role in Achieving Clean Air

The Clean Air Act of 1990 requires reduced vehicle emissions. The annual cost to install exhaust cleaners and upgrade fuel is \$110 million. One nationwide survey* of transit systems found that installation of particulate traps on the U.S. bus fleet would cost an estimated \$522 million.*

*The \$522 million represents the additional costs of the traps on new buses when they are brought into use. Based on a 12-year replacement cycle, the cost per year would be approximately \$44 million. Additional diesel fuel costs per year are estimated to be \$56.8 million. Source: Southern California Rapid Transit District.

Six-Year Transit Investment Needs: \$90.8 Billion

The backlog of transit investment needs continues to mount for two reasons: 1) the ten-year decline in federal funding; and 2) the increasing demand for transit service.

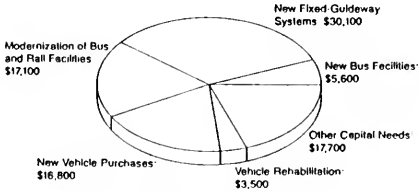
Because of inadequate funding, essential reinvestment in existing transit systems is not being made, and service improvements are being slowed

or deferred. In some areas, service reductions are becoming commonplace.

Equally important, efforts to add new transit capacity have been stymied by lack of funds. The needs cited here show the size of the funding commitment that should be made to public transit for the next six years.

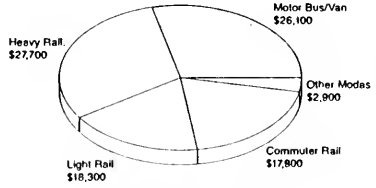
Transit agencies will require \$90.8 billion¹ in capital funding from 1992 through 1997 in order to satisfy their communities' mobility needs.

Transit Capital Needs 1992-1997
(Millions of Dollars)



Total Needs: \$90,800 Million

Capital Needs by Mode, 1992-1997
(Millions of Dollars)



Total Needs: \$90,800 Million

New Bus Facilities: \$5.6 Billion

As transit systems continue to provide current services as well as offer new ones, a variety of new bus facilities will be needed. Between 1992 and 1997, \$5.6 billion is needed to build these bus facilities:

- 280 terminal/transfer centers
- 130 maintenance and repair shops
- 95 storage facilities or garages
- 45 administrative offices
- 590 parking structures for transit passengers

¹Source: Data summarized in this paper is drawn from a comprehensive, nationwide survey of transit systems, conducted in 1990 by the American Public Transit Association. The survey requested transit systems to include all funds the systems would need to meet their communities' requirements for public transportation improvements from 1992 through 1997. It is not limited by what they thought funding levels would be based on current funding trends. The maximum federal assistance portion (current law) is 80% or \$12 billion per year (\$90 billion ÷ six years = \$15 billion per year × 80% = \$12 billion per year.)

Modernization of Existing Bus and Rail Facilities: \$17.1 Billion

Comfortable, convenient and efficient transit service requires a wide range of support facilities and up-to-date equipment. Between 1992 and 1997, \$17.1 billion is needed to modernize:

- 450 facilities
- 880 stations
- 1,230 miles of rights-of-way

New Vehicle Needs For Existing Services: \$16.8 Billion

Between 1992 and 1997, transit authorities will require \$16.8 billion in new vehicle investment for existing services plus \$3.9 billion for vehicles for new fixed-guideway routes and extensions; a total of \$20.7 billion for new vehicles.

Total New Vehicle Requirements 1992-1997

<i>Type</i>	<i>Number</i>
Bus	49,610
Van	9,130
Heavy Rail	1,940
Light Rail	1,500
Commuter Rail	1,220
Other	<u>400</u>
Total	63,800

Buses are truly the workhorse of public transit. They carry 64% of the nation's transit passengers and are responsible for 51% of passenger miles. Through 1997, new bus needs total \$12 billion.

Rail transit, defined as light, heavy, or commuter, carries passengers longer distances. Rail accounts for 36% of all transit trips and 49% of total passenger miles. The percentage of passenger miles on rail is increasing every year. Rail transit carries more than 10 million passengers an average of 65 million miles each weekday. Rail transit is least damaging to the environment and most energy-efficient.

Through 1997, new rail vehicle needs for existing service are \$4.8 billion and for new fixed guideway systems and extensions are \$3.9 billion.

Transit Vehicle Rehabilitation: \$3.5 Billion

Rehabilitation is a cost-effective way to extend the life of transit vehicles. A sound rehabilitation program can add six years to the 12 year useful life of a bus and 15 years to the 30 year average life of a rail car. Between 1992 and 1997, \$3.5 billion is required to rehabilitate:

- 18,570 buses
- 11,360 rail cars (heavy, light and commuter)

Fixed Guideway New Starts and Extensions: \$30.1 Billion

Transit's greatest advantage lies in high-capacity services operating on exclusive rights-of-way, including commuter rail, light rail (also known as modern trolleys), subway systems and exclusive bus and transitways. Eight major urban centers with a long history of rail transit continue to benefit from this investment and seek to expand or modernize their systems. Another ten urban areas built fixed-guideway transit in the past 15 years. All seek to expand them. Forty-eight cities in 29 states plan new or expanded fixed-guideway systems, either rail lines or busways. These include 1,770 miles of rights-of-way, 2,400 rail cars, and 830 stations.

Capital investment needs for new fixed-guideway (rail and bus) transit services between 1992-1997 totals \$30.1 billion including \$3.9 billion for the necessary vehicles.

- \$1.4 billion for busways and high occupancy vehicle (HOV) lanes
- \$3.5 billion for commuter rail
- \$9.7 billion for heavy rail
- \$13.5 billion for light rail
- \$2.0 billion for related capital facilities

Urban Areas Constructing, Planning, or Investigating New or Expanded Fixed-Guideway Transit Investments



Other Capital Investment Needs: \$17.7 Billion

To ensure top quality service, an additional \$17.7 billion in capital investment is needed. These dollars are needed to purchase a wide range of capital items including service vehicles, computers and systems for fare collection and communications.

Support of the Capital Investment: \$100 Billion for Maintenance and Operations

Capital investment by itself is not enough to ensure efficient, effective service. Day-to-day maintenance and operations require a stable and reliable major financial commitment.

Today, maintenance and operations of the nation's transit systems require an investment of \$15.7 billion per year, of which seven percent is from the federal government. Operating today's systems between 1992-1997 will cost nearly \$100 billion in current dollars. As transit systems offer both expanded and new services to meet new passenger demand, increased support for operations, as well as capital, will be required.

OUR NATIONAL TRANSPORTATION STRATEGY REQUIRES INCREASED FUNDING FOR PUBLIC TRANSIT

The mobility challenge facing the nation demands immediate attention. If we are to move freely in the 21st century, we should begin now to provide major increases in federal transit investment.

\$90.8 billion in total capital needs between 1992-1997 translates into a \$12 billion annual federal funding program if the federal share is maintained as in current law. Today, however, federal capital funding is about \$2 billion per year.

To prepare for the 21st century, we should:

- Redirect transportation spending to sup-

port expanded transit services;

- *Restore, at a minimum, federal transit funding to the 1981 level, \$6.5 billion per year in today's dollars;*
- *Provide an additional \$1.5 billion annually to achieve the transit-related goals of the Clean Air Act of 1990 and the Americans with Disabilities Act of 1990; and,*
- *Increase federal transit investment in the decade ahead to \$11-15 billion per year to support a national goal of increased transit use.*

For further information on transit planning and investment needs, contact the American Public Transit Association or your local public transit authority.

American Public Transit Association
1201 New York Avenue, N.W.
Washington, DC 20005
(202) 898-4000



APTA

CAPITAL REQUIREMENTS ESTIMATES

Senator LAUTENBERG. I just want to ask one question here.

In these projections—and either Ken Mead or Jack Gilstrap can answer—for capital requirements, are these estimates those funds needed not only to catch up but to stay abreast of our capital requirements, or are these for a specific number of years? For example, is it a 5-year program to catch up and then so much in capital for maintenance? I ask because there is kind of an inconsistency here. Otherwise, what we are saying is, over the last years we have not had enough of an investment in the capital side, so we have to catch up with that backlog of needs. And what about the future?

Would either one of you respond, so that, as we continue this discussion, we have a frame of reference?

Jack?

Mr. GILSTRAP. Well, I believe that our APTA recommendations are gleaned, as indicated, from a survey of our members of their current capital needs and the needs that they see in their various proposals for the next 5 years.

Senator LAUTENBERG. So we are talking about just for the next 5 years?

Mr. GILSTRAP. Yes, sir; 5 or 6 years, I guess it is.

Senator LAUTENBERG. Are all of the parties in agreement? Does AASHTO's figure for capital needs contemplate a 5-year plan, or something longer, Mr. Francois?

Mr. FRANCOIS. Mr. Chairman, we were looking at an annualized cost over a number of years beyond that. But the assumptions were, basically, status quo. We did not take into account growth. I will talk more about that.

Mr. MEAD. The difficulty here, Mr. Chairman, is that different people have different views and get the information about what constitutes expansion needs from different sources.

FTA did not ask communities what their needs were whereas APTA did. So, obviously, you are going to get a different figure.

Senator LAUTENBERG. It would be helpful if we could conform all of these projections with one side, to say, you know, this is to make up for what we missed in the past several years and something that we think will be virtually an annualized figure. After all, capital needs are going to go on as long as systems operate.

OK. I did not mean to interrupt the flow here.

Now, Mr. Francois, if you would, proceed.

STATEMENT OF FRANK FRANCOIS

Mr. FRANCOIS. Thank you, Mr. Chairman. I am Francis B., or Frank, Francois, executive director of the American Association of State Highway and Transportation Officials. We have given our statement to the record, together with some backup documents. So I would just take my 5 minutes and try to summarize that a bit.

First of all, AASHTO strongly believes that we must increase our investment in transit. From our examination of our transit needs, we have already identified both short- and long-term needs that should be addressed. Finally, we support a continuing and expanded Federal role in financing transit, both for capital and operating purposes.

Now we have provided in our testimony comments from the recently sent to Congress "Status of the Nation's Highways, Bridges, Transit Conditions, and Performance Report" of the USDOT and have noted some of the projections for transit expenditure in there, which do substantially exceed what we are now doing, obviously, as all these numbers do.

I think GAO has served us all well. The first time I saw this report was this morning, but table 1 I think is very important in that it does do one thing that none of the others do. It states everything in terms of 1991 dollars. So at least we do have comparable data.

Now the work that AASHTO did—and we have outlined that to you in the bottomline report and in the backup document to that report—from a capital viewpoint, we looked in terms of ranges. The low range that we used was one that simply said patch it up and keep it running—not an acceptable way to run a transit system, but that is a bare, minimum need that you would have to have just to stay operating. You will lose customers and you will not be able to expand service.

Our higher level of investment assumed a replacement of the bus fleets so that we would get down to an acceptable average age; the same with respect to rail mod, et cetera.

In both of those cases, the goal was simply to try to retain the current share of passenger transport carried on transit.

Obviously, if you want to increase the amount of transit usage, we must talk in terms of substantially greater investments than any of these numbers before you.

Now that leads directly, of course, into the ISTEA and into the Clean Air Act amendments of 1990. All of us know that, as we begin to do comprehensive, intramodal planning, the needs for additional transit services will be clearly identified, and we will have to find ways to finance those needs.

We do not yet know what the full impacts of the conformity regulations will be that will ultimately be adopted by EPA and that the Clean Air Act amendments will impose. But, very likely, it is going to call for substantial increases in transit carrying capacity.

If this occurs, there is no question but that the current systems will not be able to handle the load. We will then be talking in terms of much larger investments.

This is why I say that, currently, we are looking at simply maintaining current share. But if this Nation really wants to move to a much larger share, we must have much larger funding. How large? It depends upon what the plans are. So it is very difficult at this time to even estimate what those costs are.

Fortunately, the ISTEA, and particularly the STP portion of it, does provide flexibility in the use and in the allocation of funds. This will allow us, I think, to grow into these new needs. But it will take time to reach that point.

Let me turn now to one other document and then I will quit. We also provided to you a copy of our 1992 survey of what the States are investing in transit. I think that document may be more important than any other one as to how the States view transit funding.

The bottom line of that document is that in 1992, the States collectively invested \$6.2 billion in transit, which is considerably more than the Federal investment.

Tables 14 and 15 of that document indicate what the capital levels of expenditure are, respectively, for urbanized and for non-urbanized areas in 1992. In our urbanized areas, direct capital assistance was \$1.7 billion, operating assistance was \$2.2 billion, capital or operating assistance—the choice being up to the user—a little over \$446 million.

On the rural side, it was \$22 billion for capital, \$40 billion for operating assistance, and \$37 billion for capital or operating.

What is most instructive is if you compare those 1992 numbers—I did this this morning before coming over—with our similar report for 1997. Remember, it was a 1997 concept of transit that basically shaped AASHTO's 1988 report.

What a comparison of those two documents show is this, that total urban assistance increased 54 percent from the States over that 5-year period of time. Of that increase, 118 percent was in capital assistance. Operating assistance increased only 18 percent, and capital or operating, 155 percent.

So the State legislatures and Governors clearly see a growing capital need in urban areas, and that is even more pronounced in rural areas.

In rural areas, there was a 107-percent total increase in State funding. With respect to capital assistance for rural properties, there was a 189-percent increase in that 5-year period, a smaller increase in operating assistance, et cetera.

So, Mr. Chairman, I think we have demonstrated that the States clearly are involved. We see a need both for ongoing assistance at both the Federal and State level. Obviously, in the judgment of the States, the rural area needs are growing rapidly, and that is where we especially think we need Federal assistance. But over all, the bottom line is what do we want transit to do. Thank you.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much. Your full statement will be made part of the record.

[The statement follows:]

STATEMENT OF FRANCIS B. FRANCOIS

Mr. Chairman, I am Francis B. Francois, Executive Director of the American Association of State Highway and Transportation Officials, commonly called AASHTO. AASHTO is a unique transportation organization, in that it is concerned with all of the major modes of transportation, including highways, transit, rail, aviation, and water transportation.

On behalf of AASHTO, we are pleased to respond to your invitation asking our views on the need for increased transit investment, the short and long term transit needs of the country, and the federal role in financing transit.

Let me first provide a short response to each of the subjects just listed, after which I will comment further on each.

The Association believes that we must increase our investment in transit. From our examination of our transit needs, we have identified both short and long term needs that should be addressed. Finally, AASHTO supports a continuing and expanded federal role in financing transit, both for capital and operating purposes.

THE NEED FOR INCREASED TRANSIT INVESTMENT

The total transit expenditure for 1990 in our nation is reported to have been \$19 billion according to the January, 1993 report to Congress by the U.S. Department of Transportation, titled The Status of the Nation's Highways, Bridges, and Transit:

Conditions and Performance. Of that amount \$14.7 billion was for transit service, and capital expenditures were \$4.3 billion.

As to the source of this funding, turning first to transit services, 43 percent came from the fare box, 52 percent from state and local governments, and 6 percent from the federal government, according to the U.S. DOT report. The U.S. DOT report also states that the federal share of capital expenditure was about 60 percent, or \$2.58 billion.

Turning to needs, the U.S. DOT report finds that over the period 1992–2011 the annual capital investment in transit from all sources should be at least \$3.9 billion to maintain conditions and performance at current levels, and \$6.6 billion to improve conditions and performance. Both capital expenditure levels include metropolitan expansions, and are stated in 1991 dollars with no allowance for inflation. As to what the \$6.6 billion level would accomplish, the report states that it would:

“(1) eliminate the backlog of bus and rail deficiencies; (2) maintain current transit market share; (3) add additional service to accommodate anticipated urban demand not included in the highway analysis; (4) improve transit stations to current standards; and (5) meet statutory requirements to serve disabled Americans.”

The findings of this recent U.S. DOT report are compatible with AASHTO's findings contained in our September, 1988 The Bottom Line report, which summarized the Association's findings as to surface transportation investment requirements over the 1988–2020 period. A copy of this report is being submitted with this statement, for your convenience.

In The Bottom Line, the approach taken was to establish a range of needed investment in transit, for urban areas above and below 200,000. As shown in TABLE C of the report, the estimated needs were as follows:

ANNUAL TRANSIT CAPITAL REQUIREMENTS AASHTO FINDINGS—1988–2020

[1988 dollars in billions]

Program area	Investment range	
	Low	High
Capital Urban Above 200,000	\$2.6	\$3.2
Capital Urban Under 200,0001	.2
Totals	2.7	3.4

Not included in these requirement estimates were rural capital needs, capital needs in the service to elderly and disabled persons program, and capital needs to meet the requirements of the subsequently enacted Americans With Disabilities Act (ADA). According to the U.S. DOT report, the annual capital requirements generated by these three need areas under a maintain current conditions scenario are as follows:

Rural vehicle replacements and facilities	<i>Billions</i> \$.112
Services to elderly and disabled persons, vehicle replacement and facilities107
ADA generated capital needs255
Total	0.474

If these additional estimated capital needs are added to the needs estimates in AASHTO's table, and if the AASHTO totals are stated in 1991 dollars, then the Association's capital need estimates are similar to those contained in the U.S. DOT report.

SHORT AND LONG TERM NEEDS

The methodology to develop the transit needs included in The Bottom Line report is discussed in Appendix 2 to that report titled Public Transportation Needs, a copy of which is also attached for your use. Public transportation data were analyzed to estimate the capital and operating condition, performance and funding requirements of the nation's transit systems at interim periods through the year 2020. Transit systems were divided into three categories: systems serving urbanized areas over 200,000 in population; systems serving urbanized areas of 50,000 to 200,000; and specialized and rural transit systems funded through Section 16 and Section 18.

Much of the analysis was developed based on the 1985 Urban Mass Transportation Administration (UMTA) Section 15 report, the UMTA Rail Modernization

Study, the American Public Transit Association's (APTA) Transit Passenger Vehicle Fleet Inventory, and the APTA Transit Capital Needs: 1984-1988 report.

It needs to be emphasized that the estimates in the AASHTO The Bottom Line report were deliberately conservative. Both AASHTO and the U.S. DOT report assume that generally transit will retain its current share of urban travel. If the Clean Air Act Amendments of 1990 result in efforts to greatly increase transit ridership in urban areas, then a corresponding increase in the capacity of the nation's transit systems will need to occur. Similarly, the costs to implement the Americans with Disabilities Act (ADA) are additions to the funds needed for transit. Both of these legislative initiatives could in turn generate a large need for additional capital, to levels much larger than those currently estimated by U.S. DOT and AASHTO.

In the short term, we have need now to reduce the average age of bus fleets to acceptable levels, and to assure adequate maintenance of transit systems. These actions are necessary to assure the acceptability and reliability of service, both of which are essential if we are to keep our current riders and attract more. Once the backlog is eliminated, then any long term program must assure that today's problems do not again occur.

As to the long term, the Congress and many in our nation want to sharply increase transit use. To do this will require a much larger investment in transit. It is not possible now to predict where and when those investments should be made. Rather, this is one of the products that should flow out of the new transportation planning provisions of the ISTEA, both the urban and state Transportation Improvement Programs (TIPs). In addition, the Clean Air Act Amendments of 1990 will influence the future of transit in major ways, depending on the area of the nation. While we cannot now predict the long term needs of transit, it is safe to say that they will probably be much larger than we now project.

State transportation departments are playing a growing role in public transportation. State transit directors for each of the state transportation departments participate in the AASHTO Standing Committee on Public Transportation, which has been active in networking information among the states to assist these transit directors in their expanding roles.

The states recognize that transit funding must be increased, and they are increasingly placing their own funding behind that belief. AASHTO has recently published its 1992 Survey of State Involvement in Public Transportation report, a copy of which is being submitted with this statement. As shown on TABLE 3 of the report, AASHTO found that in fiscal year 1991-92 the states collectively provided at least \$6.054 billion in funding to transit. Of our 52 member departments 50 responded to the survey, and of the 50 only five states reported providing no transit funding. The comparable amount for fiscal years 1990-91 was \$4.651 billion, and in every year since 1987 the combined state investment in transit has exceeded the federal transit program, as shown in FIGURE 1 of the AASHTO report.

As to how the state funding was applied in fiscal years 1991-92, this is shown in TABLE 14 for urbanized areas, and in TABLE 15 for non-urbanized areas.

In urbanized areas, a total of \$1.734 billion went toward capital, \$2.230 toward operating assistance, and \$447 million for either capital or operating assistance. The comparable amounts for non-urbanized areas were \$22.5 million for capital, \$40.7 million for operating assistance, and \$37.2 million for either capital or operating assistance.

The findings of the 1992 AASHTO report indicate the need felt by the states for increased transit investments, and that the states interest in supporting transit has increased since the 1988 The Bottom Line report.

FEDERAL ROLE

AASHTO supported the increased transit authorization contained in the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), as well as the flexibility to use certain funding for either highways or transit, according to decisions made in the planning process. We also supported other transit-related features of the ISTEA, such as establishment of a transit research program, and efforts to provide better data regarding current activities and future needs for all modes of transportation. We continue to support these features of the ISTEA, and in particular full funding of the authorized levels of the Act for both highways and transit.

Our member departments believe there is need and justification for federal support of transit, for both capital and operating support. A sound transit system is clearly in the national interest, and the best way to assure such a sound system is with continuing federal support and involvement.

AASHTO's support for additional federal funding for public transportation applies to both urban and rural areas of the nation. In rural areas, state transit officials have been working closely with the FTA Section 18 program. Under Section 18, approximately 94 million transit trips a year are provided by the rural transit network, with the typical agency providing between 25,000 and 30,000 trips a year. While in 1989, 1,161 Section 18 providers operated 10,107 vehicles across the nation, there were still over 1,200 counties that had no Section 18 program.

The Section 18 rural program should continue to be supported at the levels provided under ISTEA. This is particularly true in light of figures produced by the Community Transportation Association of America, which indicate that while Congress in fiscal year 1993 allocated \$35 per capita in large urban areas, the equivalent in rural areas is \$1.50 per capita. While we certainly need to continue our commitment to transit in our major urban areas, we also need to focus on the transit needs in rural parts of our nation as well.

We have been pleased to hear Secretary Federico Peña support full funding of the ISTEA, and we welcome the \$752 million in additional funding included in President Clinton's economic stimulus proposal for transit. A shorter term package to boost the economy and funding for transportation infrastructure projects is vitally needed.

We also need to look at the longer term as well, and the importance of a major investment to meet the nation's transportation infrastructure needs, including transit. This investment is an important part of a longer range effort to support our national economy and to be competitive in the global economy.

We look forward to working with you and the members of your committee on efforts to provide adequate funding for transit needs in both the short term and over the longer term.

Mr. Chairman, we appreciate this opportunity to provide the Association's views on the future of our nation's transit programs. We are available to respond to any questions that you may have.

[CLERK'S NOTE.—Mr. Francois' statement was accompanied by a report (with executive summary and detached appendix) entitled, "The Bottom Line: A Summary of Surface Transportation Investment Requirements 1988–2020," and by a 1992 "Survey of State Involvement in Public Transportation." Both documents will be kept on file by the subcommittee.]

STATEMENT OF ROBERT MCMANUS

Senator LAUTENBERG. Mr. McManus, we now look forward to hearing from you.

Mr. MCMANUS. Thank you, Mr. Chairman. I have submitted an extended statement for the record and I should like to highlight it in these few remarks.

Senator LAUTENBERG. It shall be included in the record.

Mr. MCMANUS. The Secretary has been required, beginning in January 1984, to report biennially to Congress on the condition and performance of mass transportation in America and to provide estimates of the dollars needed to sustain these systems over 1-, 5-, and 10-year periods.

The submissions in 1984, 1986, and 1988 focused primarily on transit performance and did not address the subject of transit needs. The last two reports, issued in 1991 and 1992, addressed transit needs, where the 1992 report provided what we believe for the first time is a complete assessment of capital needs from the department.

The statute explicitly calls for providing future capital needs at various levels of service. The 1992 report complies with this requirement by defining two scenarios of performance for which capital investment costs are estimated: investments needed to main-

tain condition and performance and investments needed to improve condition and performance.

In our first scenario, we have defined maintain conditions as the kind of investments that are required to sustain today's physical conditions.

In the second scenario, we have defined improve conditions as those investments needed to address past disinvestment and return transit equipment and facilities to a state of good repair.

The other half of our scenario is performance, and by this we mean the performance of transit in terms of the amount of transit service provided.

During the 1980's, transit patronage grew 0.8 percent per year. We have included in our estimate of maintaining current performance the capital costs needed to expand capacity at this rate.

We have defined improve performance in a way that complements a key finding of the FHWA needs report. In its two most recent highway needs reports, FHWA has said that, despite the fact that all the numbers say the travel demand will be there, it will not be possible to build highways to accommodate that demand, and that 34,000 lane miles of needed highway construction will have to be forgone and replaced by travel management measures, traffic operational improvements, changes in vehicle occupancy, and increased transit use.

We have taken 10 percent of the travel demand that is represented by those 34,000 lane miles of forgone construction and built our estimates for improved transit performance around the assumption that this 10 percent will require new transit capacity to satisfy the mobility needs. As to the investment needs that this methodology generates, our estimates are: to maintain current conditions and performance, an annual capital investment of \$3.9 billion in mass transportation is needed over a 10-year period; and, to improve conditions and handle 10 percent of the travel from the forgone highway lane miles, an additional \$3.6 billion a year for 10 years is needed, for a total of \$7.5 billion per year.

If the \$7.5 billion estimate of annual capital needs in our 1992 report to Congress is used as a benchmark, then it is evident that the full annual authorization levels for the transit capital program in the ISTEA, together with substantial overmatching by State and local authorities, would be required to put us on a reasonable path toward meeting those investment needs.

The ISTEA authorized level for fiscal year 1993, for example, would finance about 55 percent of the need, or about \$4.1 billion, including WMATA, leaving 45 percent for local match and overmatch.

The budget authority provided in fiscal year 1993, however, was short of the authorized level for capital by over \$1 billion.

The President's economic stimulus package would restore \$752 million of this \$1 billion shortfall.

Apart from this brief review of our own report, I would like to make reference to the varying dollar figures for need, depending on who is doing the estimating. Frankly, I do not find the variations troublesome, as long as they are explainable. The seemingly wide variation between FTA needs estimates and those of other organizations are not nearly as far apart as they may at first seem to be.

The GAO, in my opinion, is performing a real service in explaining the differences accurately and in assessing the several needs estimates. In fact, I am willing to stipulate to the accuracy of their analysis.

This is the extent of my opening remarks, Mr. Chairman. I would be pleased to take questions.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much. Your full statement will be made part of the record.

[The statement follows:]

STATEMENT OF ROBERT H. MCMANUS

Mr. Chairman and Members of the Committee. My name is Robert McManus and I am the acting Administrator of the Federal Transit Administration.

I welcome this opportunity to appear before you today to discuss the general question of mass transit investment needs in our country.

If we are going to take the position that investment in mass transportation is important for the social and economic well-being of our cities, our states, and our country, we should bring to our discussion information that is as clear and compelling as it possibly can be.

The Secretary has been required, beginning in January 1984, to report biennially to Congress on the condition and performance of mass transportation in America, and to provide estimates of the capital dollars needed to sustain these systems over one, five, and ten year periods. The submissions in 1984, 1986 and 1988 focused primarily on transit performance, and did not address the subject of transit needs. The last two reports, issued in 1991 and 1992, addressed transit needs, with the 1992 report providing what we believe for the first time is a complete assessment.

We believe that the 1992 report presents an objective and dispassionate estimate of total transit needs. The report does not, however, indicate whether these needs are to be funded from Federal, State, local or private sources. Investment needs and Federal spending are two very separate, and separable, issues.

In order to advance this purpose and to establish some consistency in the approach of the Department's agencies to reporting on the subject of capital needs, we have paralleled our latest report with the method of presentation of the Federal Highway Administration in its own biennial needs report to the Congress.

In reality we are doing more than simply presenting the FTA's Section 308 Report in a methodology similar to that used by FHWA; we have actually moved toward combining these two needs assessments into a single surface transportation report.

The FHWA report to Congress is due each odd-numbered January, ours each even-numbered year. This year, 1993, the FHWA Report that you received in mid-January contains new and updated highway information since the last FHWA report was issued two years ago; it also contains all the information that was in the FTA report for 1992.

Our goal is to have a single report, prepared every two years. We recognize it will take legislative action before we can satisfy both statutory requirements with the issuance of such a single biennial report; meanwhile, our intention is to have each mode's formal report cover both modes, and, as in the 1993 Highway Conditions and Performance Report, contain the other's data and information.

Much more important than the format of presentation is the methodology we used to develop our estimates. The statute explicitly calls for providing future capital investment needs at "various levels of service." The 1992 Section 308 Report complies with this requirement by defining two scenarios for which capital investment costs are estimated: investments needed to Maintain Condition and Performance, and investments needed to Improve Condition and Performance.

Each scenario has two parts, consistent with the approach that FHWA has long used. We distinguish the condition of mass transit facilities from their performance.

Condition is an engineering description; it talks about how the physical state of the existing infrastructure is. In our first scenario, we have defined "maintain conditions" as the kind of investments that are required to sustain today's physical conditions. In our second scenario, we have defined "improve conditions" as those investments needed to restore the backlog of past disinvestment and return transit equipment and facilities to a good state of repair.

The other half of our scenarios is performance. By this we mean the ability of transit to meet overall transportation demand. Performance has implications for the level of transit service required.

We have defined "current performance" in a dynamic way; by it we mean that mass transportation is expected to grow at rates experienced in the 1980's. During the 1980's, transit patronage grew 0.8 percent per year, reflecting a growth in population and a continuing rise in travel. To estimate mass transportation investment needs, we have included in our estimate of maintaining current performance the capital costs needed to expand capacity at this rate.

We have defined "improved performance" in a way that complements a key finding of the FHWA needs report. Over the years, FHWA has gained a solid reputation among transportation professionals for its ability to forecast future travel demand. In years past, once the demand was known, it was a relatively simple arithmetic procedure to determine how many miles of new highways would be needed to handle that demand, and from that, a dollar figure representing highway needs.

Such an approach no longer works, though, because in many areas we have reached a real-world limit on the amount of new highways our economy can afford, our environment can tolerate, our cities can endure, and, frankly, our people want.

So in its two most recent highway needs reports, FHWA has said that despite the fact all the numbers say the travel demand will be there, it will not be possible to build highways to accommodate that demand. In fact, FHWA says that there will be 34,000 lane miles of needed highway construction that will have to be foregone, replaced by travel management measures, traffic operational improvements, changes in vehicle occupancy, and increased transit use.

Using this FHWA estimate as a base, FTA projected an increased level of transit service to compensate for a portion of this foregone lane mileage. It then estimated the capital investment that would be necessary to permit such transit performance to happen. Based on a broad-scale review of the kind of travel which would be represented by these foregone lane miles, FTA took 10 percent of the travel demand that is represented by those 34,000 lane miles of foregone construction, and built our estimates for improved transit performance around the assumption that this ten percent will require new transit capacity to satisfy its mobility needs. I must caution that this is not a prediction; we are not saying that mass transit in America will, in fact, register such performance increases.

In sum, the Section 308 Report attempts to be true to its statutory mandate which calls for estimates at various levels of service: Level one is a continuation of current conditions and performance; and level two is an improvement of conditions and an improvement in performance through an increase in transit level of service sufficient to handle 10 percent of the travel that FHWA estimates would have required the construction of 34,000 additional lane miles of highway.

As to the investment needs that this generates, our estimates are: to maintain current conditions and performance, an annual capital investment from all sources of \$3.9 billion (in 1991 dollars) in mass transportation is needed; and to improve conditions and handle 10 percent of the travel from the foregone highway lane miles an additional \$3.6 billion a year for ten years is needed from all sources, for a total of \$7.5 billion per year.

These needs estimates are structured on the basis of an analysis geared to specified transit service levels and related forecasts of travel demand. And, as stated, the estimates take an approach which is consistent with FHWA. However, they are also consistent with empirical estimates of need which come from sources such as specific studies of rail modernization and bus maintenance facilities needs which we have recently completed.

With respect to rail modernization, it was this very committee that requested the Urban Mass Transportation Administration some years ago to conduct an extensive evaluation of how much it would cost to restore all rail transit systems in America to a condition of good repair.

That study was performed almost 10 years ago and estimated that it would cost \$17.8 billion in 1983 dollars over a ten year period to accomplish this goal. Just this past year we retained the same consultant who performed the original work and asked them to update their original findings.

This follow up study reached the general conclusion that while rail modernization needs on our older transit systems remain extensive, we have begun to make progress in improving conditions on these systems. The study found, however, that the capital cost needs which remain total \$15.5 to \$17 billion in 1991 dollars.

With respect to bus needs, simple engineering estimates form the basis for the bus vehicle replacement needs estimates in the Section 308 report. Detailed fleet inventory information is collected annually through the Section 15 Reporting System.

Estimating bus facility needs in the Section 308 Report was not so simple, but a recently completed consultant evaluation gives credence to the Section 308 estimates. This study found that transit operators are programming \$2.1 billion in bus facility projects over the next five years.

Apart from this review of our own report, I want to make reference to the general phenomenon of varying dollar figures for need depending on who is doing the estimating. Frankly, I do not find the variations troublesome, as long as they are explainable. The seemingly wide variations between FTA needs estimates and those of various constituency organizations are not nearly as far apart as they may at first seem to be. The GAO, in my opinion is performing a real service in explaining the differences accurately, and in critiquing the several needs estimates.

To summarize, FTA's estimates have been at the macro level; they are intended to provide a factual basis for a long term program of Federal investment. Such estimates need to be objective and reasonable. Supportable needs estimates are useful to inform decisions about authorization levels, program structure and annual budget authority and ideally to guide policy design of the appropriate roles of the different levels of government in financing the transit function. Supportable needs estimates also provide information on how well we are doing in maintaining and improving our transit systems.

If the assumption that transit service capacity must grow above historical rates in order to meet a portion of the travel demand that cannot be accommodated by highway construction is accepted and the resulting \$7.5 billion estimate of annual capital needs in FTA's 1992 report to Congress is used as a benchmark, it is evident that the full annual authorization levels for the transit capital program in the ISTEA, together with continued overmatching by State and local authorities, would be required to meet that investment goal. The ISTEA authorized level for fiscal year 1993, for example, would finance about 55 percent of the need (\$4.125 billion including WMATA) leaving 45 percent for local match and overmatch.

The budget authority provided in fiscal year 1993 for capital purposes, however, was short of the authorized level for capital by over \$1 billion although the Administration has requested an additional \$752 million in capital funds for fiscal year 1993. In addition to the amounts appropriated to the Federal Transit Administration, about 70 percent of Federal-aid Highway funding is eligible to be used for certain transit projects at the discretion of State and local decisionmakers.

Mr. Chairman thank you very much for this opportunity to appear before the committee.

CURRENT NEEDS AND PROJECTIONS

Senator LAUTENBERG. I would say that that is a good array of professionalism. Everybody finished before the allotted time. [Laughter.]

It reminds me of a time when I was on your side of the witness table. I was running a computer service company that I helped build. I think Senator McClellan may have been the chairman. Someone here did me a favor, they thought, by dragging out my testimony. It was almost bizarre in terms of the time that I had expected to be talking and also the philosophical treatise that I was presenting. It shows you the difference when experience is there.

I thank everybody.

For Ken Mead, I want to ask you this question. But first, I do want to make note of the fact that Mr. McManus in his testimony kind of confronted the question I asked with my question of how do you catch up with the disinvestment and so forth.

Now that is not reflected in this analysis here, obviously, because this talks about a 1992 review, and I am still not sure about how we got AASHTO from 1988, APTA in 1990 and FTA in 1992, even though those figures are expressed in constant 1991 dollars. The fact is, if the estimates were made based on that period of time and those conditions, how do we adjust for current needs and current projections?

How do you see that?

Mr. MEAD. That is so, Mr. Chairman. For example, capital expansion, AASHTO's was done in 1988. We did all the adjustments that we could possibly do to reconcile the three. But in AASHTO's case, they relied on a pipeline of grants applications that people had submitted to FTA.

Now, if you recall that period of time, this was not exactly a program that was undergoing expansion. If you took 1991 grant applications, it might very well be different. But these organizations did do their estimating in different years, and there are some imperfections, as you point out.

Senator LAUTENBERG. I would ask each one of the people from the two non-FTA organizations whether this information is not available on a more current basis?

Jack?

Mr. GILSTRAP. We have recently conducted a survey of our members in regard to the questions asked by the administration about what we could do in terms of economic stimulus and how many jobs might be created, how many projects might be gotten underway within the next 6 months.

We have submitted a report to that question. We have not updated this one beyond what you have now. But I must say, Mr. Chairman, I think we have a good deal of confidence in what we have submitted to you because it goes into quite a bit of detail as to the specific kinds of projects and the expansion programs and proposals that our members have in mind. That has been submitted for the record to you.

Senator LAUTENBERG. Mr. Francois.

Mr. FRANCOIS. Mr. Chairman, it is difficult to do transit projections currently because of the many factors I have noted that are still to be decided. Overall, we do rely heavily on the section 15 reports, obviously, that the FTA does.

The future I think will change sharply in this regard. As a result of the ISTEAs, the MPO plan with its transportation improvement program must address both highways and transit in very real terms in a relatively short timeframe, a 3-year time period. That in turn, must be reflected in the newly required State transportation plan, which also must take transit into account.

So, in my judgment, by this time next year we are going to have some very hard numbers to work with.

Senator LAUTENBERG. I would hope that would be the case because it gives me a little more confidence as I look at the numbers. I come to a conclusion, perhaps incorrectly arrived at, that these needs might be significantly higher based on ISTEAs, based on an understanding of where we are going, based on the recognition within the various State transit agencies, transportation agencies, that it's possible to get funding for projects, which gives them a little encouragement to ask for the grants. There is such a keen interest by private parties in getting involved with this that it expands the horizons.

Mr. Mead, one of the things that I wanted to ask you is if you have a kind of thumbnail view of the disparity between these needs projections. Where do you see them? I mean, FTA's, in sum total, is much different than the other groups' projections.

Mr. MEAD. Yes, sir; I think the climate is right. There is an air of constructiveness. I think you are going to see a much greater commonality between the projections of these organizations in the future.

FTA does need to include operating costs. It is a separate issue, as I said, whether or not Congress decides to fund those. They are, in fact, a need. There is no point ignoring that. And, as Mr. Francois said, the ISTEA transportation plans and the underlying systems that feed into that plan will provide you with actual data from transit authorities. You do not have that information now in terms of prospective need in the FTA estimate.

VALIDITY OF OPERATING NEEDS PROJECTIONS

Senator LAUTENBERG. Do you want to comment on the validity of AASHTO's or APTA's operating needs projections? There is a degree of closeness there, but, nevertheless, we are still talking about \$2 billion. What kind of perspective is that?

Mr. MEAD. AASHTO used a different base year for calculating operating needs than did APTA. That accounts, I think, largely for the difference between those two.

Actually, the dollars for operating needs reflect mostly historical costs without much accommodation for any expansion. It is almost an auditing exercise.

Senator LAUTENBERG. But is there an estimate of need resulting from ADA or Clean Air?

Mr. MEAD. Only in the FTA estimate, and I would not go to the bank with that one. It is about \$260 million a year. It is based on a highly generalized regulatory cost estimate with no projections from State and local jurisdictions as to what it might cost.

Mr. MCMANUS. I just could add a comment, Mr. Chairman, if it would be helpful.

Senator LAUTENBERG. Yes, please.

Mr. MCMANUS. In the regulatory impact analysis for the ADA regulation, there was an analysis of operating cost implications of that regulation and the law. The figure used I believe was something like \$230 million a year, beginning at the beginning of the period of adjustment to the ADA, going up to as much as \$500 million in the latter part of the 5-year period in which the grantees have to adapt to the requirement for the paratransit plans.

But it was a rough estimate. It does, nevertheless, indicate that there are costs generated by that Federal requirement.

Senator LAUTENBERG. I assume that once the present inventory of buses, railcars, et cetera, are dealt with, the ADA costs will be more of normal capital costs and not require the catchup costs.

Mr. MCMANUS. The ADA capital costs are included within the context of the FTA needs report, and they are estimated to run roughly, including both bus and rail systems, at about \$255 million a year.

Senator LAUTENBERG. Jack.

Mr. GILSTRAP. Mr. Chairman, I would also point out that one of the important new services mandated by ADA is the paratransit door-to-door service which all transit systems must now provide as a supplement to the regular line haul operation. We are finding those services to be extremely expensive in terms of operating

costs. That, of course, is an ongoing thing. Unlike the capital, we are faced with that permanently.

Senator LAUTENBERG. Yes; that we recognize. There is a service to which we are committed, and when you make a commitment to have the service, you also, whether you choose to or not, make a commitment to provide the funds to supply those services.

But I was interested in the capital side because one day there will not be buses manufactured, I assume, that do not have the appropriate facility for the disabled. So also with railroad cars, and I assume that changes will be made in stations, et cetera, that are going to be more or less one-time modifications. It may take some years to catch up, but, once done, that is the way we are going to live our lives in the transportation world.

In trying to determine expansion needs, what would any of you say in terms of what kind of a system, what kind of matrix do we lay out for ourselves to try to estimate expansion needs? They ought to be really dealt with. But they ought to be dealt with separately because those are so specific in terms of requests by members, requests by organizations—you know, do we want to expand city A, city B, area D, whatever. So what can we do to anticipate what these might be in timely fashion?

Mr. MEAD. I think one possibility, Mr. Chairman, is that in implementing regulations over the coming months for what should be in these transportation management systems at the local level and what should be in the State plans, DOT could prescribe some criteria so that you would not get expansion estimates that were totally unconstrained. You would not want expansion needs that were simply wish lists. On the other hand, you do want realistic expansion needs within possible ranges of funding availability.

Mr. MCMANUS. Well, we think we have done a major thing in this 1992 needs report in picking up on the methodology used by FHWA, where they use travel demand forecasts and then convert those forecasts into capacity requirements.

We have done the same thing with the transit needs estimate, and we are collaborating with FHWA so that, within the next couple of years, we expect to be putting together a common needs report on surface transportation that is based on a common methodology for forecasting expansion requirements.

FHWA has used that technique for years and years, and it does result in taking into account things like the requirements of the Clean Air Act, the impacts, and some judgment about to what extent transit has to pick up on providing some of the capacity requirements that the highway construction will not be able to accommodate.

I think that is a very big breakthrough in our approach to estimating demand.

TRANSIT NEEDS OF REMOTE AREAS

Senator LAUTENBERG. I think the ADA and Clean Air are relatively easy things to introduce into the formula. When you get into, you know, where is the growth going to come from, the projections about the population movement closer to the coasts, like Senator D'Amato and I have those beautiful places of ours, how do you deal with population growth in different areas? What is the respon-

sibility to some of the more remote areas for transit and transportation needs?

Mr. FRANCOIS. Mr. Chairman, I would underline what Mr. McManus has said here. I think we need to emphasize it again.

In our judgment, the splendid cooperation that has developed over the last 4 years between FTA and FHWA is extremely important.

Senator LAUTENBERG. I agree.

Mr. FRANCOIS. The need number that FTA is including here I would underline again is based in large part on the FHWA's judgment that some 34,000 lane miles of projected highways in urban areas will never be built. Ergo, transit had to pick up that.

Now that is what we are going to find more and more as these planning processes move forward.

With respect to ADA costs, it is true from a capital standpoint yes, it is a one-time cost, but not really, because every time you buy a replacement bus in future years, it, too, will cost more. So that keeps rolling through the process also.

But I think that the important thing is that we are beginning to come to grips with looking at highways and transit as part of a system more in context with land use patterns, which gets to another issue that you are touching on, growth and how do you accommodate it. The new transportation plans that will come out of ISTEA are going to look very different than anything we have seen before.

Senator LAUTENBERG. Jack, did you want to comment on that?

Mr. GILSTRAP. Senator, I think Frank's final comment here is certainly on the money. I think we have to be very careful about relying too much on demand forecasts because that does not take into account other national priorities. We have already mentioned the Clean Air Act. We have energy considerations. There is a whole array of other issues, and it raises the question in land use, as Frank said, it raises the question of do we attempt to constantly, constantly, forever respond to the single-occupant automobile demand.

I think that is probably the crux of the issue, and we have to somehow get on top of that vehicle-mile travel issue. I think to focus too greatly simply on demand and try to continue to build to satisfy a demand without trying to adjust that curve would be a mistake.

STATES' SHARE OF CAPITAL INVESTMENT

Senator LAUTENBERG. Mr. Francois, you produced a number that was the State, the collective States' share of capital investment. It was \$6.2 billion, I think.

Mr. FRANCOIS. Right. \$6.2 billion counts everything, both operating and capital.

Senator LAUTENBERG. Right. In the number that you presented for this chart, you include, I assume, the States' share when we look at a figure for AASHTO of \$20.5 billion?

Mr. FRANCOIS. Yes; all sources would be in that number.

Senator LAUTENBERG. Is everybody agreed on that? I mean, do the others also include it?

Mr. MEAD. [Nods affirmatively.]

Mr. MCMANUS. [Nods affirmatively.]

Senator LAUTENBERG. So this is not a request by any stretch of the imagination.

Mr. FRANCOIS. No; that is not the Federal program, Mr. Chairman.

Senator LAUTENBERG. I just wanted to be sure.

Mr. FRANCOIS. We would like it, though. [Laughter.]

Senator LAUTENBERG. Mr. Francois, in terms of the FHWA numbers that are produced, do they accurately, do you think, depict the economic development and cost tradeoffs between highways and transit?

Mr. FRANCOIS. Mr. Chairman, they have been working with that issue for several versions of this every 2 year document. I do not think they are there yet, either. They are certainly doing far better than they were. They are doing better than we are doing.

We have some research underway in this area right now. We think that their work is adequate, given the knowledge that we had to work with.

Senator LAUTENBERG. Thank you very much.

We were joined earlier by my colleague from New York, Senator D'Amato, the ranking member of this subcommittee.

Senator D'Amato, we are delighted, as usual, to have you with us. The witnesses are there to question, or if you would like, make a statement.

STATEMENT OF SENATOR D'AMATO

Senator D'AMATO. Mr. Chairman, I am going to ask that my statement be included in the record.

Senator LAUTENBERG. Without objection.

[The statement follows:]

STATEMENT OF SENATOR D'AMATO

Mr. Chairman, I join you in welcoming our many witnesses today. Although we do not yet have a fiscal year 1994 budget proposal for the Federal Transit Administration, the FTA and transit advocates have estimated general programmatic needs. Transit authorizing legislation, the Intermodal Surface Transportation Assistance Act (ISTEA) has provided for the basic \$30 billion, 6-year funding program.

ISTEA authorizes transit funding of roughly \$5 billion per year though fiscal year 1996, with an increase to \$7.25 billion in fiscal year 1997, the final year of the bill. The Department of Transportation has estimated that \$3.9 billion per year is needed simply to maintain current transit conditions, and \$7.5 billion per year would be needed to improve conditions. The fiscal year 1993 Transportation Appropriations Bill provided \$3.8 billion for the Federal Transit Administration, including \$802 million in operating aid.

The Administration's fiscal year 1993 Stimulus proposal would increase current year transit funding by \$752 million (\$482 million for formula capital grants and \$270 million for discretionary capital bus grants) up to a total of \$4.55 billion. If enacted, the new funds would still leave transit about \$685 million short of the \$5.235 billion authorized for this year. No additional operating funds were requested.

According to DOT, the transit program now has \$1.125 billion unobligated in the Section 9 formula capital and operating aid program, and \$2.87 billion unobligated in the Section 3 discretionary capital grants program.

The Section 9 money can be expected to spend down fairly quickly during this fiscal year; however the \$2.87 billion in Section 3 is slower spending capital for new starts, rail modernization, and large bus-related projects.

Even though transit investment needs are significant, it is especially hard to justify the additional \$270 million for discretionary bus projects in the stimulus proposal given the current Section 3 backlog, and our more pressing need to reduce the deficit and cut spending.

Mr. Chairman, I am interested in hearing from our many, varied witnesses on today's panels.

ENCOURAGING ALTERNATIVE FUELS

Senator D'AMATO. I would be remiss if I did not tell you that I am looking forward to this forthcoming session with you, as we have these past years, in a cooperative effort to see that we manage our resources and meet some of the pressing needs that the witnesses have testified to as they relate to moving people in the most cost effective and efficient manner and in a manner environmentally that makes sense.

Although this committee, probably going back 6 years ago, 4 years ago, and even 2 years ago, has done as much if not more in the area of encouraging alternative fuels—natural gas buses, et cetera—I would hope that, together, we could even do more in that area.

I do not like to come down on anyone in particular. Some of the transit properties, for example, in my own home State, have demonstrated a great concern and flexibility and have undertaken these programs, albeit maybe in small steps, particularly our upstate communities of Rochester, Buffalo, and Syracuse, and down in Long Island, Nassau. But the major offender of these operations in terms of running diesel buses that spew out all kinds of toxins into the air is our own local transit authority in the city of New York. You cannot get these people to even begin to look at what has taken place.

I have to tell you that I am determined, and because you have shown a keen leadership, with your help I hope not to yield to the same old, tired local rhetoric, which are such that well, "we will put on a trap to catch all the stuff," or "it is too costly."

It is not too costly. We have to deal with this now because sooner rather than later we are going to have the EPA come in and start really doing some dreadful things that the law requires if we are not in compliance with these clean air standards.

I am looking forward to working with you, Mr. Chairman, and making that a very real push. I know that Senator Moynihan shares my concern. He has been a leader in the area of basic environment.

I know that you have demonstrated a keen awareness in leadership in the environment. I just look to my city of New York and it is disgraceful to see those machines operating the way they do almost 24 hours a day, spewing forth that stuff. It is not right and we should not be funding it.

I don't know if anybody wants to comment on that. I would be very interested if they do.

Senator LAUTENBERG. I do not, but perhaps a witness does. [Laughter.]

Senator D'AMATO. Mr. Gilstrap, do you care to comment? I put you in a ticklish position, didn't I?

Mr. GILSTRAP. Senator, we are trying very hard as an industry to respond.

Senator D'AMATO. Jack, tell them I may not be successful, but don't bet against me. I am going to look for ways to limit the use of dollars as it relates to buses unless we begin to bring in at least

certain percentages, particularly in the big properties, that use clean burning fuels.

Mr. GILSTRAP. I will tell them, Senator.

Senator D'AMATO. We cannot continue business as usual. If we can do it cooperatively, fine.

Let me tell you that I don't care if I lose a fight. But I am bound and determined, and I win as many as I lose. I am telling you that I am not going to let it go. This just has to stop. I mean, this is long enough.

Now, obviously, it is easier for any and all and most institutions to do business as usual, and the people who run these properties are good people. They are not bad people. And there are problems attendant with change.

The President has talked about the need for change. By gosh, if there isn't a need for change the way these properties operate, I mean they are soot producing, grimy machines. That is what they are. It is wrong.

And, by the way, we are importing most of that stuff. So if we want to make a sound, rational policy, why don't we use fuels that we produce for the most part, whether it is natural gas or other alternatives, and hold down on the importation, improve the environment, and move in the right direction.

So I don't know if you want to invite me to be your speaker. You used to do it. [Laughter.]

Mr. GILSTRAP. We'd love to have you, Senator.

Senator D'AMATO. They used to also have a small stipend attached to it. So I used to love to come—off the record, of course. [Laughter.]

I mean, that is no longer the case.

Now I want you to know I didn't really say that. Ann sitting behind me is a ventriloquist. [Laughter.]

That is the end of my little D'Amatoesque joke.

Senator LAUTENBERG. One of the things that I certainly would agree with is you win more fights, Senator D'Amato, than you lose. Being on the other side of an issue with you is not a lot of fun.

Senator D'AMATO. We have not been on too many opposite sides of things.

Senator LAUTENBERG. Oh, no, no. But I have seen other people fall in the aisles against you. [Laughter.]

But I would say this, that you are not wrong in demanding cleaner emissions because there is a toll, as yet unmeasured but significantly there, on human health. There is a toll, as yet not significantly measured, on buildings and structures, facilities, infrastructure. It's enormous.

Senator D'AMATO. That's right.

Senator LAUTENBERG. I guess the only people who disagree with you might be an auto laundry association or something. They would like to keep things as they are.

Thank you very much. Thank you, Senator D'Amato and thank you all at the witness table.

PANEL II—TRANSIT AUTHORITIES

NONDEPARTMENTAL WITNESSES

SOUTHEASTERN PENNSYLVANIA TRANSIT AUTHORITY [SEPTA]

STATEMENT OF LOU GAMBACCINI, GENERAL MANAGER

PORTLAND TRI-MET

STATEMENT OF TOM WALSH, GENERAL MANAGER

CITY OF PORTLAND TRANSPORTATION BUREAU

STATEMENT OF EARL BLUMENAUER, COMMISSIONER

SOUTH WEST TRANSIT ASSOCIATION AND LOUISIANA PUBLIC TRANSIT
ASSOCIATION

STATEMENT OF PAT JUDGE, PRESIDENT

INTRODUCTION OF WITNESSES

Senator LAUTENBERG. We will now hear from the next panel, including Lou Gambaccini, Tom Walsh, Patrick Judge, and Earl Blumenauer.

We invite you to give your testimony under the same rules and conditions. The clock is a menacing thing, but we want to hear what you have to say in very serious fashion. We have your formal statements submitted for the record. Any who have not presented them, we invite you to do so. We would ask that Mr. Gambaccini be the first to testify. Welcome.

Mr. GAMBACCINI. Thank you, Mr. Chairman. It is a pleasure to be here and to talk about SEPTA's problems, particularly as they relate to financing and physical infrastructure.

SEPTA operates five modes of service. It is a very extensive system which includes service into Trenton and West Trenton, NJ, as well as into Wilmington, DE. We operate some 1,400 buses, 13 commuter rail lines, 5 trackless trolley routes, 3 high-speed rail systems, and 7 light rail routes.

We are a multimodal system, much like the other major cities of New York, Chicago, Boston, Cleveland, and the like, and we have many of the problems—in some cases worse—in the physical disrepair.

We have been suffering in recent years a decline in ridership, which is a direct result of a decline in population, decline in jobs, and out-migration of population. The overall state of the economy has contributed to it.

In our city division, we have lost 16 percent of our city ridership in a 4-year period. We have had to reduce service by 10 percent in the same period, and this fiscal year we cut 10 percent—\$65 mil-

lion—out of our budget. We were able to do it for most of one-half of that saving through other than service cuts. We exhausted every possibility to pick up savings, including a major successful attack on fraudulent claims, which has reduced claims exposure and outlays by close to 50 percent in the last 3 years.

We have reduced administrative staff by 300 people. We have reduced benefits to our employees by \$7 million in the first year's effort, thanks to the cooperation of the union, which has helped to offset the pressures of our budget.

The Federal operating contribution is now less than one-half of what it was 12 years ago. Twelve years ago, it was \$61 million. Today it is \$27 million.

We have gone from about 18 percent of our operating budget to less than 4 percent of our operating budget supported by the Federal Government.

You mentioned earlier ADA and mandates. This year, despite a \$65 million budget cut and service cuts to the basic operation, we are increasing our operating costs to serve the requirements of the disabled under ADA by \$7 million and our capital costs by \$5 million. We expect our operating costs to rise \$3 to \$5 million a year over the next 4 to 5 years until we get to full compliance with ADA requirements.

We believe that our passengers are already paying substantial fares. We are among the highest for operating recovery ratio systems in the country and, given the decline in ridership, the extreme condition of unemployment, and poverty in our region, we believe that increasing fares is not a constructive way to go, given all the other realities.

The single biggest crisis confronting us is the operating budget currently. But in the background is the physical disrepair.

When I first arrived at SEPTA 4½ years ago, I was determined to lay out a 10-year rehabilitation program which we estimated at \$4.5 billion, or about \$450 million a year. We were then getting about \$100 million a year. So we were deficient \$350 million in order to rebuild the system to an adequate level.

I would mention, by the way, that of the \$4.5 billion, well in excess of \$1 billion is the disrepair of the former Conrail passenger service, which we took over responsibility for 10 years ago and still have a massive reconstruction effort to accomplish.

We were successful in getting 2 years ago a State dedicated fund which doubled our capital funding from \$100 to \$200 million a year. This is a significant step forward. It is still, however, overall far less than is needed.

If I could digress from the testimony for a second just to tell you about one project, Rail Works, which is in the process of replacing 25 bridges affecting six of our commuter rail lines, this is on the former Conrail service. This has been a model, in my opinion, of what we should be looking at in economic stimulus around the country. It is vitally needed work, replacement of 25 bridges, well within budget with all kinds of beneficial community benefits, including substantial achievements in jobs for local, minority, and unemployed.

We strongly support the economic stimulus. Our needs far exceed the stimulus money. But, nevertheless, again, it is a step in the right direction.

We are dismayed to hear discussion in Washington currently about the allocation of the 2.5-cent gas tax which previously went to the deficit reduction and now proposed all to be put in the highway account. This would be a travesty, given the extreme needs of transit and the historic allocation of 20 percent of gas tax refunds to transit.

In short, let me just say that we support the economic stimulus package. We strongly support full funding for ISTEA. We support, indeed we almost insist, that at least the maintenance of 20 percent of gas tax revenues be preserved for transit. We really believe that it should be increased. We are prepared to delay discussion of that into a deeper future. But we do believe maintenance of the status quo is essential.

We have got to attack new problems—for example, suburb-to-suburb commute, reverse commute. We have done some innovative things in our area, which I will be happy to discuss if there is any interest.

Mr. Chairman, as general manager of SEPTA and as chairman of the American Public Transit Association, we applaud your efforts in being such a leader in support of transit and particularly in keeping us alive on the operating assistance front. We look forward to working with you in the future. Thank you.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much, Mr. Gambaccini. We have your complete statement and it will be made part of the record.

[The statement follows:]

STATEMENT OF LOUIS J. GAMBACCINI

Good morning. My name is Louis J. Gambaccini. I am the General Manager/Chief Operations Officer of the Southeastern Pennsylvania Transportation Authority (SEPTA). SEPTA provides public transit service in Philadelphia and the four adjacent Pennsylvania suburban counties. We also provide commuter rail services to Trenton and West Trenton, New Jersey, as well as to Wilmington, Delaware.

We are a large multi-modal system with over one million boardings a day on our 1400 buses, 13 commuter rail lines, five trackless trolley routes, three high speed rail systems and seven light rail routes.

Similar to the systems in New York, Chicago, Boston, Cleveland, and San Francisco, SEPTA's infrastructure is old and continues to suffer from the disinvestment practiced by our predecessors from the private sector and from the substantial decline of assistance from the Federal Government over the past 12 years.

In spite of this, SEPTA delivers nearly 70 percent of Philadelphia's central business district work force to their jobs each day. We have also been able to develop a "reverse commute" clientele of Philadelphia residents who utilize our system to get to jobs in the expanding suburban employment centers.

Like most transit systems in the nation, SEPTA faces a number of challenges. We confront difficulties in the areas of operating, capital and in the basic structure of the transit services we operate. I would like to take a few moments to describe the nature, magnitude and possible solutions in each of these areas.

Perhaps most illustrative of SEPTA's operating budget difficulties is the situation which confronted us during the current fiscal year. Transit as a business is extremely sensitive to economic downturns. If there are no jobs for people to go to, they do not need transit to get there. If consumer confidence is low, people do not take transit to shop. As a result, SEPTA, like most other transit systems, has experienced a decline in ridership. In fact, SEPTA's City Transit Division ridership today

is approximately 16 percent below what it was four years ago. Although we have seen a slight improvement in the last two months, we are not yet confident that the trend will be permanently over until the economy fully recovers. In addition, due to the decline in revenues as a result of this ridership loss and the failure of subsidizing governments at the federal, state and local levels to provide sufficient funds to fill the gap, SEPTA has also been forced to reduce service. In the last four years we have reduced service by about 10 percent. This has led to further reductions in ridership. In terms of actual operating expenses, SEPTA has reduced its expenditures this year by 65 million dollars, to a level of \$600 million. Last fiscal year, we spent \$628 million to provide transit service.

We attempted to minimize the disruption to our riders while we cut these expenses. Before we made any service cuts, we reduced administrative staff by 300 people. We worked with our unions to reduce benefit expenses by \$7 million in the first year. In addition, we restructured many SEPTA functions, to reduce costs. We met more than half of our required reductions without reducing service levels. However, we were forced to reduce service in order to meet our budget constraints.

The federal operating subsidy to SEPTA today is less than half of what it was more than 10 years ago. In fiscal year 1981, SEPTA received approximately \$61 million from the federal government toward our operating expenses. This fiscal year, we will receive slightly more than \$27 million. When it was enacted, the Intermodal Surface Transportation Efficiency Act (ISTEA) recognized the declining role the federal government played in supporting mass transit operation. It provided, for the first time in 10 years, a mechanism to increase operating subsidy to reflect transit's increased cost of doing business. However, the funding necessary to allow this increase has never been made available.

As we begin to prepare our budget for next year, SEPTA is again confronting a difficult situation. We believe it is counter-productive to cut service any further. In addition, we believe that it would be difficult for many of our passengers to pay higher fares. That leaves us with the final segment of our budget as a solution—increased subsidy from our governmental sponsors. And yet, Philadelphia remains in a difficult fiscal situation itself, just beginning to recover from near bankruptcy. The State of Pennsylvania is experiencing slight growth in revenues and yet it must fund required increases in many social service programs to address problems which receive less federal funding today than they did a few years ago. Recognition by Congress of the ISTEA provisions allowing for inflationary growth in operating subsidy would contribute to a solution of the operating difficulties confronting us.

The next major difficulty confronting SEPTA is the deterioration of our physical plant. Many of SEPTA's fixed assets, such as track bed, elevated structure and rail stations date from the end of last century and the beginning of this century. As private operators became less profitable, they ceased investing in the future of their assets. Thus, when SEPTA came into existence to acquire and operate the formerly private systems in the Philadelphia region in the 1960's, it was presented with a severely deteriorated system.

When I got to SEPTA, one of the first things which I attempted to define was the overall capital needs of the system to bring it into safe operating condition and to begin to make improvements to encourage ridership and meet new travel demands. At that time, we identified a 10-year capital need of \$4.5 billion—\$450 million a year. Available resources were primarily available through the federal program and totalled approximately \$100 million per year.

Together with the other transit systems, large and small, Urban and rural, in Pennsylvania and in unison with the highway industry, SEPTA sought a dedicated source of funding for capital investment at the state level. We succeeded in obtaining a funding source which provides SEPTA with approximately \$100 million in new money every year. However, this still leaves us woefully short of the total need.

At approximately the same time, Congress passed the ISTEA reauthorizing package. It promised great aid in finally being able to restore our system. However, as you are well aware, ISTEA has not been funded at its fully authorized levels. We anticipate with great hope the passage of the President's proposed economic stimulus package which will bring SEPTA approximately \$15 million in formula money and from which SEPTA also will seek funding of its Midvale garage project—a replacement facility for which SEPTA has had an application on file with the Federal Transit Administration since 1989. It has never been approved because there has never been sufficient funding available in the Section 3 bus Category to do so.

However, the need for capital funding exceeds the need for a one-time shot of extra federal money. Although we are grateful for the economic stimulus proposal, I should point out that the moneys proposed bring the highway program to the level of full funding under the ISTEA, while the level of funding proposed for mass transit takes us only halfway from current levels to the fully-funded level. In addition,

although the Administration's expressed support of mass transit has made us very hopeful, the proposal to extend the two and a half cent gas tax which is currently devoted to deficit reduction and dedicate it to highways causes us some concern. We believe that the money should be used for transportation purposes, however, we believe that the money should not abrogate the hard fought sharing arrangement which transit was able to achieve in the 1980's—20 percent of the funds for transit with the remaining 80 percent going to highways. Yet, that is what the Administration has proposed.

In summary, transit is seeking Congressional action in three areas to support re-investment in transit infrastructure: Quick enactment of the economic stimulus package; full funding of ISTEA for the remainder of the authorizing period; and dedication to transit of at least ½ cent of the two and a half cent gas tax which the Administration has proposed to extend and convert from deficit reduction to highway uses.

The final difficulty which confronts SEPTA is the need to restructure its role and its services to meet the demands of the future and to allow transit to meet the challenges of such social goals as clean air, reduction in congestion, and economic vitality. Most older large transit systems like SEPTA were built to accommodate a commuting pattern from the suburbs to the city—in radiating spokes from the downtown area. Today, the largest increase in commuting is from suburb-to-suburb. Traditional bus services cannot compete because they must travel in the same congested traffic as the automobile. And travel patterns are not easily serviced by traditional transit because of dispersed patterns of residential and commercial property uses.

Some of this challenge can be met through simply restructuring routes. Other aspects of it must be met through a revised view of what is needed to provide mobility for the citizens of our urban areas. ISTEA went a long way toward doing that by allowing localities to determine whether transit was a better solution to mobility needs than more highways—by creating the ability to “flex” funds from the highway program to mass transit projects. However, to date, many states, such as Pennsylvania, have not taken advantage of the flexibility created by ISTEA. They have continued to do business as usual, or they have simply been unable to proceed in any direction due to the newness of the concepts in ISTEA.

Some of the problems in fully utilizing the ISTEA provisions will be cured simply by the passage of time and greater familiarity with its mechanisms. Some, however, may take further urging from Congress to truly level the playing field by measuring the benefits of competing projects clearly in terms of their ability to meet Congressional mandates for clean air.

I look forward to working with you on these various issues, both in my role as General Manager of SEPTA and in my current role as Chairman of the American Public Transit Association. I believe that transit plays a role in a number of areas that are of critical importance to this country. However, I also believe that we may need your assistance in order to be able to play that role effectively.

Thank you for your attention. I would be happy to answer any questions you have.

STATEMENT OF SENATOR SPECTER

Senator LAUTENBERG. We are joined by our colleague from our neighboring State, Senator Specter. Senator Specter has an active interest in this subject.

Mr. GAMBACCINI. I'm sorry. I did not see Senator Specter arrive, or I would certainly have mentioned him in connection with the support we have had, which has been great.

Senator LAUTENBERG. I'm sure of that.

Senator Specter has been a vigorous proponent of funding for the SEPTA system and very helpful on transit funding. I know that he wanted to be here to greet you.

With that, Senator Specter.

Senator SPECTER. Thank you, Mr. Chairman. I appreciate an opportunity to say just a word or two at this time. I did want to stop by and pay my respects to the Chair for convening these important hearings and to the witnesses who are coming in, and to give spe-

cial greetings to Lou Gambaccini, who has done such an extraordinary job as the head of SEPTA.

It is a lonely job being a subcommittee chairman, which Senator Lautenberg is here. You may wonder where all the other subcommittee members are. I can assure you that I just came from an Energy Committee hearing and on the floor with health care. There are just so many other items.

But the transportation needs are very important, and I am delighted to see that the supplemental appropriations bill is going to have increased funding. I am delighted that the new President, President Clinton, is making the infrastructure a priority item.

I am just hopeful that we can come to the day where we have the entire trust fund from the gas tax dedicated in part to mass transit to be used for that purpose because those issues are enormously important.

The chairman has been very diligent in proceeding with a number of hearings. This is the fourth so far this year, which is the most of any subcommittee, to my knowledge, and I am on five subcommittees, of the Appropriations Committee. Some have not met at all, and this is our fourth meeting, which is a good sign of the focus of activity.

I have staff here who will follow closely what is being done. We will work very hard with the chairman and others to try to get increased funding for mass transit.

Thank you very much, Mr. Chairman.

Senator LAUTENBERG. Thanks very much, Senator Specter. One of the things that transportation seems to do very readily is attract bipartisan support. I was delighted and thankful for Senator Specter's support of the stimulus package proposed by the administration and by ourselves here.

We are going to work hard to get it. I, too, share Mr. Gambaccini's dismay in terms of portraying the 2.5 cents that will become available to us as solely highway funds. I think there may be some question of terminology here. But since the public statement, the Secretary knows very well that there is a good deal of interest in getting a share of those funds for transit. It is desperately needed.

In the last few years, Senator Specter and I shared a very common interest in what happens in the Philadelphia area and in the region, generally, because what is good for New Jersey, is good for Philadelphia, and vice versa. We have traffic going back and forth, and we are distressed that only Senator Specter has been the single leader trying to keep the Philadelphia Navy Yard going with its employment base solidly in place. We work together on that and on the transportation side of things also.

It is very important that we have the kind of unity that you have heard from Senator D'Amato and now from Senator Specter and from others on our side.

We thank you very much.

Now we will hear from the Portland folks. I don't know whether you want to divide the time. You have 5 minutes to share. Does one of you want to testify and the other provide backup?

However you want to do it, you have 5 minutes. If you want to toss a coin, we are allowed to do that here.

STATEMENT OF TOM WALSH

Mr. WALSH. Mr. Chairman, we will split the time. My name is Tom Walsh. I am the general manager of Tri-Met.

In modest contrast to Lou, I come from the opposite coast. I come from a transit system which is thriving, and I am new to the industry.

I come out of 30 years as a private contractor. As I joined this almost unique public agency, four things struck me as very similar to experiences I had had in the private sector.

It is a group that operates by common sense. We have an ethic that says do it right the first time. We think ahead practically and we treat our customers well.

We have entered into the record and put before you a document, our strategic plan, which is also a business plan. In it we emphasize not only what it cost but what does the investment buy.

A hallmark of that document is our concept of partnership. We have 27 local governments, 3 State agencies, including our Department of Transportation, our statewide land use agency, and our Department of Environmental Quality, who are crucial partners to us in making transit thrive in Oregon.

We see a transit system which has three active rail lines by the year 2005 and three other lines in construction and planning. With help which you gave us a year ago, we will, 60 days from now, place an order for the first low floor light rail vehicles in North America.

Our system will expand from 500 buses to 1,500 buses of all sizes and all flexibility over the next 12 years. We have made a commitment enthusiastically and aggressively to complying with ADA.

Like all agencies, like all growing concerns, we look to funding. Our needs are principally capital funding. We will, in the current rail line that we have under construction, make aggressive use not only of section 3 appropriations but under the first full funding grant agreement negotiated with FTA under ISTEA include STP funds in the construction of that line.

We have simple rules for our capital projects. We finish them on time, under budget, and without litigation.

This committee and the Congress have given us significant help over the years. You, Senator Lautenberg, and your colleagues, including Senator Hatfield, have been superb partners with us. For a continuation of the efforts that you have put in place, we specifically urge full funding of ISTEA. We ask, last, that you continue to demand not only of our agency but of all agencies real cooperation both from transit and highway, that you require us to set expectations high and to meet those with performance.

PREPARED STATEMENT

Thank you, Mr. Chairman, I will submit my prepared statement to be inserted in the record.

[The statement follows:]

STATEMENT OF TOM WALSH

Mr. Chairman, Members of the Committee. I am Tom Walsh, General Manager, of Tri-Met in Portland, Oregon. I am honored and privileged to appear before you today to discuss transit issues in our community.

We have been asked about transit needs and the federal role.

Clearly, we, like other systems, need financial help for the maintenance and preservation of our fleet and for long term expansion.

To put it quite succinctly, we need:

1. \$110 million a year for the next four years to finish the Westside light rail project
2. \$19.5 million for bus replacements next year, and we have made the application to FTA's regional office as part of the President's stimulus package
3. Strong Section 3 new start appropriations and FHWA Surface Transportation Program appropriations so that we may finish a region wide two-state Light Rail Transit system that will cost over \$4 billion

Innovation, Flexibility and Partnership

But today I would like to emphasize that our help from the federal government can't be limited to funding. We need support and help with innovative strategies that make transit work better. We need more flexibility in using what funds are available and we need encouragement to form partnerships with federal as well as local agencies in forming solutions to the problems of a growing urban environment.

Context

We are a mid-sized community. There are slightly more than one million people in the Portland area.

We have 582 transit vehicles, 26 of them light rail vehicles. We employ 1,750 persons, over 1,000 are bus and rail car operators.

For seven years, since the start up of light rail in 1986, we have been riding a tide of success. Ridership is up, public approval is in the 90 percentile. Development has surged around the rail line. Transit is seen as a key factor in housing, development, clean air, economic development and congestion control.

Portland's commitment to public transportation is now intense, visible, and accepted.

But this hasn't always been the case. Public transit in Portland has gone through a resurgence. Transit had 60 million riders a year in 1946, but only 17 million in 1969.

Now it has reappeared as an important ingredient in the Portland area landscape, with 44 million passengers a year, an efficient bus system, an elderly and handicapped system that carries 560,000 rides a year, and a modern and attractive rail line. We carry 200,000 boarding riders a day, up from about 150,000 in 1987.

Three years ago the American Public Transit Association, awarded Tri-Met the honor of being named "America's Best." But it is not simply a love affair with trains and buses that caused this resurgence.

Instead, it is a belief that the community of the future will be a product of the wise use of the land and sensitive development of the economy, innovation in investment and market strategies, creation of strategic partnerships, and a commitment to well run organizations. In short, a vision for the future and a plan to get there.

These notions depend upon the presence of a transportation system that balances the application of roads and public transit in a tightly compact emerging community. The concepts that led to the present commitment were:

1. The community's underlying values; what it has wanted to be.
2. The development of transit as a strategy in a system that supports density and orderly growths.
3. Establishing governmental partnerships as a tool for community goals.

THE COMMUNITY'S UNDERLYING VALUES

Much has been said of Oregon, that we're conscious and protective of our native environment, protective of our neighborhoods, committed to conserving energy, and worked hard to prevent urban sprawl.

The fact of the matter is that until 1972, the Portland area's vision of itself was one that cut up the central city and its neighborhoods with 54 urban freeways, turned its back on the central business district in favor of suburban development, in fact sprawl, and demanded the support of an auto reliant transportation system that relied heavily on fuel consumption from foreign sources, casting the transit system adrift in a sea of inefficiency.

There was a revolution of sorts starting in 1972 that caused the community to look at itself hard.

The transportation plan on the books at the time was the Portland-Vancouver Metropolitan Area Transportation Study (PVMETS). With 54 new freeways and expressways, it literally would have cut up the community.

One of its freeway projects had just been added to the interstate system, the Mt. Hood freeway. When the community began to realize that it would remove one percent of the housing stock of the city, and still not reach Mt. Hood, a freeway revolt ensued.

A citizens' group called S.T.O.P. (Sensible Transportation Options for People) was formed to kill the freeway.

At the same time as this uprising was causing a political stir in Portland, the Environmental Protection Agency was pressuring the city regarding the high level of air pollutants and a constant day-to-day stream of violations of federal standards.

Meanwhile, development pressures were subdividing suburban and even rural land, as residential communities, commercial areas, and even in one glaring example, the campus of a community college moved further away from the central city into raw farmland.

The community took a good look at itself at about the time of Neil Goldschmidt's election as mayor, and didn't like what it saw. It wanted something better for its people. It began to express that wish through countless hearings, and finally, through the elective process.

As a result, a new city administration, the county, the governor of the state, and the legislature, in the period between 1972 and 1974, felt compelled to institute some sweeping changes.

These changes envisioned a new and vibrant community that would never be the same again.

Some of those changes were:

In 1972 - the adoption of the new Downtown Plan, followed in 1973 by the passage of the state's comprehensive land use law, and the first steps taken to establish county-wide zoning. (Figure 1)

These efforts directly described the kind of community the people wanted to have. County-wide zoning actively began to preserve farmlands with restrictions against selling off parcels of large acreages. The downtown plan established a people orientation with its requirement of 50 percent retail use on all ground floor properties within a described area.

The comprehensive land use laws reflected the interest in a healthy urban environment with its emphasis on urban infill and requirements for the establishment of an urban growth boundary, beyond which there could be no subdividing.

The state land use laws as such, however, went far beyond the narrow definition of land use. The 19 planning goals for the state to which all communities must respond is a statement of what the citizens of the state want for themselves and all of its communities.

The city comprehensive plan emphasized densification as opposed to sprawl in neighborhoods as well as downtown. Its goals were to enhance the downtown as the retail, office, and cultural and entertainment center of the metro area. It called for a greater increase in the number of residential units downtown, required open spaces, and a return to the Willamette river as a central focus for the city.

Clearly, this meant amending the plan for more expressways and freeways. As a result, in 1975, the metropolitan area adapted an "Interim Transportation Plan." This plan relied on large park and ride lots adjacent to freeways and other major corridors. These corridors were then planned to have special lanes for mass transit. (Figure 2)

REDUCING CONFLICTS AND REDUCING RISK

The strategies that supported the community vision in Portland acted to reduce the broad political conflict over alternatives.

This is an important concept. In the absence of a clear set of community goals, the conflict over land use would rage on unabated. A key notion: land use conveys benefits, both to private and public entities. A land use plan can state some of the community's assumptions about itself and begin to channel the discussion. The ultimate political decision that had to be made was then served by a reduction in conflict over alternatives.

When the Portland area started land use planning efforts, several key assumptions led to strategies that had limited alternatives:

The notion that farmlands and timberlands need protection led to the objectives to limit growth in non-urban areas. This led to a strategy that actually prohibited urban development in a non-urban setting. With the adoption of the urban growth boundary around the metro region in the late 70's the conflict ceased. No development was allowed outside the growth boundary. (Figure 3)

The downtown plan in 1972-1974 insisted on a greater people emphasis. Thus, it was decided that between Third and 10th, Alder and Salmon streets, 50 percent of the ground floor development would be retail. The conflict over other uses for that 50 percent, such as parking, office space, and warehousing was, in effect, finished.

The concentration of retail development in the core, and the limits on growth up to the boundary, served to resolve the argument about what happened in between. In fact, it forced the conclusion. And development of residential, commercial, and industrial areas began to focus there.

It wasn't easy. Residents sometimes were restive at the obvious implications of "urban in-fill." The community was going to get more dense. There were still conflicts, such as "How dense is dense?" , but they were reduced, limited, and focused.

In the central city, this meant zoning amendments would allow mother-in-law apartments in old established single-family neighborhoods.

In the core, it meant increased land values and high rise development.

For transportation, it meant a new system to support densities.

TRANSIT - THE STRATEGY FOR A NEW TRANSPORTATION SYSTEM

The new transportation system finally grew out of the political catharsis of the mid 1970's that surrounded the community's struggle to establish a vision for the future. This system canceled the freeways, extended bus service, sited a Central Mall, established a parking lid and finally, instituted high capacity rail service.

1. The plan for freeways and expressways was abandoned. This was a noisy and politically contentious decision.

But by withdrawing two segments of the Interstate, significant monies were available for other transportation projects, including rail transit.

Eventually 141 projects were built instead of two freeways.

2. Bus service was greatly expanded. In 1974, the hours of service district-wide were increased 40 percent and the fleet was greatly expanded. A strong, viable alternative to the car was provided just as the air pollution index in the city started to become dangerous.
3. Transit Mall - Two city streets were dedicated to exclusive transit use along the north-south spine of the downtown area. It was in this area that the downtown plan called for the city's highest densities. Of Tri-Met's 71 lines, 45 run on the Mall. Even before MAX, Tri-Met began to deliver 43 percent of the downtown workers into the Mall. Private development along the \$17 million Mall, since its conception, is valued at \$1.3 billion. (Figure 4)
4. A downtown parking lid was established. The policy of requiring new buildings downtown to have a minimum of parking spaces was reversed. Now, they have a maximum. And that maximum is given at the consent of City Hall. The application of the lid had two results: use of mass transit dramatically increased, vehicular traffic into the downtown remained at about the 1975 level for 10 years, with only slight increase since then.

But the most import factor was that employment increased about one-third while traffic into downtown remained the same.

5. Rail service was established from Portland's downtown eastward to the suburban community of Gresham.

Ridership on the new system was immediately nearly one-third more than expected and has grown steadily at about 14 percent a year in the peak periods.

Two things have happened. 1) Interest in development along the rail line, or as Portlanders call it the MAX line (Metropolitan Area Express) has soared, and 2) Interest in more rail lines, including vintage trolley lines, has virtually consumed the attention of planners, politicians, and ordinary citizens.

Development along the MAX line since the decision to construct was made and has resulted in 5.9 million square feet of commercial and retail development valued at \$690 million. Another \$440 million is being planned.

This has led directly to an interest in rail service to six other suburban communities surrounding the city. This will cost at least \$4.0 billion and seems unattainable to many. However, this first leg of the expansion, a Westward extension, has already received funding from your committee. It will open in September 1997. (Figure 5)

Innovation and Partnership

Transit has to be a strategy, not a goal. It's not just the efficient running of the bus and rail operations we concern

ourselves with, but also clean air, disabled access, the strength of the central business district.

This has taken partnership with others, and the development of innovation in our own service to help meet community goals. We have brought on compressed and liquid natural gas buses with the help of the Northwest Natural Gas Co.; developed a proposal for low floor light rail wheels with the assistance of the disabled community.

We have kept a high base of off-peak service hours to help with shopping trips, as well as the work trips served in the peaks. We developed timed transfers to speed up suburban service during the peak. We successfully developed an honor fare system for use on the rail system, which greatly adds to its efficiency at little cost. At the same time we tried the honor fare system-wide, and found that it didn't work well. An example of the idea that if you don't fail once in a while, it means you didn't try.

A number of our goals would not have been attainable without the following federal innovations:

- 90 percent match for ADA compliance
- Flexibility for Surface Transportation funds. One-third of the Hillsboro segment of our new rail line will be built with STP funds.
- Flexibility of the previous Interstate Transfer program. Without that program's flexibility the current LRT line could not have been built. Our Section 3 usage there was limited to 29 percent.

What would help in the future would be these further actions:

1. Increase funding for the Surface Transportation Program in order to increase flexibility and the ultimate funding of transit capital.
2. Incentives in funding that reward land use actions. Transit projects are more effective and highway expenditures are needed less with land use actions that encourage density.
3. Evaluation of transit projects for federal funding should give greater consideration to community land use rules, particularly urban containment and density rules.
4. Funding incentives, such as increased match ratios, could encourage greater utilization of the congestion mitigation and air quality authority in the ISTEA.
5. Assistance with cash flow problems. The state's revolving loan fund can only be replenished by toll revenues. If authority existed to replenish these funds with any revenues, this program could be more useful.

Similarly, the contingent commitment authority in the ISTEA would be extremely helpful if it were possible to use it as a back up for contracted but not yet appropriated funds. The final slowdown that might be experienced by limited yearly appropriations could then be alleviated.

6. Communities contemplating entire rail systems should be encouraged to do so, particularly when offsets to highway construction are contemplated. The present one-corridor-at-a-time rule is an obstacle in timely system development.

STATEMENT OF EARL BLUMENAUER

Mr. WALSH. I would like to introduce Commissioner Earl Blumenauer from the city council in Portland.

Mr. BLUMENAUER. Thank you, Mr. Chairman. I will use the remainder of our time to just give you three brief messages. One is to express our appreciation from the Portland region for the flexibility we had 20 years ago that rescued us from a transportation plan that doomed us to an auto-dependent solution where 1 out of every 10 people in our community would either live next to a freeway or be displaced by one.

We traded those freeways in. We built the first leg of our light rail system. We renovated existing facilities. And, most importantly, we spent 57 percent of that money outside Portland, with our regional partners, trying to manage the system. For that flexibility and that resource, we thank you.

Second, I am here to report that we are using the flexibility and the resources under ISTEA as the cornerstone of our State transportation financing package. Using that flexibility to be the linchpin, we are putting all of those flexible resources into transit, backfilling with increased proposals for transportation funding which will enable us to put together a balanced system that brings together rural and urban, highway transit, bicycle, and pedestrian issues I think in the best tradition of what you were seeking with ISTEA. We are absolutely committed to following through on that principle, and it is making a great difference in our State already.

Finally, I am here to plead that if, in fact, you go forward with the stimulus package—which we all do, there are tremendous unmet needs in our community and around the country for transit—to plead that you force local governments and State governments to prove that they are integrating transportation, land use, housing, into an integrated package to coax the most out of those resources. Demand of us—whether it is through a bonus provision or a threshold requirement I am not here to speak—but demand that we prove that we are achieving the partnership that Mr. Walsh talked about, that we are making sure that we are spending those dollars in effect two, three, four times over—for cleaner air, for greater mobility, for sounder land use, for getting the most out of all our resources.

I think that is what leverage is about. The Federal Government is uniquely positioned to carry us in that next generation of activities.

What you have done is made the difference for our community, allowing us to trade in the freeway. ISTEA is making the difference in bringing us together. We hope that you will challenge us for the next step with a stimulus package. Reward us for doing the right thing.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you. We have your complete statement and it will be made part of the record.

[The statement follows:]

STATEMENT OF EARL BLUMENAUER

Mr. Chairman and members of the Committee, thank you for this opportunity to appear before you today. I am honored to be here today representing the Portland region. I want to start by congratulating you on the innovative surface transportation bill passed by Congress in December, 1991. The Intermodal Surface Transportation Efficiency Act (ISTEA) has had a tremendously positive impact on transportation policies and investment in the State of Oregon and in the Portland region.

Oregon's use of the ISTEA's flexible fund provisions began shortly after the bill was enacted. In the spring of 1992, the Portland region and the State of Oregon each committed \$22 million of Surface Transportation Program (STP) funds for the extension of the Westside Light Rail Project to Hillsboro. The commitment of STP funds to this one highly visible project was soon translated into a broader vision for financing the state's transportation system.

In September 1992, the state, in partnership with cities, counties, and other transportation stakeholders completed the Oregon Transportation Plan. This plan, which was developed over a year and a half, is Oregon's first long range, comprehensive, multi-modal transportation plan. The Plan describes a system of road, transit, rail, port and aviation improvements for the State of Oregon. The Oregon Transportation Plan and a biennial review of unmet road and bridge needs, have resulted in the development of a transportation financing package which is now before the Oregon Legislature. What is unique about the transportation finance package is the way in which the federal flexibility will be used.

The Constitution for the state of Oregon, like many other states, limits the use of revenue collected from the ownership,

use, or operation of motor vehicles to expenditures in roads and bridges. With a daunting \$19 billion unmet need for Oregon's roads and bridges over the next twenty years, battle lines are quickly drawn when talk turns to using revenues currently dedicated to roads, for alternative modes of transportation. The challenge for transportation stakeholders was to devise a financing package that invests in transit, demand, management and bicycle and pedestrian paths but not at the expense of roads. The ISTEA has provided a unique solution for Oregon. Stakeholders have agreed to dedicate federal Surface Transportation Program funds to alternative modes of transportation, in combination with a substantial increase in the gas tax. Part of the gas tax increase will "backfill" STP funds transferred to other modes, the remainder will be used to meet road and bridge needs.

Another central feature of the state transportation finance package is a vehicle emission fee. This fee, is passed, will be a key component of the state's ozone maintenance plan for the Portland region that is required by the Clean Air Act Amendments. The emission fee will be based on the emission rating of the vehicle and the vehicle miles travelled per year. The idea of the emission fee is to promote a market based solution to air pollution and to move away from regulatory actions. Revenue from the fee will be used to make transportation improvements that clean the air. A substantial portion of the fee revenue will go towards transit expansion.

Opportunities for innovation such as those opposed in Oregon exist in every state. Federal programs and funding can be used as leverage at the local level to complement and shape the programs that the states implement. The ISTEA and the Clean Air Act amendments are helping the Portland region achieve long standing goals for maintaining a liveable community.

Transportation systems are one of the most important elements in helping communities remain livable. Light rail is at the core of the Portland region's strategy for maintaining a livable community. In the next twenty years the Portland region's population is expected to increase by half a million people. That is slightly more than the total number of people who reside in the City of Portland today. The way in which we accommodate the increase in travel demand that will accompany this growth will determine the livability of our community.

We know that the transportation system alone will not make a livable community. Through Oregon's land use planning program, now over twenty years old, and Washington state's Growth Management Act, the region is developing an efficient urban form that reduces the need to travel, preserves important greenspaces, provides affordable housing and conserves energy.

In the late 1970's the region took its first major step toward this livable future when it used the federal freeway withdrawal program to invest funds in the construction of the first 15 miles of a light rail system known as MAX - the Metropolitan Area express. Nothing has contributed more to the renaissance of downtown Portland and the close-in east side area than the existence of MAX -- a comprehensive, transit-oriented transportation facility that supports our land use goals. In 1990, voters of the Portland Metropolitan Area affirmed its support for accommodating growth with high capacity transit when they passed by 74 percent a \$125 million general obligation bond measure to finance the local share of the Westside Light Rail Project.

With the help of Congress, we have authorization for the Westside Project and will begin construction soon. Currently, this Region is in the process of selecting corridors for a north/south light rail line that will run from Clark County, Washington to

Clackamas County Oregon -- the end of the Oregon Trail, whose sesquicentennial the nation celebrates this year.

The Portland region is committed to continuing, and exceeding, past efforts to develop a livable and efficient region:

- * We will continue and expand our regional partnership with our neighbors in Washington state for a bi-state partnership for both light rail between the two states and for the establishment of high rail speed rail from Seattle to Eugene.
- * We will seek local financial commitment to the north/south light rail line through enactment of legislation in Oregon and the creative use of Surface Transportation funds.
- * We will continue to be creative in our growth management and transportation programs by considering further use of parking management and through the investigation of congestion pricing.
- * We will continue to act now -- before the traffic congestion and air quality problems become a brake on our growth and our quality of life.

Federal innovation has made the difference for our region from the freeway funding transfer in the 1970's to ISTEA in the 1990's. We stand willing to go the extra mile with you to prove the power and wisdom of this federal partnership.

It is not just a question of more money. (But make no mistake, we do need more money in our community and around the country.) The question is how to wisely spend those additional dollars

according to plans integrating land use, housing and transportation. Our light rail system has proven to be a catalyst leading to cleaner air, energy conservation, more efficient infrastructure investments and more money from more partners. All this means more and better choices for how our community manages growth and change.

The parade of people coming to Portland looking at how we've put the pieces together suggest we are doing something right. We could not be a national model without innovative federal help. We respectfully suggest that by rewarding this type of investment strategy and innovation in Portland you will be sending the right signals to the nation and you will show the way for federal dollars to have more impact.

TRI-MET Strategic Plan

Pursuing a Shared Vision

**DISCUSSION
DRAFT TWO**

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A foldout of Tri-Met's draft
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Business Plan

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Dear Friend,

The Portland metropolitan area is facing a critically important decision: How can we accommodate 500,000 more people over the next 20 years without sacrificing our high quality of life?

A number of local jurisdictions and public agencies have been trying to address that question through their long-range plans and strategies. The attached document expresses Tri-Met's view, and suggests one way all of us in the region can join efforts to create the kind of future we want.

This document is the second draft of Tri-Met's strategic plan. You may be one of the 5000 individuals who received and reviewed the first draft. Most of the people who commented on the first draft encouraged us to pursue the vision laid out in the plan; they also recommended some changes and additions. This new version reflects the helpful feedback we received from people throughout the region as well as our own employees.

The main focus continues to be on maintaining mobility and livability as the region grows. Specifically, the new draft:

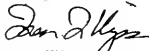
- Has a stronger regional orientation;
- Provides more detail on our suggested vision and how to achieve it;
- Recognizes more fully the essential role our employees will play in achieving the vision and Tri-Met's specific goals;
- Describes in more detail the land use implications of the vision, and Tri-Met's anticipated role in that arena;
- Includes a separate section on regional partnerships to underscore the importance of mutual support and cooperation; and
- Describes the funding that will be needed to support the level of transit service implied by the vision, as well as possible sources of funding.

We have tried to address most of the concerns raised by those who reviewed draft one. If you have comments on this draft, please contact Tri-Met Public Affairs, 4012 SE 17th Avenue, Portland, OR 97202, or call 238-4960. The plan will be presented to the Tri-Met Board of Directors for a public hearing Jan. 27, 1993 at 3:30 p.m. in Room C of the Portland Building, 1120 SW Fifth Avenue, Portland.

While this report is Tri-Met's strategic plan, it is clearly a regional document. We hope it will be refined, shared and "owned" by our partners throughout the metropolitan area.

Circulating this second draft gives us a chance to ask: Is this what you want from Tri-Met? And, if so, are you willing to help pay for it?

Thank you for taking the time to work with us on this document. Your thoughtful comments and suggestions will help us develop a final strategic plan that is supported by the region and reflects the wants and needs of the customers we serve.



Loren Wyss
President of the Board



Tom Walsh
General Manager

Quality of Life

A matter of choice.

Today the Portland metropolitan area — from Forest Grove to Troutdale, Vancouver to Estacada — offers a quality of life that is the envy of much of the nation. Vibrant communities, beautiful parks, stable neighborhoods, cultural opportunities, innovative development, model transportation and trend-setting environmental initiatives all contribute to a way of life that is cherished and unique.

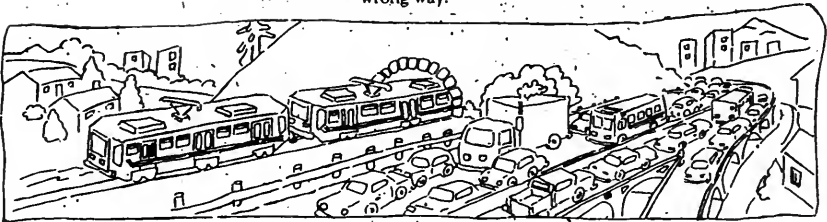
Yet, as the region's population increases, our quality of life is at risk. There is a real danger that rapid growth could diminish much of the progress and good deeds that have shaped this area into the special place it is today.

The people of our region are becoming increasingly concerned. They know that, over the next 20 years, even at historic rates of growth, the region's population is expected to increase by 500,000 — the equivalent of another city the size of Portland. That's faster than the entire state of Oregon grew in the 1980s.

The most common fear is that major and rapid growth could cause our region to lose its livability. Even citizens who welcome the economic benefits of growth worry that it will make our cities and towns less people-friendly.

That's what has happened to other-growing metropolitan areas: Livability declined as the population increased. Unbridled growth led to urban sprawl, traffic jams, dirty air and decaying downtowns.

That needn't be the case in our region. *We can build on our past successes in growth management.* Traffic congestion, air pollution, and other urban problems are not an inevitable part of growth — they are the result of growing the wrong way.



The fact is: We have a choice. We can accommodate growth in ways that will allow us to maintain our quality of life even as the population grows. But if we as a region don't make a conscious choice to follow that path, we will inevitably fall prey to the same forces that have ruined the livability of other major American cities.

The first step is to recognize the challenge before us. Then we as a region must rise to meet it.

Current Trends Are Troubling

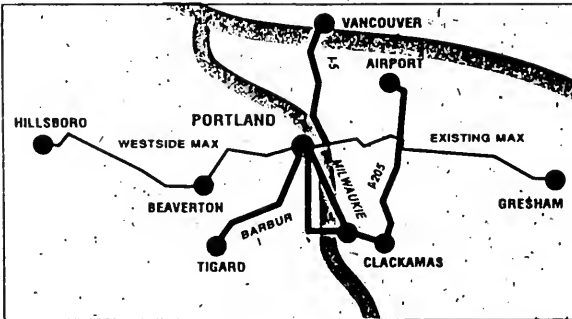
Despite the region's past achievements, some of the current trends are troubling.

Traffic congestion is increasing. A recent survey of residents in Washington and Clackamas counties showed traffic was the number one concern. Light rail on the west side will alleviate some of the traffic in Washington County, but it cannot do the job alone. Light rail will mainly just keep congestion from getting worse.

Most disturbing is the fact that even if the region is successful in carrying out its current land use and transportation plans, traffic congestion could still more than *double*.

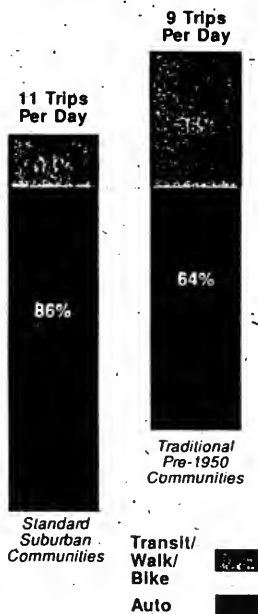
The fact that our highways are overloaded underscores a second major concern: lagging investment in public works

Regional Rail System



Opening the Westside Project in 1998 is the next link in the development of the proposed regional light rail system.

San Francisco Bay Area Traditional Neighborhoods Made 42% Fewer Automobile Trips



Source: Fehr & Peers Associates, 1992

Compact growth can cause a reduction in total trips and an increase in transit use!

— including transportation, wastewater, storm sewers and other utilities. In transportation alone, according to the Oregon Department of Transportation, the region as a whole is \$10 billion short of the funding needed to restore and maintain its deteriorating roads.

The question at this point is not *whether* we will fall short in necessary investments like new roads and transit, but by how much. The more carefully we plan for growth, the more efficiently we can provide these public services to our citizens.

Air quality is another source of concern. The number of vehicle miles traveled in our region has been growing by about 6 percent a year. To keep the air clean and safe and meet federal clean air guidelines, we will need to reduce that to only 2 to 4 percent a year — or face tough federal mandates and higher costs to industry to force compliance, which could lead to loss of jobs and slower economic growth.

While the pressure is mounting to reduce vehicular travel in the region, the current pattern of growth will result in more trips and more travel by automobile.

Growing Outward Means More Travel, Less Transit

Our region is currently growing outward rather than inward, through compact development. The pattern that is emerging is one of sprawl within the urban growth boundary (UGB). Growth is generally being contained within the UGB, but, according to a State of Oregon study, it is occurring on average at only 70 percent of planned densities, intensifying the pressure to expand the UGB. If current patterns continue, future growth will mainly occur on the fringes of the UGB — or, if the existing boundary is expanded, onto neighboring farm and forest lands.

Spreading out presents two problems: First, it causes the number of vehicular trips to increase at a rate even faster than the population. In Oregon in the 1980s, the number of vehicle miles traveled increased eight times faster than the population.

Second, this land use pattern cannot be served cost-effectively by transit. Buses and light rail are simply not an efficient choice for low-density, dispersed development.

A study of different neighborhoods in the San Francisco area revealed the dramatic difference in the number of automobile trips between people living in low-density standard suburban developments and those in compact

traditional neighborhoods. Residents in pre-1950 traditional neighborhoods made 42 percent fewer trips by car than their suburban counterparts. The San Francisco study found that a doubling of density resulted in a 30 percent drop in the number of vehicle miles traveled.

In our region, current projections show the number of total trips within the suburbs will increase by 72 percent over the next 20 years. Even with a major increase in transit service, the percentage of those trips served by transit will stay at today's level of 1 percent. Unless development in outlying areas becomes more clustered and transit-oriented, the percentage of suburban trips being taken on bus and light rail is not expected to change at all.

Contained growth — moving "in" rather than "out" — can allow a community to fully use transit as a way to maintain mobility while accommodating growth.

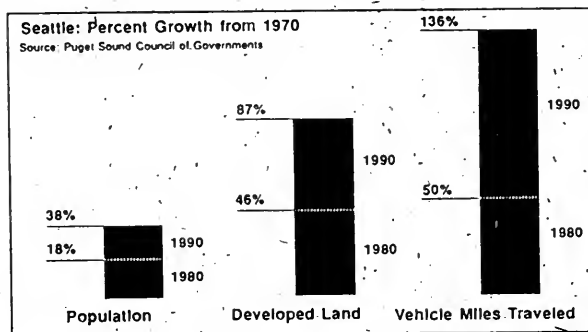
Two West Coast cities — Seattle and Vancouver, B.C. — provide striking examples of how mobility and livability are affected when a community grows outward instead of inward.

Seattle: 'Paradise Lost'

In the early 1980s, Seattle was considered one of the most livable cities in the country. Now, just a decade later, it is listed as the sixth most congested urban area in the United States. In recent times, the Puget Sound area has been referred to as "paradise lost."

What happened to cause such a dramatic decline in one decade? Primarily, rapid, uncontrolled growth. The

Rx for Gridlock



Portland is currently following the same trends that overtook Seattle: land consumed at a faster rate than population growth, increased dependence on the automobile, and an explosion in vehicle miles traveled.

Seattle region grew by 500,000 people in the 1980s. However, it had no overall vision or strong planning to guide its growth. As a result, the region slid into a pattern of sprawl. From 1970 to 1990, the population grew by 38 percent — while the amount of land developed increased by 87 percent.

Outward growth led to greater reliance on the automobile. Consequently, vehicle miles traveled went up 136 percent from 1970 to 1990 — almost four times as much as the population. At the same time, the level of funding for transportation dropped in terms of real dollars.

Seattle is now trying to play "catch-up," but the costs are enormous. Once a community has spread out, it is nearly impossible to reverse the trend. The Seattle region has identified the need for more than \$20 billion in capital investments and \$10 billion in operations and maintenance to improve transportation over the next 30 years. That total of \$30 billion would not reduce today's level of congestion, but would only keep it from getting significantly worse.

Seattle did not have the advantage the Portland region has of well-established land use planning. It grew "out" not "in" — and has paid dearly in terms of traffic jams, gridlock and lost livability.

Vancouver: A Better Way To Grow

The Vancouver, British Columbia, area has managed its growth differently. Through careful planning, clustered development and a pervasive commitment to transit, the metropolitan area has become a thriving, growing region that works — a bustling place as renowned for its charm, mobility and livability as its spectacular physical beauty.

The characteristics of the Vancouver area today are similar to what we might expect or hope for in the Portland area by the year 2020.

Vancouver currently has one-third more people than Portland; only one-third higher density; and three times the transit ridership.

In Vancouver, 10 percent of all trips and 17 percent of work trips are taken on transit. In Portland, while over 40 percent of downtown Portland work trips are on transit, only 3 percent of all trips and 7 percent of work trips are taken on transit.

Vancouver's progress can be traced to its citizens' longstanding support for transit and land use planning.

In the 1960s, when many cities were investing in the construction of freeways, the people of Vancouver opposed them. They preferred expanding their bus and trolley service and, eventually, adding the SeaBus cross-harbor ferry system, and the Sky Train advanced light rail system. Today Vancouver is the only city in North America with less than one mile of freeway within its city limits.

Vancouver is Canada's fastest growing city. That growth has brought problems, but Vancouver's population continues to make choices that support compact development and transit use. Under the area's "Livable Region Strategy," growth has been focused in large regional town centers that are linked to Vancouver by Sky Train and buses.

A Matter of Choice

The Portland metropolitan area is at a critical crossroads. We can grow like Seattle, or we can grow like Vancouver. We have a choice.

However, judging by the experience of other cities, we need to act now. We cannot rest on our past successes. If we do, our future will be decided for us. Inertia will lead us into the same fate of undisciplined growth, traffic jams, dirty air and lost livability that has befallen other growing American cities.

Sprawling, congestion-clogged cities like Los Angeles and Seattle are the way they are today not because their people want them that way, but because they missed the chance to make their choice. Seattle had its opportunity in the mid-1970s to plan for growth, and let it slip away.

Now it is our turn. We have already applied some techniques that work. Downtown Portland, like Vancouver, provides an example of growing the right way. The key elements in Portland's success were the downtown plan and an investment in transit. The downtown area has grown from 56,000 jobs in 1975 to 86,000 plus jobs today — an increase of more than 50 percent. At the same time, air quality has improved and traffic congestion has not increased.

The challenge now is to build on our successes. There is a way to grow and still keep our livability, and we as a region can achieve it — if we have the collective will to do so.

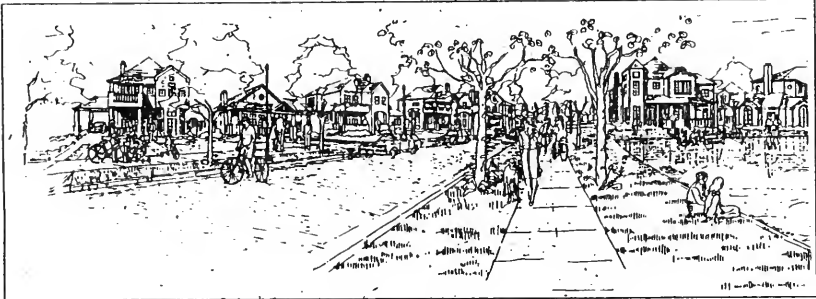
A Vision for Growth and Liability

To decide how to grow, the region must first determine what it wants to look like. What follows is one vision of how the Portland metropolitan area might look 20 years from now:

Our region is a bustling metropolitan area with some 2 million people, set off from surrounding farm and forest lands by a distinct, unchanging urban growth boundary. The air is clean and the landscape a striking balance of attractive, well-planned development and natural beauty.

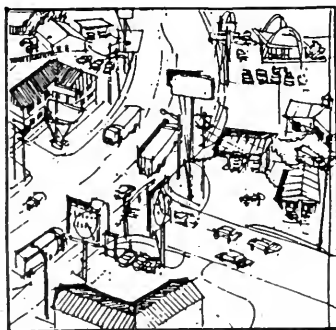
The region has retained its unique charm and livability, despite substantial growth in recent years. People enjoy working, playing and living here. Ample parks and open spaces complement vibrant urban centers. The comfortable pace of life contributes to people caring about and interacting with one another to a degree unheard of in other fast-growing metropolitan areas.

Cars, buses and light rail trains move throughout the region at a steady, continuous pace. The transportation network, including a five-line light rail system (with one more line under construction) and major transit corridors, accommodates travel between and within our cities, and provides the backbone connecting development throughout the region. In all parts of the area, development is located near and around transit stops.



Source: Calthorpe Associates

All of the region's cities have used their land carefully to avoid sprawl. The downtown areas of cities like Beaverton, Hillsboro and Gresham are thriving, people-oriented places, where jobs, shops, services, schools and parks are conveniently located together within walking or biking distance of transit stops and a variety of housing options that surround the downtown core.



Before

Portland's central city, redeveloped land and revitalized neighborhoods have strengthened and reinvigorated the city. Much of the new development along Portland's major streets and rail lines consists of 3- or 4-story multi-family units over street level shops. There is good pedestrian access to services and shopping, and good transit access to employment.

In other parts of the region, new communities have been created around major transit stops. At stations such as the Sunset Highway/217 interchange and Clackamas Town Center, the development is self-contained, offering local choices of services and schools within walking distance. The center of many of these "villages" consists of a transit station and central park, surrounded by a main street or square of shops, offices, restaurants, smaller businesses, child care facilities and recreational opportunities. In some locations, multi-family housing is located near the central park. Walking paths and bike paths connect the entire community.



After

Richard Potestio, AIA

The region's commitment to sensible growth and transit-oriented development has provided practical alternatives to the automobile and the attendant air pollution and traffic jams.

The percentage of total trips taken on transit (including buses, light rail, shuttles and van pools as well as taxis) is as high in our metropolitan area as anywhere else in the country.

Residents find the lifestyle here stimulating and

satisfying. They enjoy the amenities of a major city without the associated sprawl, congestion, crime, crowding and tensions found elsewhere. In our region, livability is still prized, and citizens and jurisdictions work together to protect and enhance it.

As for Tri-Met itself, we envision:

An agency that leads the nation in the quality, integrity and success of its transit system. Tri-Met operates an exceptional regional rail system, complemented by a network of major bus corridors that provide fast, frequent, convenient service to key destinations. The agency also provides personalized service with its neighborhood mini-buses that link residents to the bus corridors and regional rail.

Tri-Met works closely with local jurisdictions, decision-makers and developers to encourage land use and transportation patterns that enhance the region's mobility and livability. The agency's public approval rating is high. Tri-Met is well-funded and well-supported at both the state and local levels, and at the federal level, where Tri-Met is considered a model for the country.

Tri-Met's employees are among the best and brightest in the Northwest. They are actively involved in problem-solving within the agency, and find their ideas for improvement are frequently implemented. Two-way communication is integral to the agency's method of operation. Managers freely and openly share information with each other and with employees, and employees continually contribute ideas for improving customer service.

Each employee understands Tri-Met's mission and goals, the obstacles that must be overcome to achieve them, and what he or she can do to contribute to Tri-Met's success.

Outstanding customer service is a shared passion, and employees routinely ask themselves, "What will this do to help us attract or keep more customers?"

The philosophy at Tri-Met is: "Customers, one at a time." While the agency serves the entire region, it treats its customers as individuals, and strives to satisfy them just that way: one at a time.

Growth and a Sense of Community



Richard Potestio, AIA

The vision suggests ways in which we as a region can enjoy the economic benefits of growth while still preserving our small-town charm and livability. Through well-planned communities, our region can accommodate more residents while still offering a lifestyle that is pleasant and comfortable. Whether in the suburbs, downtown Portland or in a new mixed-use neighborhood, people can live in places where they know their neighbors and local merchants, and can walk to schools, parks, the corner grocery, neighborhood restaurants, the post office, transit stations, shops and other services.

This clustering of development offers other benefits as well: The opportunity for all of us to breathe clean air; get where we want to go quickly and easily; live in the type of housing we want and can afford; minimize our tax dollars for public services; enjoy safer streets and neighborhoods; and take greater advantage of green and open spaces in our communities. Such a pattern would not only enhance our everyday life, it would put this region on the map as one of the only metropolitan areas in the country that has been able to grow while actually *improving* its livability.

While achieving the vision would be a significant accomplishment, it would not require a major departure from some of the things we are doing today. Many of the components for the vision already exist throughout the region. For example, state law already requires that half of all new housing in the metropolitan area be multi-family housing. For the last 10 years, the real estate market has been meeting that goal. However, many of the multiple family housing developments have been located on the fringes of the urban growth boundary, and are difficult to

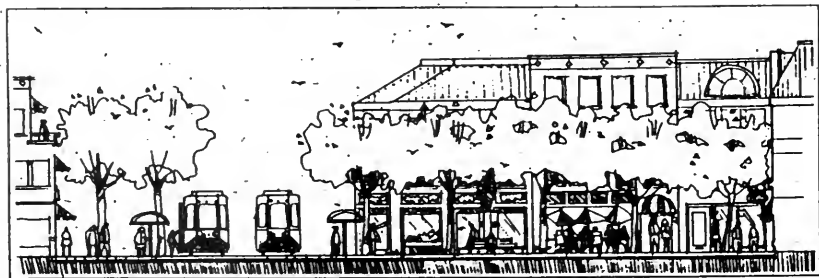
serve by transit. The vision would have us meet those same customer needs, improve on the response by mixing in other uses (such as retail, commercial, and recreational), and locate the new development in a transit corridor. The resulting mixed-use communities will be attractive places to live, work, shop, play, fall in love and raise children. Otherwise, the market will not support them because people won't want to live there.

Whose Vision Is It?

While the vision as stated here has been proposed by Tri-Met, many of the same principles and values have been advanced by others throughout the region. A number of local jurisdictions and state and regional agencies have been developing long-range plans.

The common thread in each of them is a recognized need to change current patterns of growth which, if unchecked, will lead to a serious deterioration in the region's livability.

- The City of Beaverton in its Downtown Development Plan calls for promoting downtown Beaverton "as a public transit and pedestrian-oriented district"; for concentrating new commercial development in a compact area to facilitate pedestrian access; and for increasing the supply of close-in multi-family housing, linked to the downtown core by transit.
- In its vision for the future, the City of Gresham calls for the creation of a downtown mixed-use center organized around light rail that includes a high-density retail core with multi-story office buildings, surrounded



Beaverton Civic Center: Transit Plaza Concept

(Source: Beaverton Downtown Plan)

Metro 2040: Alternative Growth Concepts

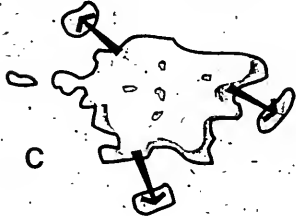
Continuing with Current Policies



Growing Inside the Urban Growth Boundary



Communities Growing at the Edge



Metro's 2040 process is the forum for developing a consensus on a vision for how the region wants to grow.

by residential and commercial buildings. Gresham's plan also calls for neighborhood community centers and "live-work" communities linked to downtown Gresham via transit, mixed-use development along the light rail corridor, and expanded public transit including a downtown light rail loop, bus service, shuttles and park-and-rides.

- 1000 Friends of Oregon, in its LUTRAQ (Making the Land Use Transportation Air Quality Connection) study, envisions a new land use development pattern that encourages a reduction in the number of auto trips and vehicle miles traveled "by creating opportunities to walk, bike and use transit." LUTRAQ also strongly advocates transit-oriented development and "the maximum use of existing urbanized areas accessible to transit through sensitive infill and redevelopment."

Clearly, there is no shortage of support for carefully-managed growth. But with so many organizations tackling the issue from different perspectives, the question arises: How can we as a region coordinate our efforts and work together to achieve one overall vision for this metropolitan area? The answer lies in one word: *Partnerships*.

Regional Partnerships: Working Together to Shape Our Future

Tri-Met is eager to work with its regional partners to achieve a vision we all agree on. Leaders, organizations and citizens in the metropolitan area will need to work together to pursue the desired changes.

Three areas requiring cooperation are of particular concern to Tri-Met:

1. Defining the vision,
2. Identifying funding for transit expansion, and
3. Achieving the desired land use patterns.

Defining the Vision

While there is some healthy overlap among many of the plans being put forth in the state and region, the metropolitan area as a whole has not yet reached a consensus on its vision for the future. The proper forum for developing that consensus is Metro's Region 2040, an effort now underway to plan for the region's future through the year 2040. The 2040 activities provide a vehicle for the community to discuss alternative ways to grow and address the trade-offs in choosing one approach over another.

Metro has circulated a publication that presents three development patterns to be evaluated in 1993 through the Region 2040 process. One of the concepts offered — Concept B — includes many of the same principles advocated by Tri-Met. Concept B would accommodate growth within today's urban growth boundary by using land more effectively, increasing redevelopment, mainly along major transportation corridors, and encouraging clustered communities with mixed uses and pedestrian amenities.

But before these or any other ideas can be pursued, agencies and jurisdictions in the region must be committed to a common vision.

For its part, Tri-Met will modify its strategic plan to reflect the results of 2040 and expects the rest of the region to do the same with their plans. Tri-Met will need a clear understanding of what the region wants and expects from its transit agency. Then Tri-Met will need the help of its regional partners in meeting those expectations.

The support and involvement of others will be especially important in two key areas: identifying funding for transit and achieving desired land use patterns.

Identifying Funding for Transit

To achieve the level of transit expansion suggested in all of the region's currently adopted plans, or any of the Metro 2040 concepts, Tri-Met will need additional funding.

To move ahead with its own strategic plan, Tri-Met will need assurances from its regional partners that they agree with the proposed level of transit expansion and will help Tri-Met secure the funding to achieve it.

The agency will need \$45 million more a year in operating revenue starting in fiscal year 1995 and an additional \$30 million a year starting in FY 1998 in order to achieve the strategic plan and increase mobility as the population grows. Those amounts represent a major infusion of additional support — equal to about 70 percent of Tri-Met's operating budget today.

It is unlikely that all of those funds will come from a single source. Rather, it is expected that they will come from a number of sources over time, and will likely involve

placing ballot measures before the voters to secure transit financing measures. Seeking additional funding in increments will help Tri-Met stay attuned to voters' concerns and desires.

Some efforts to increase transit funding are already underway. A number of agencies are working on an overall transportation finance package to help fund both highway and transit needs. The Oregon Transportation Commission, the Governor's Task Force on Vehicle Emissions and Metro's Joint Policy Advisory Committee on Transportation (JPACT) are developing a cooperative state and regional strategy for transportation financing. Transportation '93 — a statewide group of government, business and community interests — is reviewing all of the funding proposals and will act as the final clearinghouse to recommend to the 1993 Oregon Legislature a broad transportation strategy that includes a transit financing proposal.

The current transportation strategy under consideration is based on the Oregon Transportation Plan approved by the Oregon Transportation Commission. That plan, like the new federal Surface Transportation Act, contains first-time-ever provisions for flexibility and balance between highway and transit funding.

Half of the federal transportation money allocated to Oregon can now be used for either highway or transit projects. The investments are interrelated. According to the State, more than \$11 billion in road investments can be avoided by shifting land use patterns and expanding transit. For the Portland region, that's a savings of nearly \$10,000 for every household.

Looking beyond the 1993 legislative session, possible sources of funding being considered for transit include:

- A systems development charge imposed on the construction of new parking spaces to support transit; and
- A general obligation bond for light rail and bus capital expansion.

In general, Tri-Met would prefer transportation-related sources of funding for transit than general purpose taxes. The agency will be seeking voter, legislative and jurisdictional support for transit expansion.

Achieving Transit-Oriented Land Use Patterns

We will all need to work together to avoid the pattern of sprawl that has plagued most growing American cities.

Tri-Met has no formal authority in the land use arena, nor does it want any. Nevertheless, the agency's ability to effectively meet the region's transportation needs depends heavily on the pattern of land use here. Transit cannot serve a pattern of low-density development efficiently or economically.

As land use issues are debated, Tri-Met will emphasize that compactly developed areas are given the highest priority for transit service. The lower-density development in outlying areas may have to wait as operating efficiencies permit and may not be serviced by large buses and light rail at all.

Tri-Met will advocate three major public policy initiatives:

1. Containing growth within the existing UGB;
2. Substantially increasing development in transit corridors; and
3. Helping to assure development is designed to be served efficiently by transit.

The agency will generally support the concepts of building "in" rather than "out"; developing self-contained communities; and encouraging pedestrian-friendly urban and suburban centers. These patterns help the region get the best return on its public investment in not only expanded transit service, but all forms of public works, including sewers, schools, parks and roads.

Tri-Met will also work with local jurisdictions to help them comply with the new requirements under the transportation goal of the state's planning regulations. As an example, the metropolitan area must reduce vehicle miles traveled per capita by 20 percent in the next 30 years. Jurisdictions also must change their planning and zoning codes to allow for transit-oriented development and must find ways to achieve a 10 percent reduction in the number of parking spaces per capita over the next 30 years. Tri-Met's mission of improving mobility fits precisely with these state-mandated goals.



Tri-Met will support the concepts of building "in" rather than "out" and developing pedestrian-friendly centers. (Source: Calthorpe Associates)

The Challenge to Tri-Met

The vision not only implies major challenges for the region; it also has significant implications for Tri-Met.

First of all, it suggests that Tri-Met has an overriding purpose beyond the provision of bus and rail service.

Tri-Met's job, as stated in the vision, is to help this region stay livable as it grows by making sure citizens can get where they want to go quickly, easily and safely.

That means Tri-Met's role is not only to provide bus, special needs, carpool and light rail service, but also to help citizens access other alternatives to the single-occupant vehicle, such as biking and walking.

Second, the vision implies the need for a dramatic increase in Tri-Met's service to enhance mobility. If the agency's service continues to grow at the recent rate of only 1 to 1½ percent a year, a vision of growth without increased congestion cannot be achieved.

Tri-Met has developed a new strategic plan to rise to these two challenges — broadening the ways in which it contributes to enhanced mobility, and dramatically increasing its service and ridership to keep the region livable.

According to the new strategic plan, Tri-Met's mission is "to assure people increased mobility in our growing, compact urban region." The agency has set six strategic goals to steer its course. A detailed strategy for achieving the goals will come later in Tri-Met's Five Year Transit Development Plan and individual program strategies. The goals can be grouped into three categories: Getting more riders, getting more funding, and achieving mobility-oriented land use.

Getting More Riders

The surest way to reduce traffic congestion as the population grows is for more people to bike, walk, carpool, or use transit. Tri-Met's ridership goal calls for an aggressive but achievable leap in the number of customers served: from today's 200,000 riders per day to 690,000 riders by 2005 — a more than three-fold jump.

To achieve the ridership goal, Tri-Met must attract as well as retain more customers. The entire agency will be focused on making transit so convenient, so easy-to-use, so economical and so appealing that customers simply can't resist it.

Particular emphasis will be placed on further improving the reliability of Tri-Met's service, and on assuring that the transit system is safe and secure. Customers should be able to virtually set their watches by the arrival of a Tri-Met vehicle. In addition, they should feel assured when they board a Tri-Met bus or train, that they will travel in safety.

Customer service will be a driving ethic at Tri-Met. Employees will be highly trained and oriented to meeting the needs of customers. Hiring, communications, team building and employee development will all underscore the strongest possible customer orientation.

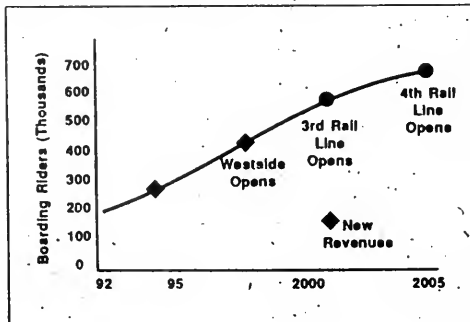
In addition, Tri-Met will initiate a full range of marketing activities to understand and address the needs of its customers. Market research will be used to help the agency find out who its future customers are and how it can serve them with transit.

New Types of Service Planned

Two new types of service are being planned to help Tri-Met reach out to more customers. They are "10-minute corridor service" and "neighborhood mini-bus service."

The 10-minute corridors will provide a network of service from transit center to transit center throughout the region, replicating the attractiveness of regional light rail. The corridors will become the backbone of Tri-Met's bus system. They will consist of major transit routes where service and capital improvements have been made (such as traffic signals that give preference to buses, special bus bypass lanes at intersections, curb extensions at bus stops, etc.) so that a bus can arrive at least every 10 minutes.

Strategic Plan Ridership Curve



Dramatically increased ridership is critical for Tri-Met to achieve its mission of enhanced regional mobility.

Capital improvements to the transit lanes will allow the buses to move faster than nearby automobiles.

The 10-minute corridor service will be easy to use. Customers will not have to use schedules because of the frequency of service.

Pilot projects will initially be tested on a few key routes. The first 10-minute corridor could begin operating in fiscal year 1995.

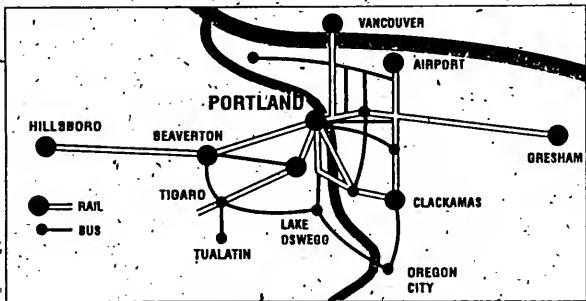
Tri-Met is also proposing to introduce "neighborhood mini-bus service." This service would be an outgrowth of the special needs transportation service Tri-Met provides to disabled people. It will operate in a given neighborhood like a local shuttle service or in low-density areas inappropriate for big buses. These smaller buses — possibly electric — will take passengers to local destinations, 10-minute corridor stops or light rail stations.

To help keep the region mobile, Tri-Met is planning a major service expansion over the next 13 years — from some 30,000 weekly hours of bus and rail service today, to almost 87,000 weekly hours of service by FY 2005:

This will include expansion of the regional rail system and increases in traditional bus and mini-bus service to feed into the rail lines and 10-minute corridors. Tri-Met

A new concept, "10-minute" corridors will provide the backbone of Tri-Met service, creating the bus and rail equivalent of an above ground subway.

10-Minute Corridors Concept



will also promote other modes of transportation, such as biking and walking to improve regional mobility.

The accelerated development of a six-line regional rail system will be a top priority. Tri-Met's most important short-term objective will be completing the Westside light rail project on time and within budget. The agency forecasts 20,000 riders on Westside MAX when the line opens in September of 1997. The line will extend to Hillsboro by 1998. A third rail corridor should be ready for final design in 1996 and a fourth in 2000. Bus and mini-bus services will grow at a complementary pace.

Where will Tri-Met place its additional bus service? The agency will continue to make specific service decisions in consultation with local jurisdictions, neighborhoods and community groups, as part of the preparation of Tri-Met's annual service plan. Top priority will be given to providing additional service to those parts of the region that have compact, transit-supportive land use patterns.

Getting the Funding

Tri-Met will not be able to do its part in improving regional mobility unless it can obtain additional funding to serve more riders.

The fiscal stability goal focuses Tri-Met on: 1) Obtaining additional funding; and 2) Getting the best return for each dollar spent.

To secure additional funding, Tri-Met will need support throughout the region for a collective vision of compact urban growth served increasingly by transit. It will need to achieve a regional consensus on a finance package, mobility goals, expansion of the transit system and adoption of land use plans that foster mobility.

To get the best return on each dollar spent, Tri-Met will carefully target its own spending toward achieving the vision, and will emphasize efficiency throughout its operations. The most effective way to steadily reduce the cost of each ride is to steadily increase the number of riders. Hence, steady ridership growth will be essential for increasing efficiency. Tri-Met will work with its customers and its regional partners to identify the most valuable service lines and reallocate resources as appropriate.

The fiscal stability goal also calls for Tri-Met to maintain three months of working capital for operations, in order to stay closely attuned to risk, keep capital replacement and operating needs in harmony and assure wise spending and the care and maintenance of funding sources. The agency is well aware of the need to spend wisely: If it

doesn't, it could lose its public support and its base of operations.

Getting the Land Use

Tri-Met's land use goal calls for working with public and private interests to help assure that 75 percent of all new housing and jobs inside the region's urban growth boundary are served by a designated major transit corridor within a 5-minute walk.

More detail on Tri-Met's involvement in the regional approach to land use is provided in the "Partnerships" section of this report.

Tri-Met's People Make the Difference

To provide the level of service called for in its strategic plan, Tri-Met will need a workforce of some 4500 employees by 2005, compared to its 1800 employees today. The agency will need to dramatically increase its recruitment, training and retention activities to attract and retain a top quality workforce.

Employees will need to be trained to not only operate the agency's equipment, but also to be Tri-Met's major source of contact with customers: A dedication to outstanding customer service will be the overriding ethic at Tri-Met. The philosophy of "customers, one at a time" will require that Tri-Met employees be attuned to customer needs and that they be empowered to help the agency find ways to serve customers even better.

To make full use of the skills and talents of its people, Tri-Met will enhance its mechanisms for obtaining and using information from employees to improve service and efficiency. Tri-Met has already begun stepping up its communications activities to listen to employees and help them understand the Strategic Plan and relate their work to it.

In addition, a human resources plan is being prepared to determine how Tri-Met can give its people more opportunities to contribute to achieving the plan. Tri-Met is investigating such possibilities as increased employee training and education, total quality improvement techniques, two-way communication activities and incentive and recognition programs. At the same time, individual departments within Tri-Met are looking at ways to involve employees specifically in generating ideas to improve service and attract more riders.

Tri-Met Strategic Plan: Business Plan

Year of Expenditure Dollars

	FY91 FORECAST	FY94 FORECAST	FY95 FORECAST	FY96 FORECAST	FY97 FORECAST	FY98 FORECAST	FY99 FORECAST	FY00 FORECAST	FY01 FORECAST	FY02 FORECAST	FY03 FORECAST	FY04 FORECAST	FY05 FORECAST
1. Weekday Ridership	216,000	233,300	256,600	282,300	310,500	347,800	382,500	420,800	462,900	518,400	570,100	627,300	690,000
2. Weekly Bus and Rail Hours	32,163	33,095	36,960	41,286	46,127	52,302	56,126	60,233	64,644	70,382	75,472	80,940	86,814
3. Annual Revenues (000s)													
a. Passenger Revenues	30,464	34,546	39,900	46,085	53,238	62,597	72,298	83,505	96,449	113,424	131,004	151,310	174,763
b. Payroll Tax Revenues	84,214	90,430	96,863	103,157	109,861	117,002	124,608	132,708	141,316	150,528	160,316	171,512	172,713
c. Other Existing Revenues	35,413	57,579	45,684	57,413	33,305	36,666	57,172	44,721	56,643	76,646	62,503	69,276	99,105
d. New Revenues	150,091	182,555	227,447	254,805	247,915	301,332	345,164	358,398	392,712	452,182	473,218	520,351	583,276
4. Total Revenues (CR and OTO)	114,415	124,825	144,176	161,141	180,987	209,646	230,430	251,447	274,601	314,635	343,295	374,869	409,664
5. Operating Expenditures (CE)	32,100	67,541	53,370	109,779	62,450	70,545	101,253	90,237	101,198	138,115	125,913	139,855	184,837
6. Capital Expenditures (CE and OTO)	146,515	192,366	197,546	270,920	243,417	280,191	331,683	341,684	373,799	452,750	469,108	514,724	594,501
7. Total Expenditures (CE and OTO)	3,576	(9,811)	29,901	(16,115)	4,498	21,141	13,481	16,712	16,913	(568)	4,010	5,627	(11,225)
8. Operating Result	57,034	54,610	44,799	74,700	58,585	63,083	84,223	97,704	114,416	131,329	130,761	134,771	140,398
9. Estimated Beginning Working Capital	28,604	31,206	36,044	40,285	43,242	52,412	57,608	62,862	68,650	78,659	85,824	93,717	102,416
a. Operating Fund	28,430	23,404	8,755	34,415	13,343	10,871	26,616	34,843	45,766	52,670	44,938	41,054	37,982
b. Capital Reserve Fund	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
10. Months of Operating Expense	26.6%	27.7%	27.7%	28.6%	29.4%	29.9%	31.4%	33.2%	35.1%	36.0%	38.2%	40.4%	42.7%
11. Fare Recovery Ratio													

CR-Continuing Revenue
OTO-One Time Only
CE-Continuing Expenditures

Key Points:

- Ridership Growth**
 - The focus of much of Tri-Met's activities will be achieving the weekly ridership increase in line one—from about 100,000 daily boarding riders today to half in land use as envisioned in the Strategic Plan is necessary to achieve these ridership levels. This growth in fixed-route and mini-bus ridership is considered critical for Tri-Met to achieve its mission of improving mobility as the region grows.
- Service Expansion**
 - Line two, weekly bus and rail hours, shows the level of services needed to serve significantly more customers.
- New Revenues**
 - As indicated in line 3d, Tri-Met will need new revenues to pay for expanded service. The agency will need \$45 million in new revenues starting in FY '95, growing at 7 percent per year. An additional new revenue source of \$30 million is anticipated starting in FY '98, also increasing at 7 percent per year. The total revenues in line 4 will cover Tri-Met's operating and capital expenses except for the money needed to match federal funding for additional light rail lines.
- Fiscal Stability**
 - The agency's commitment to maintaining three months of operating working capital as part of its fiscal stability goal is reflected in line 10, which shows steady maintenance of three months of operating expense. Tri-Met will maintain this cushion to assure work and prudent spending.
- Operating Efficiencies**
 - The agency will be improving its operating efficiencies. This is shown in recovery ratios in line 11, which increases from 26.6 percent in FY 2005 to almost 43 percent in FY 2005. This means that by 2005, about 43 percent of Tri-Met's costs will be covered by passenger fares.

Tri-Met's mission: To assure people increased mobility in our growing, compact urban region.

Goal 1 Customer Service:

Steadily increase system reliability and decrease the number of customer complaints.

Overall Approach:

Tri-Met will be driven by an ethic of superlative customer service. A strong orientation to customers and to outstanding service will be fostered throughout the agency. The agency's principle will be satisfying customers, one at a time.

Tri-Met will also improve the transit system itself by making it more convenient, reliable, easy-to-understand and appealing to customers. Particular emphasis will be given to system safety and security.

Capital improvements will include creation of 10-minute corridors (where faster, more frequent service will be provided on primary routes), and improvements in and around transit stops, including park-and-ride lots.

Tri-Met will strive to increase customer satisfaction and reduce customer complaints regarding regular and special service. It will improve its ways of listening and responding to customers, and will enhance its system for organizing and responding to customer complaints. Customer, community and Tri-Met employee input will be used to improve service.

Tri-Met will also focus on meeting or exceeding the criteria set forth in Tri-Met's Service Standards for on-time performance in fixed-route bus service. The reliability of the system will be assured by maintaining adequate levels of service and vehicle maintenance.

The agency will expand its efforts to help more people learn how to use transit. Continuing emphasis will be placed on providing the kind of high quality service that keeps customers coming back.

Goal 2, Ridership:

Increase transit ridership to 690,000 riders per day by 2005.

Overall Approach:

The goal represents a dramatic increase from the 200,000 daily riders who now use transit. This increase will be accomplished in incremental stages. By the end of fiscal year 1997, Tri-Met plans to achieve an average of 310,000 riders per day.

Bus service will continue to be the mainstay of Tri-Met's transit service, and will be bolstered by two new concepts:

1) "Ten-minute corridors" will be created on two dozen major transit corridors, where Tri-Met will increase bus frequency and speed so that a bus comes by every 10 minutes (creating the bus equivalent of an above-ground subway system). Tri-Met will work with its regional partners to determine the location of the 10-minute corridors, and will begin implementing them by fiscal year 1995. Tri-Met will also work with local jurisdictions to achieve road treatments that give preference to transit.

2) Neighborhood mini-bus service will provide service to customers close to home, offering almost door-to-door pickup and delivery to link customers with light rail and the 10-minute corridors.

Tri-Met will increase the number of hours of bus and light rail service to 50,000 per week from the current level of 30,000 per week -- a 67 percent increase in weekly vehicle hours -- by the end of FY 97.

Tri-Met will use marketing, advertising, customer service, promotions and pricing strategies to boost transit ridership. It will also strive to increase transit ridership by elderly and disabled citizens. Overall, the agency will work to substantially increase system reliability, operating speeds, capacity, frequency, security and convenience. Attracting and retaining more customers will be the primary focus of every Tri-Met employee.

Goal 3 Human Resources:

Attract, train and retain 4,500 employees by 2005 who will provide superior customer service. Refine internal systems for using information from employees to improve service and efficiency.

Overall Approach:

Tri-Met will, first, assure that it has the number and quality of employees it needs, and, second, make sure it is managing them to achieve optimum results. The agency will expand its recruitment, training and retention activities to attract and retain the best employees.

A strong emphasis will be placed on orienting all employees to the strategic goals and, in particular, to customer service. "Customer" can mean an external Tri-Met customer, or someone within Tri-Met who serves external customers.

Management's role is to support employees and help them do their best. Employee training and education will be expanded as needed. Mutual respect, teamwork and open communication will be reinforced as key values throughout Tri-Met. Significant emphasis will be placed on achieving diversity at all levels of the agency.

Specific initiatives will include:

- Develop a human resources plan.
- Revise and improve the classification and compensation system as needed.
- Expand recognition programs.
- Investigate the potential for total quality management at Tri-Met.
- Focus employees on key issues related to customer service improvement. Develop a system or management approach that empowers employees to take the initiative to solve problems.
- Assure that all employees understand the Strategic Plan and their role in helping to achieve it. Help managers assume a stronger role in two-way communication with employees.

Goal 4**Fiscal Stability:**

Steadily decrease the cost of each originating ride provided, maintain the equivalent of three months' working capital, and increase the continuing revenue base by \$145 million per year by 2005.

Overall Approach:

To achieve this goal, Tri-Met will focus on:

- 1) Obtaining additional funding; and
- 2) Getting the best return for each dollar spent.

To obtain additional funding, Tri-Met will need support throughout the region for a shared vision of compact urban growth and a regional rail system. It will be critical to achieve regional consensus on mobility goals, finance packaging, expansion of the transit system and adoption of land use plans that foster mobility.

Tri-Met will seek legislative authority on one or more taxing measures and plans to secure a major new source of funding for operations and routine capital by July of 1994. Voter approval will be sought for a funding mechanism for construction of a third rail corridor in 1999 and for the local share of support for the 20-year rail development plan. It is unlikely that those funds will come from a single source. They are more likely to come from a number of sources over time.

Tri-Met will increase efficiency and get the best return for each dollar spent by increasing ridership and consistently applying established financial controls. Maintaining three months' capital will provide a control mechanism for keeping Tri-Met on track financially.

Goal 5**Service Expansion:**

By 2005, expand and diversify service to 1,650 buses and mini-buses and three operating rail corridors; with one rail corridor in construction and one in final design. Double the percentage of carpool, bike and walk trips.

Overall Approach:

Tri-Met will seek to accelerate development of a six-line regional-rail system.

Plans call for completing Westside light rail within budget and serving 20,000 daily boarding riders when the line opens in September 1997. The extension to Hillsboro is to be added to the project in 1994, with completion in 1998. The third rail corridor -- to Clackamas County and possibly north to Vancouver -- should be ready for construction in 1999, with completion in 2003. Tri-Met will also work with Clark County's transit agency, C-TRAN, to strengthen the integration of the two systems to better meet bi-state travel needs. The capital cost of system expansion will be \$3 to \$4 billion.

Tri-Met will expand its bus service to support the 10-minute corridors and existing and future rail lines. The agency will increase its fixed-route bus fleet by 208 coaches (118 to meet service standards; 90 for the 10-minute corridors), to a total of 734 fixed-route buses by the end of FY 97.

To house and service its bus and rail cars, Tri-Met will expand its existing operating and maintenance centers, or add a new one.

Tri-Met will also explore new service possibilities to better meet customer needs. It will work with its regional partners to obtain more funding and staffing for carpooling programs, and increase employer vanpooling. The agency will also work to achieve attractive, transit-supportive pedestrian and biking environments.

Goal 6**Land Use:**

Using public and private partnerships, help assure that 75 percent of all new housing and jobs inside the region's Urban Growth Boundary (UGB) are served by a designated transit corridor within a 5-minute walk.

Overall Approach:

Tri-Met is not a land use agency. Rather, it can act as an advocate and catalyst for shaping land use patterns in ways that improve mobility. The agency will work with others to achieve land use plans that can be cost-effectively served by transit. Tri-Met will advocate three major initiatives:

1. Containing growth within the existing urban growth boundary (UGB);
2. Substantially increasing development in transit corridors; and
3. Helping to assure that new development is designed to be served efficiently by transit.

Tri-Met will consider these three factors in deciding where to provide service. Transit service and land use are interrelated. Tri-Met cannot achieve its ridership goals without changes in land use. The agency's service standards and Five Year Plan will be changed to incorporate land use considerations into service expansion decisions.

On a regional level, Tri-Met will be initiating a cooperative process with local jurisdictions to select the "designated transit corridors" called for in the goal. Because the corridors will be limited in number, top priority will be placed on locating them in areas with land use patterns compatible with transit.

Tri-Met will encourage the inclusion of its land use initiatives in the region's land use and transportation plans (Metro's Region 2040 Plan and revised Regional Transportation Plan) and in local comprehensive plans. The agency will also strive to achieve recognition from the development community that transit-oriented development is both achievable and profitable.

PREPARED STATEMENT

Senator LAUTENBERG. I am sorry that Senator Hatfield did not have an opportunity to be with us. He has a full agenda. He wanted to make sure that he conveyed his interest in your being here and his pleasure at knowing that his State was so well represented. He also asked that I insert a statement in the record on his behalf.

We thank you both for joining us.
[The statement follows:]

STATEMENT OF SENATOR HATFIELD

Mr. Chairman, I want to thank you for holding this hearing today. As you said in your opening statement, "we can't travel by highways alone," and your commitment to addressing transit needs makes this Nation a better place to live.

I also salute President Clinton's emphasis for light rail funding as demonstrated by his \$752 million request in the stimulus package. I look forward to working with this administration and this subcommittee to address the estimated \$6.4 billion to \$15.7 billion needed per year for the Nation's transit capital needs.

Through the support of this subcommittee, Portland, Oregon's westside light rail project is ready for construction. Last fall, FTA signed the Westside Full Funding Grant Agreement and contracts for the construction of the tunnel and low floor cars are due this spring.

As you know, Mr. Chairman, Portland's growth management serves as a laboratory for city planners worldwide. Traffic congestion, air pollution, and other urban problems are not an inevitable part of growth—they are the result of growing the wrong way.

As Tom Walsh, Tri-Met's general manager, and Earl Blumenauer, Portland's transportation commissioner, will point out, the Westside will build on our past successes in growth management. These two gentlemen demonstrate the type of visionary leadership that has blessed Portland for many years.

Working together, we will build a system to serve the growing, compact urban region while maintaining the growth management practices that have made Portland a model.

STATEMENT OF PAT JUDGE

Senator LAUTENBERG. Mr. Judge, you are the last of this panel.

Mr. JUDGE. Thank you, Chairman Lautenberg. I truly appreciate the opportunity to be here today.

My name is Pat Judge. I am manager of transit development for the Regional Transit Authority in New Orleans.

On behalf of the smaller transit operators, I am speaking as president of the South West Transit Association [SWTA] and president of the Louisiana Public Transit Association.

Before I start on the substance of my remarks, I would like to commend and thank the chairman and this subcommittee for your efforts in restoring operating assistance in last year's appropriations bill. Many of SWTA's systems owe their survival to that action.

On behalf of small operators, I want to focus on the cuts in the transit formula programs, operating assistance, and the cost of Federal mandates, such as the ADA, as they relate to small operators.

Most small transit operators rely almost exclusively on Federal formula funding when it comes to support of their capital and operating costs. Both operating assistance and formula funding overall has been stagnant for most of the last decade. Since 1988, operat-

ing aid has been stuck at about \$800 million, and funding for all formula programs was at \$1.7 billion this year.

Suffice it to say that transit operators can barely afford to maintain current services, let alone buy new buses or service if they cannot count on operating assistance being predictable and growing. I hold the strong belief that the Federal Government should protect its massive investment in transit as it does its highways by providing some assistance for its upkeep.

This year was particularly tough because transit funding under the formula program declined by some 15 percent for all operators, and that, coming on top of census adjustments, spread a small amount even thinner.

We like the fact that the President proposes in his supplemental funding plan to devote the majority of the new funding to the formula program. Additionally, we join with the American Public Transit Association hoping that this action will be followed through to fiscal year 1994 by funding the transit program according to the ratio set within ISTEA.

By way of examples, I would like to stress to you the value of operating assistance to communities in our region. In Louisiana, operating assistance accounts for nearly 20 percent of the Shreveport system's service budget, and in Lafayette, that ratio is at 50 percent.

While the level is only 5 percent of the New Orleans RTA budget, it represents 5 percent of a barebones budget that has just suffered through a major service reduction, layoffs, and two fare increases in the past 3 years.

Other SWTA systems, such as the Central Arkansas Transit Authority of Little Rock, utilize Federal operating assistance for 25 percent of their support, and Lubbock, TX, depends on it at 35 percent.

Many of these and other systems across the Nation would not survive without the support from the Federal Government.

We are also trying to meet the costs of the Americans With Disabilities Act. The Department of Transportation has estimated that ADA costs run somewhere between \$800 million and \$1.3 billion annually. Little Rock's Central Arkansas Transit Authority expects its paratransit costs to grow from 5 percent of their current budget to 11 percent by the date of full ADA compliance.

Similarly, Shreveport's commitment will increase to 8.2 percent from the present 4 percent, while the New Orleans paratransit budget will go from 2.8 to 7 percent by 1996-97.

Assuming no growth in Federal, State, or local support, which, unfortunately, we must consider a likely scenario, all of this growth must come out of the regular fixed route service budget. All this and the Clean Air Act, drug testing, bus testing, and health care cost increases are already here or just around the corner.

Meanwhile, many of the smaller section 18 systems in rural areas are truly going through severe adjustments. Due to the impact of this year's reduction in the formula programs, Panhandle Community Services, a section 18 agency based in Amarillo, TX, will reduce their budget by 54 percent, a loss of 35 percent of their employees, and a service reduction to the community of almost 40 percent. The Arkansas Public Transit Program expects a 15-per-

cent cut in rural transit operating budgets, resulting in probable layoffs and/or reductions in people served.

While we are grateful to this subcommittee and the Congress for preserving the transit program these past 12 years, we are anxious that the spotlight now on domestic problems and programs will shine on and include financial support for transit in an equitable, comprehensive, and complete approach.

In any case, we would like to urge those of you on this committee to support all transit funding at the authorized levels. I know how difficult it is to fund fast-spending programs, such as the operating program, but I would ask that you make every effort to fund operating assistance at the authorized level. To be quite honest, while you and I may know the relationship between authorizations and outlays, that concept cannot be readily explained to the rider who must pay more or even who now must find another way to work.

South West Transit Association strongly supports the President's proposals for increased funding in the current year, although we would have preferred the levels in your bill, particularly the match requirements. We hope that transit funding can be increased in future years.

I would ask and hope that we have some predictability from year to year.

Mr. Chairman and members of the subcommittee, I want again to thank you for this opportunity. I will be happy to try to answer some questions.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much, Mr. Judge. We have your complete statement and it will be made part of the record.

[The statement follows:]

STATEMENT OF PATRICK JUDGE

THANK YOU CHAIRMAN LAUTENBERG AND MEMBERS OF THE SUBCOMMITTEE. I APPRECIATE THE OPPORTUNITY TO BE HERE TODAY.

MY NAME IS PAT JUDGE. I AM MANAGER OF TRANSIT DEVELOPMENT FOR THE REGIONAL TRANSIT AUTHORITY IN NEW ORLEANS. ON BEHALF OF SMALL TRANSIT OPERATORS I AM SPEAKING AS PRESIDENT OF THE SOUTHWEST TRANSIT ASSOCIATION AND AS PRESIDENT OF THE LOUISIANA PUBLIC TRANSIT ASSOCIATION. FOR THE RECORD, THE SOUTHWEST TRANSIT ASSOCIATION MEMBERSHIP CONSISTS OF TRANSIT AGENCIES FROM ARKANSAS, ARIZONA, KANSAS, LOUISIANA, NEW MEXICO, OKLAHOMA AND TEXAS.

BEFORE I START ON THE SUBSTANCE OF MY REMARKS, I WOULD LIKE TO COMMEND AND THANK THE CHAIRMAN AND THIS SUBCOMMITTEE FOR YOUR EFFORTS IN RESTORING OPERATING ASSISTANCE IN LAST YEAR'S APPROPRIATIONS BILL. MANY OF SWTA'S SYSTEMS OWE THEIR SURVIVAL TO THAT ACTION.

ON BEHALF OF SMALL OPERATORS I WANT TO FOCUS ON THE CUTS IN THE TRANSIT FORMULA PROGRAMS, OPERATING ASSISTANCE, AND THE COSTS OF FEDERAL MANDATES SUCH AS THE ADA AS THEY RELATE TO SMALL OPERATORS. I WOULD LIKE

TO EMPHASIZE THAT TRANSIT FORMULA PROGRAMS INCLUDE NOT JUST THE SECTION 9 PROGRAM, BUT ALSO THE SECTION 18 AND 16(B) PROGRAMS WHICH CONTINUE TO GROW AS VITAL COMPONENTS OF THIS NATION'S TRANSPORTATION INFRASTRUCTURE.

MOST SMALL TRANSIT OPERATORS RELY ALMOST EXCLUSIVELY ON FEDERAL FORMULA FUNDING WHEN IT COMES TO SUPPORT OF THEIR CAPITAL AND OPERATING COSTS. AND, AS YOU MAY KNOW, IN THE CASE OF SECTION 18 PROPERTIES, ALL OF THEIR FUNDING CAN BE USED TO HELP MEET OPERATING COSTS.

BOTH OPERATING ASSISTANCE AND FORMULA FUNDING OVERALL HAS BEEN STAGNANT FOR MOST OF THE LAST DECADE. TRANSIT FORMULA PROGRAMS WERE FUNDED AT TWO TO TWO AND A HALF BILLION ANNUALLY BETWEEN 1983 AND 1987. OPERATING ASSISTANCE DURING THAT PERIOD WAS \$860 TO \$875 MILLION ANNUALLY. BUT SINCE 1988 OPERATING AID HAS BEEN STUCK AT ABOUT \$800, MILLION AND FUNDING FOR ALL FORMULA PROGRAMS WAS AT \$1.7 BILLION THIS YEAR. (\$48.6 MILLION FOR 16(B) AND \$91.4 FOR 18). SUFFICE TO SAY THAT TRANSIT OPERATORS CAN BARELY AFFORD TO MAINTAIN CURRENT SERVICES, LET ALONE BUY NEW BUSES OR SERVICE IF THEY CANNOT COUNT ON OPERATING ASSISTANCE BEING PREDICTABLE AND GROWING. I HOLD THE STRONG BELIEF THAT

THE FEDERAL GOVERNMENT SHOULD PROTECT ITS MASSIVE INVESTMENT IN TRANSIT AS IT DOES ITS HIGHWAYS BY PROVIDING SOME ASSISTANCE FOR ITS UPKEEP.

THIS YEAR WAS PARTICULARLY TOUGH BECAUSE TRANSIT FUNDING UNDER THE FORMULA PROGRAM DECLINED BY SOME 15% FOR ALL OPERATORS, AND THAT COMING ON TOP OF CENSUS ADJUSTMENTS THAT SPREAD A SMALL AMOUNT EVEN THINNER. WE LIKE THE FACT THAT THE PRESIDENT PROPOSES IN HIS SUPPLEMENTAL FUNDING PLAN TO DEVOTE THE MAJORITY OF THE NEW FUNDING TO THE FORMULA PROGRAM. ADDITIONALLY, WE JOIN WITH APTA IN HOPING THAT THIS ACTION WILL BE FOLLOWED THROUGH TO FY 94 BY FUNDING THE TRANSIT PROGRAM ACCORDING TO RATIOS SET WITHIN ISTEA.

BY WAY OF EXAMPLES, I WOULD LIKE TO STRESS TO YOU THE VALUE OF OPERATING ASSISTANCE TO COMMUNITIES IN OUR REGION. IN LOUISIANA, OPERATING ASSISTANCE ACCOUNTS FOR NEARLY 21% OF THE SHREVEPORT SYSTEM'S SERVICE BUDGET, AND IN LAFAYETTE THAT RATIO IS AT 50%. WHILE THE LEVEL IS ONLY 5% OF THE NEW ORLEANS RTA BUDGET, IT REPRESENTS 5% OF A BARE BONES BUDGET THAT HAS JUST SUFFERED THROUGH A MAJOR SERVICE REDUCTION, LAYOFFS, AND TWO FARE INCREASES IN THE PAST THREE YEARS. OTHER SWTA SYSTEMS SUCH AS THE CENTRAL ARKANSAS TRANSIT AUTHORITY OF

LITTLE ROCK UTILIZES FEDERAL OPERATING ASSISTANCE FOR 25% OF ITS SUPPORT, AND LUBBOCK, TEXAS DEPENDS ON IT AT 35%. MANY OF THESE AND OTHER SYSTEMS ACROSS THE NATION WOULD NOT SURVIVE WITHOUT THAT SUPPORT FROM THE FEDERAL GOVERNMENT.

WE ARE ALSO TRYING TO MEET THE COSTS OF THE AMERICANS WITH DISABILITIES ACT (ADA), DRUG TESTING IN THE NEAR FUTURE, AND OTHER FEDERAL MANDATES (CLEAN AIR ACT, ETC). ADA COMPLIANCE IS PROBABLY ONE OF THE MORE SIGNIFICANT COSTS FOR A SMALL OPERATOR. THE DEPARTMENT OF TRANSPORTATION HAS ESTIMATED THAT ADA COSTS RUN SOMEWHERE BETWEEN \$800 MILLION AND \$1.3 BILLION ANNUALLY. PARATRANSIT REQUIREMENTS UNDER ADA ARE EXTREMELY LABOR INTENSIVE.

LITTLE ROCK'S CENTRAL ARKANSAS TRANSIT AUTHORITY EXPECTS ITS PARATRANSIT COSTS TO GROW FROM 5% OF THEIR CURRENT BUDGET TO 11% BY THE DATE OF FULL ADA COMPLIANCE. SIMILARLY, SHREVEPORT'S COMMITMENT WILL INCREASE TO 8.2% FROM THE PRESENT 4% WHILE THE NEW ORLEANS PARATRANSIT BUDGET WILL GO FROM 2.8% TO 7% BY 1996-97. ASSUMING NO GROWTH IN FEDERAL, STATE OR LOCAL SUPPORT, WHICH UNFORTUNATELY WE MUST CONSIDER A LIKELY SCENARIO, ALL OF THIS GROWTH MUST COME OUT OF THE REGULAR FIXED ROUTE SERVICE BUDGET. ALL THIS AND

THE CLEAN AIR ACT, DRUG TESTING, BUS TESTING AND HEALTH CARE COST INCREASES ALREADY HERE OR JUST AROUND THE CORNER.

MEANWHILE, MANY OF THE SMALLER SECTION 18 SYSTEMS IN RURAL AREAS ARE USING VOLUNTEER DRIVERS, WHO USE THEIR OWN CARS TO GET THE ELDERLY AND SICK TO THE HOSPITAL OR SHOPPING. WE ARE TALKING ABOUT PEOPLE WHO DRIVE FOR THE MILEAGE. THESE ARE TRULY LOW BUDGET OPERATIONS, OFTEN SERVING PEOPLE WHOSE ONLY LINK TO THE OUTSIDE WORLD IS PUBLIC TRANSPORTATION. THESE SYSTEMS ARE TRULY GOING THROUGH SEVERE ADJUSTMENTS.

DUE TO THE IMPACT OF THIS YEAR'S REDUCTION IN THE FORMULA PROGRAMS, PANHANDLE COMMUNITY SERVICES, A SECTION 18 AGENCY BASED IN AMARILLO, TEXAS WILL REDUCE THEIR BUDGET BY 54%, A LOSS OF 35% OF THEIR EMPLOYEES, AND A SERVICE REDUCTION TO THE COMMUNITY OF ALMOST 40%. THE ARKANSAS PUBLIC TRANSIT PROGRAM EXPECTS A 15% CUT IN RURAL TRANSIT OPERATING BUDGETS RESULTING IN PROBABLE LAYOFFS AND/OR REDUCTIONS IN PEOPLE SERVED. THEY FEEL THE INTERCITY BUS PROVISIONS SET BY ISTEIA IS ALSO PRODUCING ANOTHER DRAG ON THE SECTION 18 PROGRAM, WHICH IS PROBABLY BEING EXACERBATED BY THE FY 93 CUTS.

WHILE WE ARE GRATEFUL TO THIS SUBCOMMITTEE AND THE CONGRESS FOR PRESERVING THE TRANSIT PROGRAM THESE PAST 12 YEARS WE ARE ANXIOUS THAT THE SPOTLIGHT NOW ON DOMESTIC PROBLEMS AND PROGRAMS WILL SHINE ON AND INCLUDE FINANCIAL SUPPORT FOR TRANSIT IN AN EQUITABLE, COMPREHENSIVE AND COMPLETE APPROACH.

IN ANY CASE, WE WOULD LIKE TO URGE THOSE OF YOU ON THIS COMMITTEE TO SUPPORT ALL TRANSIT FUNDING AT THE AUTHORIZED LEVELS. I KNOW HOW DIFFICULT IT IS TO FUND FAST SPENDING PROGRAMS SUCH AS THE OPERATING PROGRAM, BUT I WOULD ASK THAT YOU MAKE EVERY EFFORT TO FUND OPERATING ASSISTANCE AT THE AUTHORIZED LEVEL. TO BE QUITE HONEST, WHILE YOU AND I MAY KNOW THE RELATIONSHIP BETWEEN AUTHORIZATIONS AND OUTLAYS, THAT CONCEPT CANNOT BE READILY EXPLAINED TO THE RIDER WHO MUST PAY MORE OR EVEN WHO NOW MUST FIND ANOTHER WAY TO WORK.

THE SOUTHWEST TRANSIT ASSOCIATION STRONGLY SUPPORTS THE PRESIDENT'S PROPOSALS FOR INCREASED FUNDING IN THE CURRENT YEAR -- WE WOULD HAVE PREFERRED THE FUNDING LEVELS OF THE LAUTENBERG BILL -- AND WE HOPE THAT TRANSIT FUNDING CAN BE INCREASED IN FUTURE YEARS. I WOULD ASK AND HOPE THAT WE HAVE SOME PREDICTABILITY FROM YEAR TO YEAR.

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE, I WANT TO AGAIN THANK YOU FOR THIS OPPORTUNITY. FOR YOUR REFERENCE, I HAVE ATTACHED A COPY OF THE SOUTHWEST TRANSIT ASSOCIATION'S 1993 LEGISLATIVE POSITIONS AND FACT SHEET. I WOULD BE HAPPY TO TRY AND ANSWER ANY QUESTIONS YOU MIGHT HAVE. THANK YOU.

1993 LEGISLATIVE POSITIONS

The South West Transit Association supports equity and balance in the funding of federal transit programs, with the primary aim of ensuring **full funding for all formula programs**. This balanced approach will help retain existing jobs and create new employment in the public transit industry to help contribute to national economic growth.

Economic Stimulus Package

The South West Transit Association supports the Clinton Administration's proposal to increase funding for public transit by \$750 million in Fiscal Year 1993. This short-term boost in funding for projects that can be initiated before September 30 will give transit systems of all sizes the opportunity to fulfill their immediate capital needs, further contributing to job creation and economic growth. Consideration should be given to waiving local match requirements, as many transit systems would otherwise be unable to match the new funds.

Full Funding at ISTEA Levels

The South West Transit Association supports fully funding the federal transit program in FY94 at the \$5.325 billion amount authorized in the Intermodal Surface Transportation Efficiency Act (ISTEA). This level of support would maintain the integrity of transit formula programs, including operating assistance, at the fully authorized level of \$2.865 billion. If funding does not reach the ISTEA authorization level, SWTA supports funding the formula program at \$1.36 for every \$1 spent on the major capital investment program (Section 3).

Primary emphasis should be given to providing **full funding at the authorized levels for transit formula programs aimed at the elderly and disabled and the rural areas of the country**, since these systems are most dependent on the funds for their continued existence. The FY94 ISTEA-authorized funding level is \$153.8 million for Section 18 rural programs, \$68.7 million for Section 16 (b) programs for the elderly and disabled, and \$7.7 million for the Rural Technical Assistance Program. These three programs combined comprise only 4.3% of the entire FY94 transit budget at its fully authorized level.

The South West Transit Association is a regional transit association formed in 1979 to represent transit operators and others interested in public transit issues in the states of Arizona, Arkansas, Kansas, Louisiana, New Mexico, Oklahoma, and Texas. Its goals are:

- To provide forums for **professional development**, including the exchange of experiences, and the discussion and study of problems common to the public transit industry, through convenient and inexpensive training seminars and conferences held throughout the SWTA region;
- To provide advice and counsel to the **executive and legislative branches** of the federal government on transit-related issues and legislative and regulatory matters of importance to SWTA members;
- To emphasize the **importance of public transportation** and the necessity of encouraging the improvement and use of public transit systems;
- To compile and collect **data and information** related to public transportation in the region; and
- To promote **research, investigation, and study** toward improving public transportation.

SWTA has regular voting members who are representatives of public transit systems in the region, including municipalities that operate some form of public transit; associate (vendor) members; and professional members, including universities, regional councils of governments, state departments of transportation, state transit associations, and transit systems and individuals from outside the SWTA region.

For more information, contact the SWTA office at the address or phone number listed below.

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REASONS FOR DECLINE IN RIDERSHIP

Senator LAUTENBERG. I think it was important for the record and for those who are here today to hear the appeals made on a practical or a functional basis that exist for small systems and more rural areas, as well as for the large urban areas. This bias that was developed in the past, and I think was unfair to transportation needs generally, but it also, in the process, was trying to pit the smaller areas against the larger areas. The smaller areas are more dependent, even, on Federal assistance. But the numbers in the large areas are so, so enormous.

I want to ask Mr. Gambaccini a couple of questions.

You talked about the decline in ridership and the reasons that you enumerated, such as declining population, et cetera. Is any part of that due, in your view, to lack of service, poor quality of service, that kind of thing? Are conditions discouraging ridership?

Mr. GAMBACCINI. There is no question of that, Senator.

When we introduced new cars or replaced the fleet on the Broad Street line of the subway system and the new cars on our West Philadelphia light rail, traffic surged.

On the existing lines that are in the worst shape, there is a higher level of decline. There is no question that the conditions are abominable. In fact, I have shown a slide presentation to a number of congressional groups here, particularly to the delegation from Pennsylvania, and challenged the group to show me conditions in any Third World country worse than the conditions, for example, on our Market-Frankfort line. It is deplorable. It is a national disgrace, and there is no question it contributes to the decline in ridership.

Fares are another thing. Regarding our fares, we did an analysis. Right now, Senator, the price of gasoline adjusted for inflation is \$1 less per gallon than it was 10 years ago, and it's 40 cents a gallon less than it was 40 years ago.

The price of a fare in Philadelphia, adjusted for inflation, is 65 percent greater than it was 40 years ago, and the level of service is substantially less. So we have really adversely impacted the very people most dependent and most in need of public service.

Senator LAUTENBERG. That has discouraged ridership. There is no doubt about it.

Mr. GAMBACCINI. Absolutely.

Senator LAUTENBERG. It also has enormous social consequences. The full impact of transportation in our society is too often looked at in terms of the specific numbers related to transportation.

When you hear the Portland story, it includes land use and it includes total planning, and it makes a difference in the world in which we live.

OPERATING EXPENSES COVERED BY FAREBOX

What percentage of the operating expenses now, Lou, are covered by the farebox?

Mr. GAMBACCINI. In our city, it ranges plus or minus 1 or 2 percent at around 55 percent, which puts us right at the top. New Jersey, New York, and Philadelphia are right at the top. The average

around the country is about 38 percent, ranging down to about 20 percent or below.

Senator LAUTENBERG. State and local assistance represents what share?

Mr. GAMBACCINI. It's about one-half of our operating budget. It's close to one-half of our operating budget.

Share of the total budget, do you mean?

Senator LAUTENBERG. Operating.

Mr. GAMBACCINI. It's on the order of 40 percent.

Senator LAUTENBERG. Small, relative to other systems around the country maybe?

Mr. GAMBACCINI. Our State is substantially greater than most other States. I think there is only one other State that is higher.

Senator LAUTENBERG. Is that a relatively new phenomenon or a relatively new program?

Mr. GAMBACCINI. It has been progressive through the last 10 years, largely displacing the decline in Federal support. However, as you know, the city of Philadelphia is in extreme fiscal distress.

Senator LAUTENBERG. Right.

Mr. GAMBACCINI. Therefore, the State has picked up the slack. Local governments do not have the latitude and are strapped. They are overwhelmed by the offload of other functions to local government support. So, in our case, unlike many other, in fact most other, States, the State has been the principal provider.

Senator LAUTENBERG. I see. I thought there was a question in Pennsylvania about State share of transit needs.

Mr. GAMBACCINI. Well, yes. We made a major push, and, in fact, this spilled over to the Federal scene, where there was an effort to hold back highway funds until and unless the State created this dedicated fund.

Senator LAUTENBERG. Right.

Mr. GAMBACCINI. The dedicated fund was enacted in mid-1991.

Senator LAUTENBERG. Has that been helpful?

Mr. GAMBACCINI. Very. It doubled our capital capacity. It was very, very helpful.

Senator LAUTENBERG. Can we take the difference between the farebox contribution of State and local and attribute the remainder to Federal assistance? We have 95 percent accounted for thusly, and that would leave 5 percent, roughly, from the Federal Government for operating assistance.

Mr. GAMBACCINI. It's 4 percent Federal for operating assistance. It was up, as I said, at 18 percent 10 years ago.

AREAS OF INCREASING EXPENSES

Senator LAUTENBERG. It is not as significant a share, in my view, as it ought to be. The question is how do we change it.

What areas of your budget are growing most rapidly?

Mr. GAMBACCINI. I'm sorry?

Senator LAUTENBERG. What areas of your budget are growing most rapidly—operating expenses, capital expenses, or expansion?

Mr. GAMBACCINI. At the moment, ADA is growing. It is the single, it is the only growth service. Everything else is declining in volume of service.

Senator LAUTENBERG. But is not that a relatively small portion of the growth of expense?

Mr. GAMBACCINI. Yes, it is.

Senator LAUTENBERG. But it is the largest single one. You are saying on a percentage basis here, not in absolute dollars?

Mr. GAMBACCINI. No. That's right.

My point, though, is we are in a state of retrenchment and have been for several years. We are operating with an operating budget the same as 4 years ago. When you can take into account inflation and other pressures for improvement in service, including a substantial increase in police, one of the areas—not currently, but in the last 4 years—one of the largest percentage increases has been police. We have gone from on the order of, we have doubled from about 150 to 325 the police officers. We reduced crime 50 percent in most of the serious crime categories in that same period.

Senator LAUTENBERG. What has been the cost to SEPTA of deferred maintenance?

Mr. GAMBACCINI. I'm sorry.

Senator LAUTENBERG. What has been the cost and the penalty on quality of service as a result of deferred maintenance?

Mr. GAMBACCINI. This is the single biggest tragedy. We have disruptions, frequent breakdowns of equipment, including support equipment, power catenaries. Catenaries are constantly being pulled out. That has been a contributing factor to the decline in ridership, the unreliability.

We do not believe there are any serious immediate safety concerns. But we have gotten close a number of times and had to do extraordinary things to keep the system safe and operating. But it is pervasive.

We are paying a dear price. We are paying an extraordinary amount for wasteful maintenance merely to keep things afloat, putting on patches, literally, steel patches, to keep conditions from falling apart. The prudent thing, obviously, is to fix it.

We have one line, Senator, if I might, our busiest line on the system—the Market-Frankfort elevated system—which we undertook to start rehabilitating, the elevated structure, several years ago. It would have been a 6-year \$400 million project. It is now a 21-year \$950 million project. Because of the lack of funding, we have had to stretch it out. And, rather than completing it on a systems approach, section by section, which we began and then ran out of money, we had to go through and put a complete new understructure to hold the thing from collapsing, go back and do the track work, go back and do the stations, disrupting the community.

It is maddening, the wasteful nature of that expenditure and the disruption of the community.

WHAT IS NEEDED TO HELP LARGER TRANSIT SYSTEMS

Senator LAUTENBERG. What do you think this committee might do, Lou, to help the larger transit systems in the country—and a short answer, if you would?

Mr. GAMBACCINI. Senator, this is probably not the appropriate place to say this or do this, but I would love to invite your commit-

tee to come up and see the conditions for yourself and then ask you to develop the political will to help us out on an urgent basis.

There are hundreds of thousands of daily riders on that line, 1 million a day, that are affected. The original concept of the UMTA program was capital grant for rail modernization. It has since been evolved into a variety of other things. A shrinking fund has been expanded to cover many, many more objectives, and that is the heart of the problem.

We have a unique set of problems. South West particularly is looking to develop new starts and the like. Both are needed.

I would submit that the single best thing you could do is to come and see for yourself and then do the appropriate thing in terms of followthrough down here.

Senator LAUTENBERG. Mr. Walsh, Tri-Met is somewhat unique in that transit is being used as a tool for some significant social change—cultural change, actually. That is a very positive direction.

It appears as though, through a combination of strict zoning and land use planning, you hope to manage future development so that certain corridors of your region can be served by your rail system and not just blight the land by pouring concrete, et cetera.

Is this a fair assessment of what you are attempting to do by developing and building this new rail system?

Mr. WALSH. Very much so, Senator. I think two keystones to that—statewide land use planning regulations were put in place in 1971 that require urban growth boundaries to be drawn around each urban area in the State and to be maintained. That has fostered compact, urban growth. With that comes moderate densities. With those moderate densities come all the efficiencies of a transit system.

Second, we have had just significant support not only from our citizens, generally, but from the business community to grow this transit system. It is a grand experiment and so far it is working. Our ridership is up 35 percent over 7 years ago.

Senator LAUTENBERG. It is a wonderful part of our country. I think the citizens in Oregon, and particularly the Portland region, want to maintain a certain quality of life that brought them there in the first place. We would like to see that happen across the country.

Do you believe that FTA's assessment of your system fairly appreciates what you are trying to do by using transit in this grand scheme?

Mr. WALSH. Moderately. The evaluation of new start projects places a real emphasis on curing massive problems, and our focus is to stay ahead of those problems. Our cost effectiveness index is clearly acceptable, but it is not, by those FTA standards, in the very best range. But we work well with them, as I indicated in my opening comments. Within 9 months after the new ISTEA, we had negotiated the first new full funding grant agreement under that. Bob McManus and Brian Clymer were of significant help. We have an extension to that. Language will come by way of amendment to that full funding grant agreement. The cost effectiveness index on that is not as favorable as the baseline. But I expect those negotiations to be successful.

Senator LAUTENBERG. It may be a little immodest of me, but ISTEA was a significant change in our thinking in our transportation culture in this country.

Mr. WALSH. It was an absolute sea-change.

Senator LAUTENBERG. Senator Moynihan and my former colleague, Congressman Bob Rowe, worked so hard. I joined in as did Senator D'Amato. We worked very hard. It is heartening to me to hear of the kinds of use that can be made under that structure, the kind of applications that can be developed that really make sense for our country.

I am delighted to have this witness panel here because you represent some different aspects of what it is that we need in our transportation matrix. It is very helpful.

MEDIUM AND SMALL CITY TRANSIT SERVICES

Mr. Judge, what do you think the most pressing issues are that face operators of medium and small city transit services?

Mr. JUDGE. From our viewpoint, it is just consistency in the effort and, hopefully, some growth on particularly the operating assistance, which I know is always a tough issue. But for the smaller systems, we could have all the capital money in the world, but if we do not have the money to operate it, that capital money will go wanting. That is unfortunate.

Senator LAUTENBERG. These are symbiotic forces. One really cannot operate without the other and maximize the value that we are getting.

I have always argued for increased transit operating assistance, and opponents have argued that the smaller sized systems should not provide service if they have to depend so heavily on Federal operating help. How do you answer the critics of that?

Mr. JUDGE. The critics could be right in some instances or some locations where the local government has not quite gotten around to supporting the function as well as they could. But in all due respect, many of those same systems have gone through economic hard times. They are very small. The transit systems are aimed just toward a certain population, whether it is fortunate or unfortunate, that oftentimes is not represented at the local level. Whatever incentives can be made to promote local sources to fund it, funding is one thing. But the realities of economics back home will dictate what is reality.

Senator LAUTENBERG. I think the critics are not intending to simply level a negative message, but, rather, to try and get some yardstick by which you measure local interest. The Federal Government just is not going to take over and do all these things. But that does not necessarily mean that the requirements, match requirements, et cetera, have to be precisely the same.

You are not going to get a passenger-per-mile equivalent typically in smaller systems. But you cannot isolate populations and you cannot say to everybody OK, come on, move into town and we are going to abandon the rest of the area.

Mr. JUDGE. If I could use one example very briefly, I will use New Orleans. We have a dedicated, we have a one penny sales tax. We have increased our fares, as I said, 2 times in the last 3 years. And the FTA, or UMTA at the time, proposed to eliminate operat-

ing assistance for cities 1 million and above. But when they cast a net that big, they got us. But within our region, we have 3 other providers. The New Orleans Economic Commission, the last figures I have seen show that 45 percent of that population is at the poverty level or below. We have a transit dependency of 20 percent.

There is no way to get more money out of them or out of the city budget, which has lost block grants in the form of urban renewal grants and that kind of thing.

Senator LAUTENBERG. Mr. Blumenauer, did you want to add anything?

Mr. BLUMENAUER. Mr. Chairman, just on your previous question, it seems to me one of the serious problems we have is that people are not comparing apples and oranges in the transportation system. We have done some calculations about the degree of subsidy for the automobile in our community which is in the neighborhood of some \$5,000 per vehicle. Forty percent in Pasadena—our colleagues have analyzed the impact on their police system and 40 percent of the law enforcement budget goes to the consequences of the automobile.

I would think that if we were able, with your help, to have a transportation system that looks at all of the pieces and looks at comparable degrees of subsidy, both for operations and for capital, we would find, in fact, that it is far more cost effective to take the direction in which you are leading us.

Senator LAUTENBERG. Thank you. I think we have to throw aviation in there and take a look at what it costs to operate the system. This is not to criticize the system. We have a darn good aviation system. I would like it supplemented by a high-speed rail, as I think most people know. We are going to continue to work on that.

Thank all very much for being with us.

PANEL III—COMPANIES ADDRESSING NEW TECHNOLOGICAL NEEDS

NONDEPARTMENTAL WITNESSES

GEORGETOWN UNIVERSITY

STATEMENT OF REV. WILLIAM L. GEORGE, S.J., ASSISTANT FOR FEDERAL RELATIONS

H POWER CORP.

STATEMENT OF DR. ART KAUFMAN, PRESIDENT

TRANSPORTATION MANUFACTURING CORP.

STATEMENT OF EUGENE TUNILA, EXECUTIVE VICE PRESIDENT

INTRODUCTION OF WITNESSES

Senator LAUTENBERG. Next we have Dr. Arthur Kaufman, Rev. William George, and Mr. Eugene Tunila.

Reverend George, it is nice to see you. We are not going to discuss Seton Hall, none of that today. We are not going to discuss the important issues. We are going to discuss other things.

Reverend GEORGE. I'm going to be there.

Senator LAUTENBERG. I flew up to New York, funny enough, with the Georgetown team a couple of weeks ago and sat next to a young man whose first name was Vladimir. He is from Yugoslavia, actually I think Croatia, as is one of the star players for the New Jersey Nets, Petrovic. It was quite interesting.

Reverend GEORGE. Vladimir has parents and grandparents on both sides, Serbian and Bosnian.

Senator LAUTENBERG. We had a long talk.

Reverend GEORGE. He is a wonderful kid.

Senator LAUTENBERG. Yes, a wonderful person. Wonderful.

OK. We are pressed for time, as always. We are down to the wire.

I would ask Father George to give his testimony first. Welcome. It is nice to see you again.

STATEMENT OF FATHER GEORGE

Reverend GEORGE. Thank you, Mr. Chairman, members of the committee, and staff. I am Father George, assistant to the president of Georgetown. It is nice to be here at the table with Mr. Tunila and Art Kaufman from TMC and H-Power, people we have worked with for quite a while. It is nice to be with competent professionals.

Behind us are Dean Price and Sam Romano. Sam is our expert on the bus program at Georgetown, directing it now. Dean is the

person who had the genius to recognize the value of phos-acid fuel cells for buses.

The program started way back in 1984, when the committee provided funds to do a study. We estimated after it was deemed feasible that it would cost about \$17 million over a 5- or 6-year period to get a fleet of 30 foot buses.

We have kept to that budget. It is going to end up being about \$17 million over the years, but we will end up with fewer buses. That is how we kept the price down of the research project and development.

It was a marriage between a university that, because it believes in a liberal education, figured out how to solve a problem of buses and cleanliness, with the industry that we worked with, and the Department of Transportation, actually in those days with the Urban Mass Transit Authority, and the Department of Energy, which in those days was way back to ERTA.

So with all those pieces together, it was quite a wonderful act to juggle. It was a lot of juggling but it really worked because the Department of Energy, being more interested in research, would never have gotten a bus in my opinion. But the Department of Transportation, wanting a real vehicle in production, and with the industry to keep it real and actual, we have ended up where we are going to have a white book approved—not approved, but a vehicle that fits the white book standards of the Federal Transit Administration—ready to drive this October.

We cannot drive it on the roads yet because of legal problems when that happens. But we would invite you to drive it if you would like to come October or November. It would be neat if you could invite some other people. Think big. Ask the President.

Senator LAUTENBERG. Friends or colleagues.

Reverend GEORGE. We are so confident that it is going to be there. It is not a theoretical bus. It will fit the Transit Administration's guidelines. We are grateful for that.

When we started this program, it was all American. Then Engelhard sold its patents to Fuji. Well, in the meantime, we figured out a way to get those patent licenses back. So we are sort of reversing that trend. It is a stimulating thing to do.

That is almost everything I want to say except that these buses are so clean. I was listening to Senator D'Amato. Hundreds of these buses pollute as much as one diesel bus. That is a tremendous step forward. It is real. The technology is better than we ever anticipated.

I would like to thank you for that.

One quick aside. The phos-acid fuel cell is really do-able for trains. When I went to Japan a while back, they were going to use these phos-acid mechanisms to run the alternative energies, like the air conditioning, the lights, the microwaves, or whatever on a train because they did not want to put up a whole new line of power lines for electricity. So it is a very viable technology.

I think once we get it on the road, the world will be believing it.

Thank you, Mr. Chairman.

PREPARED STATEMENT

Senator LAUTENBERG. We will all watch it with interest, Father George. We have your complete statement and it will be made part of the record.

[The statement follows:]

STATEMENT OF FATHER GEORGE

Dear Mr. Chairman and Subcommittee Members:

I am Father William L. George, SJ, Special Assistant to the President of Georgetown University, the Reverend Leo J. O'Donovan, SJ. Thank you for the opportunity to testify before your Subcommittee.

The fuel cell bus development program is well underway to producing working prototypes of a methanol fueled phosphoric acid fuel cell bus. These buses meet the Department of Transportation's (DoT) white book standards for buses and will be demonstrated in the fall of this year, 1993. See Exhibit 1.

This is a consortium effort of the Department of Transportation, the Department of Energy (DoE), Georgetown University (coordinating manager), H-Power Corporation in New Jersey and TMC, bus manufacturing firm in New Mexico.

Since 1984 the appropriation committees for DoT and Interior have jointly funded this prototype production. The invested federal funds by DoT is approximately \$7 million and DoE is approximately \$10 million.

The emissions from this bus are far less than the requirement of the Clean Air Act. The provision in the Clean Air Act for urban buses states that clean fuel bus emissions of PM not exceed 50 percent of emissions allowed for conventional heavy duty vehicles or engines beginning in May 1994 and thereafter (.05 grams per brake hph). See Exhibit 2.


As a comparative example: several hundred fuel cell buses will emit less pollutants than one current diesel powered bus.

The next essential step is to get this bus to market. The Transportation Appropriation Committees wisely provided \$5.1 million for the development of manufacturing process of this fuel cell bus with a promise of funds to follow in Conference Report 102-924. The need for commercialization funds to do production preplanning and engineering is critical. Other countries have produced below standard prototypes but are serious in their efforts to capture a market. The U.S. is a few years ahead, but any delay and we could be importing buses.

As a result, the Department of Transportation and Georgetown University in a coordinated effort are in a process of planning to arrange for production of an initial fleet of about 30, 40ft. buses with H-Power and TMC. The program will provide robotic production of fuel cell plates and assembly. TMC would gear a robotic production line to produce the first fleet. After this initial fleet they would go into production.

FY 1994 and 1995 pre-production funds are essential in the range of \$12-15 million per year. See Exhibit 3. Specific state and regional transportation authorities have stated they will arrange for purchase of the initial fleet in 1996, once close to commercial levels of production.

Sincerely,



Rev. William L. George, S.J.

<u>PERFORMANCE</u>		
SPEED	WHITE BOOK	PROJECTED
0-10 MPH	5.6 SEC	3.6 SEC
0-30 MPH	19 SEC	14.4 SEC
0-50 MPH	60 SEC	45.5 SEC
TOP SPEED	55 MPH	58 MPH
2.5% GRADE	44 MPH	44 MPH
12% GRADE	7 MPH	15 MPH
RANGE	150 MILES	150+ MILES

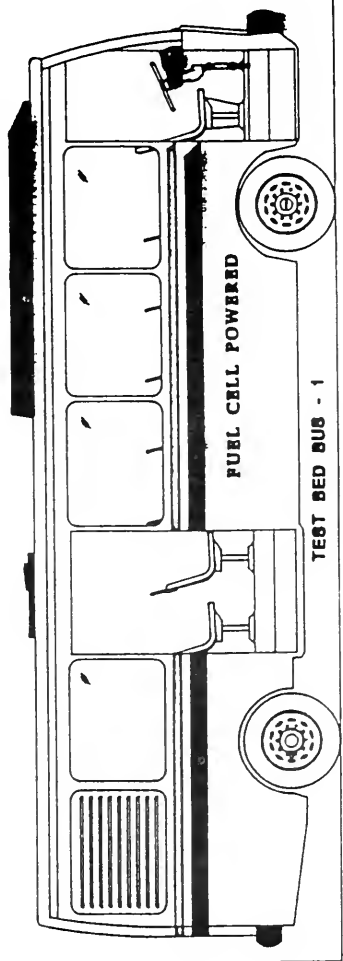


EXHIBIT 1

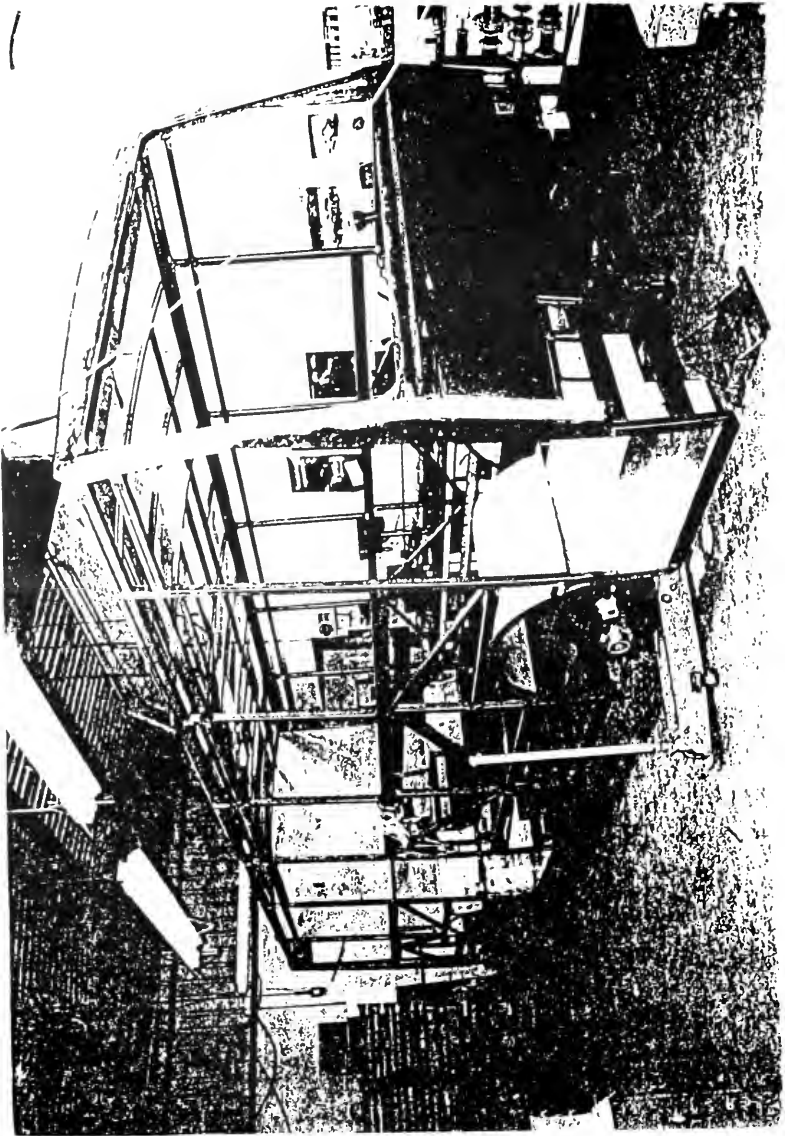


EXHIBIT 2

Clean-Air Act

Title II

PL-101-549

Urban Buses *

• **Emissions standards for clean-fuel buses.** Requires the administrator to promulgate by Jan. 1, 1992, emissions standards for clean-fuel buses for MY 1994 and thereafter. The standards will be based on the best technology that could reasonably be anticipated to be available at the time the standards are implemented, taking into account cost, safety, energy, lead time and other relevant factors. Except for the specific requirements referred to in the next paragraph, the standards must require compliance with emissions standards for conventional heavy-duty vehicles of the same type and model year.

• **Specific requirements for buses.** Requires that clean-fuel bus emissions of PM not exceed 50 percent of the emissions allowed for conventional heavy-duty vehicles or engines in MY 1994 and thereafter. The administrator could exceed the 50 percent level if it was technologically achievable but could not increase allowable emissions above 70 percent.

• **Additional fuel requirement.** Requires the EPA administrator annually to test urban buses subject to the PM standard to determine if they comply over their full useful life. If not, the administrator must require that all buses purchased or put into service in metropolitan statistical areas (MSAs) or consolidated metropolitan statistical areas (CMSAs) with a 1980 population of 750,000 be operated on clean fuels (methanol, ethanol, propane, natural gas or any comparably low-polluting fuel). The administrator must phase in the requirement over five years, beginning three years after the administrator's determination above.

• **Existing urban buses.** Require that the foregoing clean-fuel regulations also apply to existing buses that have their engines rebuilt or replaced after Jan. 1, 1995, and that operate in the areas described.

• **PM.** Requires that emissions of PM from buses before 1994 not exceed 0.25 gram per brake horsepower hour in MY 1991 and MY 1992 and 0.10 gram per brake horsepower hour in MY 1993 and hereafter.

EXHIBIT 3

PROGRAM PLAN FOR A U.S. PRODUCED FUEL CELL SYSTEM

EXECUTIVE SUMMARY

This document contains the Program Plan for the development of a U.S. produced fuel cell system for transit buses. The program is designed to provide the front end engineering and development activities necessary to make U.S. manufacturers and suppliers ready for production of fuel cell powered buses in the 1996 period. The Program Plan is responsive to a Congressionally mandated program as submitted by the Senate Appropriations Committee for the Department of Transportation and confirmed in the joint House Senate Conference Report.

BACKGROUND

The Departments of Transportation and Energy have been conducting a multi-phased program to develop a phosphoric acid fuel cell (PAFC) powered bus for the transit industry. The program which is jointly funded through the Federal Transit Administration (FTA) of The Department of Transportation and the Electric and Hybrid Propulsion Division of the Department of Energy's Office of Transportation Technology is presently in the Phase II stage where three 30 ft fuel cell powered buses are being built. The program, which has been underway since 1987 will have the first bus operating in 1993. Phase I of this program produced and tested a fuel cell power system which demonstrated the feasibility of the concept. The phosphoric acid fuel cell (PAFC) being used in this program was developed by Englehard Industries in earlier programs using NASA and DOE fund as well as their own. Prior to the official start of Phase I, Englehard sold the development and manufacturing rights to Fuji Electric of Japan.

This Program Plan is focused on reinstating the U.S. lead in fuel cell development and preparing for the serial production of units by U.S. manufacturers.

PROGRAM APPROACH

Georgetown University initiated the fuel cell bus program and under the auspices of the Department of Transportation's Urban Mass Transportation Administration (now FTA) managed the initial feasibility study. At present Georgetown provides the technical and program management for the ongoing three bus development program. It is proposed to continue Georgetown in this role to direct the introduction of a U.S. supplier for Fuel Cell Buses production.

To assist Georgetown TMC, the bus manufacturer presently conducting the design study for a fuel cell powered 40 ft bus under the ongoing contract, will share the management role for this program. TMC is the largest transit bus manufacturer in the U.S. Their expertise in bus manufacturing and their experience in the fuel cell bus program will provide a significant cost and time advantage in configuring a U.S. produced FC bus system.

The first step, as shown in Figure 1 will be for Georgetown to prepare a program definition and requirements document and request proposals for a study. One or more U.S. fuel cell developers will be given a 6 month Phase O study contract to prepare plans to develop and produce a domestic PAFC system and submit a proposal for the plan. The program will be divided into three phases to carry out the plan proposed by the selected contractor. The

phased program will develop a domestic fuel cell for a 40 ft transit bus, build fuel cells and buses for testing, build a limited number of 40ft. pre-prototype fuel cell buses for evaluation and prepare plans and organize the infrastructure needed for the production phase. Upon completion of this program, pilot production can begin and buses procured under the FTA capital grant funding program.

The phases and duration are as follows:

Phase I, Preliminary Design of Prototype Production Units

This will be a 12 month program and will also include the configuration of the 40 ft. bus for the PAFC power system.

Phase II, Fabrication of Two FC Test Units and One 40 Ft. Bus System

This is a 12 month program which will confirm the FC design and proceed to integrate it with the bus.

Phase III, Test Bus Evaluation and Fabrication of Three Pre-Prototype Bus Systems

This phase is 18 months long and will evaluate the test buses and produce pre-production systems for further evaluation. It will confirm the design is ready for pilot production.

Figure 2 is the funding plan which indicates the distribution of the funds and the phasing of funding requests for the additional funds over and above the \$5.1 M authorized.

US PRODUCED FUEL CELL BUS SYSTEM

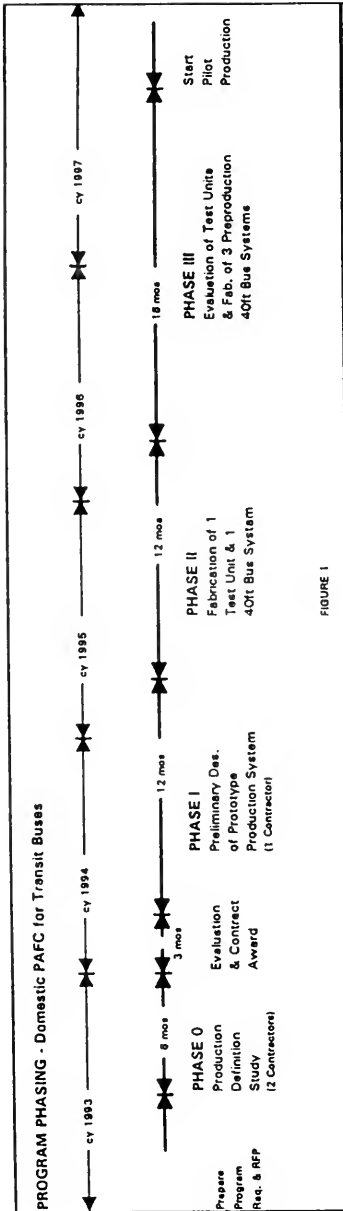


FIGURE 1

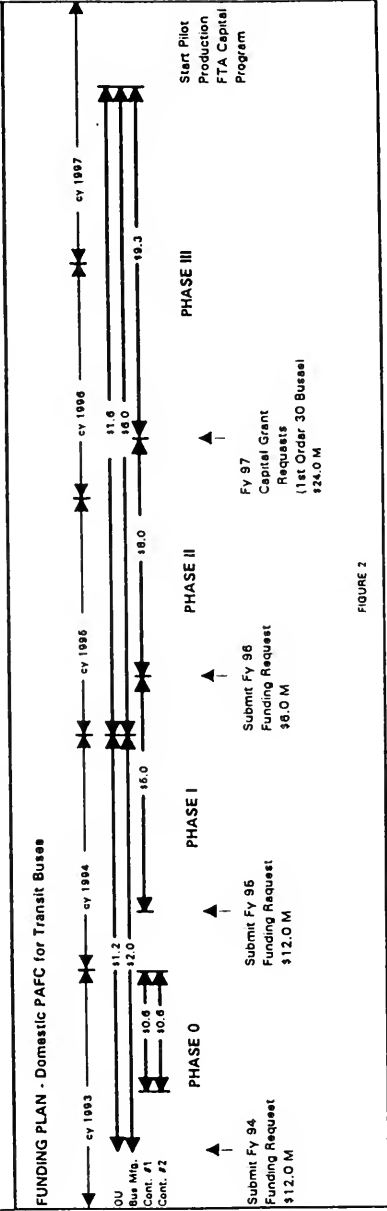
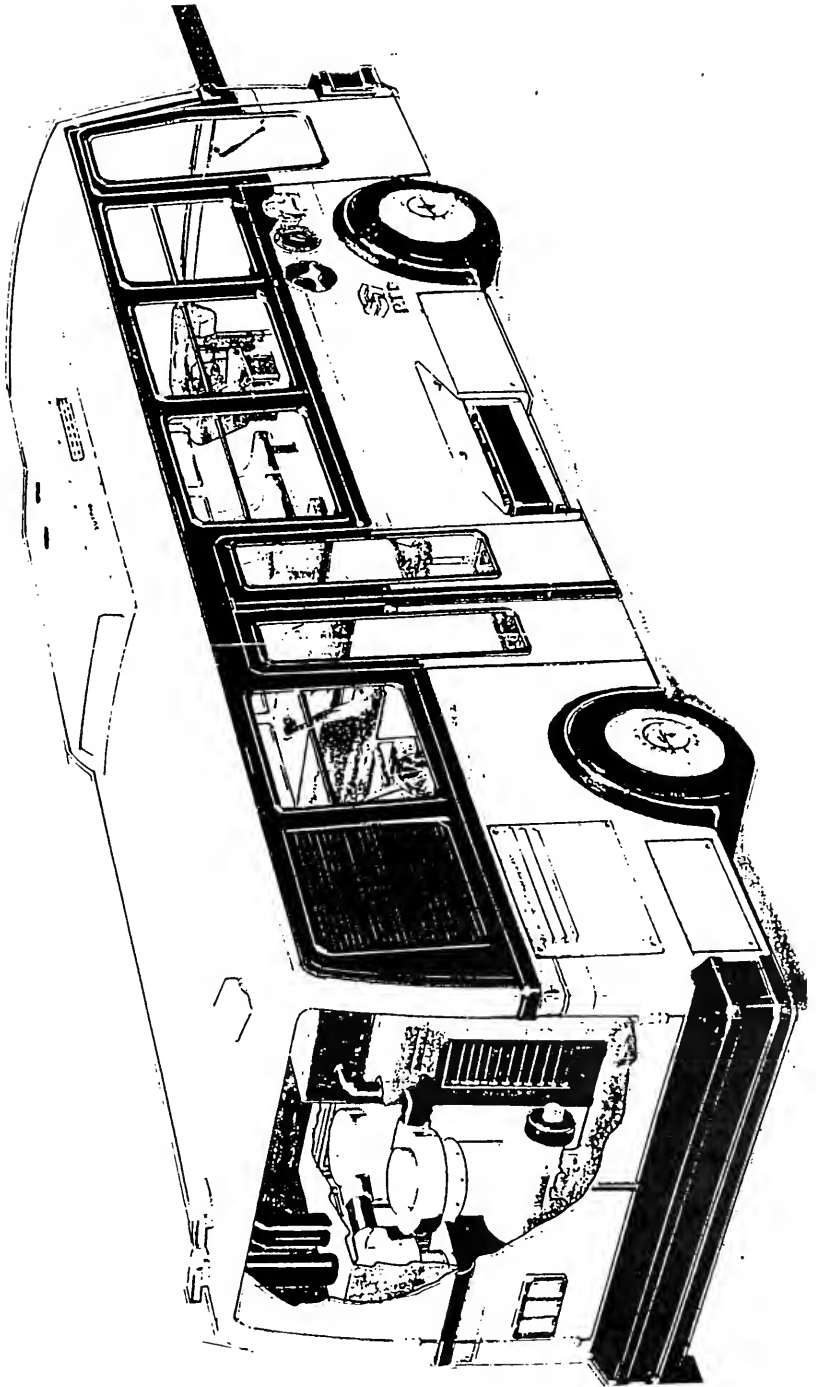


FIGURE 2



STATEMENT OF DR. ART KAUFMAN

Senator LAUTENBERG. Dr. Kaufman, welcome.

Dr. KAUFMAN. Thank you, Mr. Chairman and members of the subcommittee and staff.

I am Arthur Kaufman, president of H-Power Corp., a small business located in Belleville, NJ. Thank you for the opportunity to speak with you today about our company and about our views on transportation needs in this country.

We at H-Power have been active in the development of fuel cells and commercialization activities for that since 1988. H-Power is pursuing phosphoric acid and membrane electrolyte fuel cells for certain vehicular and stationary applications. One major emphasis is in low wattage, battery replacement type devices that take advantage of the high energy density of hydrogen, as stored in metal hydride cartridges.

H-Power is also engaged in the development of subsystems for fuel processing and energy storage in conjunction with integrated fuel cell systems. One approach of particular promise involves reacting steam in a bed of iron particles to generate hydrogen *in situ*, safely and inexpensively, to produce zero emissions fuel cell power or, alternatively, ultra low emissions I.C. engine power.

Most pertinent to today's discussion is the methanol-fueled, liquid-cooled phosphoric acid fuel cell power source for vehicular applications. H-Power is the prime contractor for the current DOE phase II project to implement such a power source in transit buses. This contract will result in the fabrication, testing, and deployment of three 29-foot test bed buses as well as the conceptual design for a full-size 40-foot fuel cell powered transit bus.

The fuel cell technology being applied by an overseas subcontractor in this project is based on technology developed by myself and H-Power colleagues while we were at Engelhard Corp. in New Jersey. It is H-Power's objective to become an integrator and supplier of fuel cell based propulsion systems for transit buses and other vehicles, and we shall seek to manufacture substantial portions of the fuel cell subsystem itself.

What we are advocating, Mr. Chairman, is not business as usual in relation to what was said earlier by Senator D'Amato. H-Power advocates that the phosphoric acid fuel cell bus program be recognized for its outstanding potential in creating a reasonably near-term environmental asset for our cities.

Furthermore, we often use the term "pathfinder" for this program since its commercial success would be expected to foster the acceptance and implementation of other fuel cell technologies in various transportation and related applications.

Specifically, the existing DOE fuel cell phase II program and its logical successors, leading to the construction and evaluation of small fleets of fuel cell powered buses, should be fully supported. Equally important, however, is strong support for the DOT program to provide funding for manufacturing engineering and tooling that will enable such construction to proceed at reasonable cost, starting in 1996.

Other key government actions to stimulate commercialization of this vital technology would be: (1) high DOT subsidies, say 90 per-

cent, for purchase of fuel cell powered buses by transit properties nationwide; (2) requirements for including such vehicles in Federal fleet purchases; and (3) examination of possible alterations in Federal, State, and local laws and regulations to facilitate demonstration and commercialization of such fuel cell powered vehicles.

We also wish to highlight the role of small business in this scenario. H-Power, as a prime contractor in the phase II fuel cell powered bus project, does not profit from this position. In fact, our company is required to contribute dearly to accommodate built-in cost-share obligations.

We believe that this is an acceptable price to pay in fostering this highly desirable transportation technology, providing that there is an opportunity for profitability down the road. We, as a product-oriented small business, can move responsively to address the market. We are not constrained by market-size concerns. We seek to exploit domestically created technology that we, as a company and as individuals, helped establish.

Our business sector is responsible for the overwhelming portion of job creation in this country in recent years, and this transportation technology has great potential for enhancing this trend.

In conclusion, Mr. Chairman, our country has the opportunity to foster a transportation technology that can greatly improve air quality in our cities and make a salient contribution toward our meeting Clean Air Act goals.

Furthermore, noise would be significantly reduced and high fuel efficiency can be realized while utilizing domestic fuels.

Finally, this transportation initiative can help bolster our country's position in fuel cell technology, create domestic jobs, and, especially because of substantially higher energy pricing overseas, provide an attractive export opportunity.

Thank you very much, Mr. Chairman.

Senator LAUTENBERG. Thank you. That was done with engineering precision in 5 minutes. I am sure that that is your background.

Dr. KAUFMAN. I plead guilty.

PREPARED STATEMENT

Senator LAUTENBERG. We have your prepared statement and it will be made part of the record.

[The statement follows:]

STATEMENT OF ARTHUR KAUFMAN

Dear Mr. Chairman and Subcommittee Members: I am Arthur Kaufman, President of H Power Corp., a small business located in Belleville, New Jersey. Thank you for the opportunity to speak with you today about our company and our views on transit needs in this country.

We at H Power have been active in the development of and pre-commercial activities for fuel cell power systems since 1988. I, personally, and some of my colleagues at H Power, have over 25 years of experience in the fuel cell field.

H Power is pursuing phosphoric acid and membrane electrolyte fuel cells for certain vehicular and stationary applications. One major emphasis, in addition to the phosphoric acid fuel cell based vehicle propulsion systems that will be discussed here today, is in low-wattage, battery-replacement type devices that take advantage of the high energy density provided by hydrogen as stored in metal hydride cartridges. We are currently making initial shipments of such units (at the nominal 25W level) as demonstration devices.

H Power is also engaged in the development of subsystems for fuel processing and energy storage in conjunction with integrated fuel cell systems. One approach of

particular promise involves reacting steam in a bed of iron particles to generate hydrogen in situ—safely and inexpensively—to produce zero-emissions fuel cell power (or, alternatively, ultra-low emissions I.C. engine power). The iron for such a process represents an alternative fuel since it can be formed through the use of a broad range of domestic fuels and waste-derived fuels.

Most pertinent to today's discussion, however, is the methanol-fueled, liquid-cooled phosphoric acid fuel cell power source for vehicular applications. H Power is the Prime Contractor for the current DOE Phase II project to implement such a power source in transit buses. This contract will result in the fabrication, testing and deployment of three 29-foot test-bed buses as well as the conceptual design for a full-size 40-foot fuel cell powered transit bus.

The fuel cell technology being applied by an overseas subcontractor in this project is based on technology developed by myself and H Power colleagues while we were at Engelhard Corporation in New Jersey. It is H Power's objective to become an integrator and supplier of fuel cell based propulsion systems for transit buses and other vehicles, and we shall seek to manufacture substantial portions of the fuel cell subsystem itself.

Permit me to offer my perspective on the application of fuel cells in transit applications at this point. Ever since I was involved in the application of such technology in forklift trucks in the 1980's, I have been convinced that the methanol-fueled, liquid-cooled phosphoric acid fuel cell, in conjunction with a surge battery, comprises an outstanding system for transit buses (and other vehicle applications as well). The system integrates well and our current projections indicate that performance will readily meet diesel bus benchmarks. Here is a fuel cell technology that is virtually ready (pending a modest degree of system optimization) and an application that truly makes commercial sense, provided that initial economic barriers can be overcome.

H Power advocates that the phosphoric acid fuel cell bus program be recognized for its outstanding potential in creating a reasonably near-term environmental asset for our cities. Furthermore, we often use the term "pathfinder" for this program since its commercial success would be expected to foster the acceptance and implementation of other fuel cell technologies in various transportation and related applications. Specifically, the existing DOE Phase II program and its logical successors, leading to the construction and evaluation of small fleets of fuel cell powered buses, should be fully supported. Equally important, however, is strong support for the DOT program to provide funding for manufacturing engineering and tooling that will enable such construction to proceed at reasonable cost, starting in 1996. This dual-pronged approach will help break the vicious cycle that so often prevents costs of new technology from being lowered because of insufficient volume, while volume remains low because costs are too high.

Other key Government actions to stimulate commercialization of this vital technology would be (i) high DOT subsidies (90 percent) for purchase of fuel cell powered buses by transit properties nationwide; (ii) requirements for including such vehicles in federal fleet purchases; and (iii) examination of possible alterations in federal, state and local laws to facilitate demonstration and commercialization of such fuel cell powered vehicles. These actions would serve to boost the new technology over the introductory commercialization threshold and then allow normal market forces to take over with respect to long-term commercialization.

We also wish to highlight the role of small business in this scenario. H Power, as Prime Contractor in the Phase II fuel cell powered bus project, does not profit from this position. In fact, our company is required to contribute dearly to accommodate built-in cost-share obligations. We believe that this is an acceptable price to pay in fostering this highly desirable transportation technology, providing that there is an opportunity for profitability down the road. We, as a product-oriented small business, can move responsively to address the market. We are not constrained by market-size concerns. We seek to exploit domestically-created technology that we, as a company and as individuals, helped establish. Our business sector is responsible for the overwhelming portion of job creation in this country in recent years, and this transportation technology has great potential for enhancing this trend.

In conclusion, our country has the opportunity to foster a transportation technology that can greatly improve air quality in our cities (the methanol-fueled fuel cell powered bus being virtually non-polluting) and make a salient contribution toward meeting Clean Air Act goals. Furthermore, noise would be significantly reduced, and high fuel efficiency can be realized while utilizing domestic fuels. Finally, this transportation initiative can help bolster our country's position in fuel cell technology, create domestic jobs, and—especially because of substantially higher energy pricing overseas—provide an attractive export opportunity.

STATEMENT OF ENGENE TUNILA

Senator LAUTENBERG. Mr. Tunila, it is nice to see you. We invite you to testify.

Mr. TUNILA. Thank you, Mr. Chairman. I am Eugene Tunila, executive vice president of Transportation Manufacturing Corp.

Senator LAUTENBERG. If you pull the microphone a little closer, we'll hear you a bit better. Thank you.

Mr. TUNILA. Thank you for the opportunity to testify before your subcommittee. My subjects discussed this morning will be, first, a brief résumé of the past history of the transit bus industry, conceptual proposals for investments and needs as well as their benefits, and, finally, ideas that can generate significant investment savings for operating as well as the passengers' properties and manufacturers.

The bus transit industry in the 1970's has been characterized as a national effort to achieve a strengthened transportation infrastructure oriented toward major population mobility in order to minimize the anticipated gridlock and improve the general economic welfare.

In the late 1970's and early 1980's, a multitude of offshore manufacturers entered the U.S. market in anticipation of growth and perceived opportunities, such as the European manufactured, experienced in more reliance on urban transportation.

M.A.N., Volvo, and Saab entered and exited our market and left behind a fleet of orphans which has, in turn, eventually increased the properties' operating costs as the offshore fleet aged.

The 1980's and the 1990's reflected a trend of funding erosion in the face of needs, as evidenced by ISTEA and additional regulations mandated by requirements for cleaner air and further product enhancements for the disadvantaged.

The present unit cost impact of providing an alternate fueled bus in compliance with ADA regulations is \$50,000 per vehicle of increased capital cost, which does not include the operating cost penalty. Other consequences include 2,000 to 3,000 pounds of additional weight on a clean air bus, reduced seating capacity per bus, from about 50 to 45 people, which, in return, requires more buses and/or bus utilization per passenger trip, in spite of the increasing number of same.

Third is increased training in new technologies on the supply as well as the user side.

OEM development funding diversions have occurred toward the regulations that have been mandated at the expense of new product development and enhancements.

Six, increased transition funding for conversion to new alternative fueling stations at the properties.

Seven is more weight, less passengers, cleaner air, and less fuel economy equate to higher operating costs to be borne by all, most especially in the nonattainment areas.

To further compound our situation, our fleets are aging since funding levels forced us to abandon the recommended replacement cycle. For example, during the 1980's, the average age of our fleets has increased to over 8 years on average versus a desired 6-year average. We are currently trapped in a whirlpool of obsolete tech-

nology and product. We are past the point of prudent deferral, and a planned effective program to minimize capital and operating costs while maximizing intermodal service is required.

TMC has basically four priority recommendations. One, funding program available with a consistent flow and predictability that supports a replacement cycle of an average fleet age of 6 to 8 years. The replacement cycle would equate to a U.S. volume of approximately 3,000 to 4,000 units per year plus or minus growth.

Two, to update our fleets by a transition or bridge program providing a framework within ISTEA to remanufacture aged buses and incorporate the latest ADA and clean air standards at approximately 60 percent of the cost of a new bus but with a new warranty. This program will also stretch the public's dollar.

Three, support R&D efforts on the 21st century technology, such as the fuel cell project, which can achieve ZEV status and also become the vanguard for eventual bus exports from the United States with U.S. built fuel cells. In addition, the program has the advantage of utilizing the existing fueling stations being put in place for alternate fuel vehicles—no throw-away investments in the fuel cell program.

Fourth, fund a total systems approach to coordinate, evaluate, and manage all the interfaces for transportation R&D, the intermodality network, exportable product and technology goals, product recyclability, IVHS, clean air and energy dependency. Such a proposal already exists and is being sponsored by Sandia National Laboratories.

Areas where TMC recommends for your consideration on capital and operating savings include: one, replace the 80 to 90 percent funding for bus purchases with a fixed per unit funding level to discourage specification proliferation and provide incentives to minimize unnecessary specifications and government controls, all within accepted heavy duty bus standards.

Two, provide a stimulus for a remanufactured bus program at 60 percent of new bus cost on properties or for properties whose applications do not require a new bus, perhaps rural use.

Three, reassess trolley bus funding and divert to the purchase of alternate fueled vehicles as well as alternate fueled fueling stations as an interim step toward the implementation of fuel cell technology. The trolley product is not only imported, but it is also obsolete technology and will become even more obsolete after the introduction of the fuel cell.

Four, mandate that all new buses produced after 1997 must be capable of being remanufactured to accept fuel cell technology.

Five, foreign aid should be tied directly to the purchases of U.S. manufactured goods, for example, new or used buses to create a transportation infrastructure for emerging Nations.

Six, reevaluate the duplication on the proposed R&D projects, such as CALSTART, Chesapeake, the Houston-New York Consortium, and ATTB, and focus more efforts on the fuel cell.

Seven, after transaction prices are established between the manufacturer and buyer, mandate that progress payments are to be utilized with the manufacturer to pass through the capital cost savings to the buyer. This is a 2-percent potential reduction to the total capital program.

Last, trade parity with Canada for transit buses is basically non-existent, as currently one-third of the United States market for transit buses is Canadian export versus no exports to Canada by United States manufacturers for transit buses.

I sincerely appreciate this opportunity to share our vision, Senator. I believe with the fuel cell, we are on the cutting edge of technology.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you, Mr. Tunila. We have your prepared statement and it will be made part of the record.

[The statement follows:]

STATEMENT OF EUGENE F. TUNILA

DEAR MR. CHAIRMAN AND SUB COMMITTEE MEMBERS:

**A TMC PERSPECTIVE OF THE TRANSIT BUS INDUSTRY
(STATUS AND NEEDS)**

I AM EUGENE F. TUNILA, EXECUTIVE VICE PRESIDENT OF TRANSPORTATION MANUFACTURING CORPORATION, DIVISION OF DIAL CORP. THANK YOU FOR THE OPPORTUNITY TO TESTIFY BEFORE YOUR SUB COMMITTEE.

THE SUBJECTS DISCUSSED THIS MORNING WILL BE FIRST, A BRIEF RESUME OF THE PAST HISTORY OF THE TRANSIT BUS AS WELL AS THE CURRENT INDUSTRY STATUS. SECONDLY, CONCEPTUAL PROPOSALS ON INVESTMENTS, NEEDS AND THEIR BENEFITS, AND FINALLY, IDEAS THAT CAN GENERATE SIGNIFICANT INVESTMENT AND OPERATING SAVINGS FOR TRANSIT BUS PASSENGERS, PROPERTIES AND MANUFACTURERS.

WHAT I WILL NOT ADDRESS ARE QUANTITATIVE FUNDING SOURCES AND LEVELS WHICH ARE BEST DETERMINED AFTER THE RE-EVALUATION OF THE TRANSIT BUS PROGRAM. A DYNAMIC AND REVITALIZED PROGRAM WILL ADOPT ALL OR MOST OF OUR RECOMMENDED IDEAS AS THEY RELATE TO THE TOTAL INTERMODALITY OF OUR NATIONAL TRANSIT NEEDS.

THE BUS TRANSIT INDUSTRY IN THE 1970'S HAS BEEN CHARACTERIZED AS A NATIONAL EFFORT TO ACHIEVE A STRENGTHENED TRANSPORTATION INFRASTRUCTURE ORIENTED TOWARD MAJOR POPULATION INTERMODALITY IN ORDER TO MINIMIZE THE ANTICIPATED GRIDLOCK AND IMPROVE THE GENERAL ECONOMIC WELFARE. INTERMODALITY CONSIDERATIONS WERE NOT AS PREVALENT AS IN TODAY'S STRATEGY. CRITICS WOULD SAY IT WAS A PERIOD OF HASTE AND WASTE RATHER THAN A PLANNED INTEGRAL PROGRESSION TOWARDS A NATIONAL TRANSPORTATION POLICY. IN THE LATE 70'S AND EARLY 80'S A MULTITUDE OF OFFSHORE MANUFACTURERS ENTERED THE US MARKET IN ANTICIPATION OF GROWTH AND PERCEIVED OPPORTUNITIES SUCH AS THE EUROPEAN MANUFACTURERS EXPERIENCED FROM MORE RELIANCE ON URBAN TRANSPORTATION. M.A.N., VOLVO, AND SAAB ENTERED AND EXITED OUR MARKET AND LEFT BEHIND A FLEET OF ORPHANS WHICH HAS IN TURN EVENTUALLY INCREASED THE PROPERTIES OPERATING COSTS AS THE OFFSHORE FLEET AGED.

THE 80'S WERE ALSO CHARACTERIZED AS A CONTINUAL EROSION OF FUNDING LEVELS IN SPITE OF AN AWARENESS OF SOCIETIES NEEDS FOR CLEANER AIR AND TRANSPORTATION MOBILITY FOR THE DISADVANTAGED.

THE 90'S CONTINUED THIS TREND OF FUNDING EROSION IN THE FACE OF NEEDS AS EVIDENCED BY ISTEA AND ADDITIONAL REGULATIONS MANDATED BY REQUIREMENTS FOR CLEANER AIR AND FURTHER PRODUCT ENHANCEMENTS FOR THE DISADVANTAGED. AS A CONSEQUENCE, THE PRESENT UNIT COST HAS EXCEEDED THE INFLATIONARY COST GENERALLY ASSOCIATED WITH OTHER AUTOMOTIVE PRODUCTS. THE PRESENT UNIT COST IMPACT OF PROVIDING AN

ALTERNATE FUELED BUS IN COMPLIANCE WITH ADA REGULATIONS IS \$50,000 PER VEHICLE OF INCREASED CAPITAL COSTS.

OTHER CONSEQUENCES INCLUDE:

- O TWO TO THREE THOUSAND POUNDS OF ADDITIONAL WEIGHT.
- O REDUCED SEATING CAPACITY PER BUS FROM ABOUT 50 TO 45 PEOPLE WHICH IN TURN REQUIRES MORE BUSES AND/OR BUS UTILIZATION PER PASSENGER TRIP IN SPITE OF AN INCREASING NUMBER OF SAME.
- O INCREASED TRAINING IN NEW TECHNOLOGIES ON THE SUPPLY AND USER SIDE.
- O OEM DEVELOPMENT FUNDING DIVERSIONS TOWARD REGULATIONS AT THE EXPENSE OF NEW PRODUCT DEVELOPMENT AND ENHANCEMENTS.
- O INCREASED TRANSITION FUNDING FOR TRANSITION TO NEW ALTERNATIVE FUELING STATIONS AT THE PROPERTIES.
- O MORE WEIGHT, LESS PASSENGERS, CLEANER AIR, LESS FUEL ECONOMY EQUATES TO HIGHER OPERATING COSTS TO BE BORNE BY ALL, MOST ESPECIALLY WITHIN NONATTAINMENT AREAS.

TO FURTHER COMPOUND OUR SITUATION OUR FLEETS ARE AGING SINCE FUNDING LEVELS FORCED US TO ABANDON THE RECOMMENDED REPLACEMENT CYCLE. FOR EXAMPLE, DURING THE 80'S THE AVERAGE AGE OF OUR FLEETS HAS INCREASED TO OVER 8 YEARS VERSUS A DESIRED AVERAGE AGE OF SIX YEARS. WE ARE CURRENTLY TRAPPED IN A WHIRLPOOL OF OBSOLETE TECHNOLOGY AND PRODUCT. WE ARE PAST THE POINT OF PRUDENT DEFERRAL. A PLANNED-EFFECTIVE PROGRAM TO MINIMIZE CAPITAL AND OPERATING COSTS WHILE MAXIMIZING INTERMODAL SERVICE AND AVOIDING THE WASTE/WASTE OVER/UNDER PRODUCTION OF THE PAST IS REQUIRED. TMC RECOMMENDS FOR YOUR CONSIDERATION A "FIX THE PROBLEM" SCENARIO NOT "WHO IS TO BLAME" SCENARIO.

THE TOP FOUR INVESTMENT PRIORITIES ARE:

- O FUNDING PROGRAM AVAILABLE WITH A CONSISTENT FLOW AND PREDICTABILITY THAT SUPPORTS A REPLACEMENT CYCLE OF AN AVERAGE FLEET AGE OF 6-8 YEARS. THE REPLACEMENT CYCLE WOULD EQUATE TO A U.S. VOLUME OF THREE TO FOUR THOUSAND UNITS PER YEAR +/- GROWTH.
- O TO UPDATE OUR FLEETS BY A TRANSITION OR BRIDGE PROGRAM PROVIDING A FRAMEWORK WITHIN ISTEA TO REMANUFACTURE AGED BUSES AND INCORPORATE THE LATEST ADA AND CLEANER AIR STANDARDS AT APPROXIMATELY 60% OF THE COST OF A NEW BUS, BUT WITH A NEW BUS WARRANTY. THIS PROGRAM WILL ALSO STRETCH THE PUBLICS INVESTMENT DOLLAR.
- O SUPPORT R & D EFFORTS ON THE 21ST CENTURY TECHNOLOGY SUCH AS THE FUEL CELL PROJECT WHICH CAN ACHIEVE ZEV STATUS AND ALSO BECOME THE VANGUARD FOR EVENTUAL BUS EXPORTS WITH U.S. BUILT FUEL CELLS. IN ADDITION, THE PROGRAM HAS THE ADVANTAGE OF UTILIZING THE EXISTING FUELING STATIONS BEING PUT IN PLACE FOR

ALTERNATIVE FUELED VEHICLES. NO THROW AWAY INVESTMENT IN THIS PROGRAM!

- 0 FUND THE TOTAL SYSTEMS APPROACH FOR TRANSPORTATION R & D INTERMODALITY NETWORK, EXPORTABLE PRODUCT AND TECHNOLOGY, PRODUCT RECYCLABILITY, IVHS, CLEAN AIR AND ENERGY DEPENDENCY AS THE PROGRAM PROPOSED BY THE SANDIA NATIONAL LABORATORIES.**

AREAS WHERE TMC RECOMMENDS FOR YOUR CONSIDERATION ON CAPITAL AND OPERATING SAVINGS INCLUDE:

- 0 REPLACE THE 80 TO 90% FUNDING FOR BUS PURCHASES WITH A FIXED PER UNIT FUNDING LEVEL TO DISCOURAGE SPECIFICATION PROLIFERATION AND PROVIDE INCENTIVES TO MINIMIZE UNNECESSARY SPECIFICATIONS AND GOVERNMENT CONTROLS ALL WITHIN ACCEPTED HEAVY DUTY BUS STANDARDS.**
- 0 PROVIDE STIMULUS FOR REMANUFACTURED BUS PROGRAM AT 60% OF NEW BUS COSTS - ON PROPERTIES WHICH APPLICATIONS DO NOT REQUIRE A NEW BUS.**
- 0 RE-ACCESS TROLLEY BUS FUNDING AND DIVERT TO THE PURCHASE OF ALTERNATE FUELED BUSES, ALTERNATE FUEL FUELING STATIONS AS AN INTERIM STEP TOWARD FUEL CELL TECHNOLOGY. TROLLEY PRODUCT IS IMPORTED AND WILL BECOME OBSOLETE SHORTLY AFTER THE INTRODUCTION OF THE FUEL CELL.**
- 0 A MANDATE THAT ALL NEW BUSES PRODUCED AFTER 1997 MUST BE CAPABLE OF BEING REMANUFACTURED TO ACCEPT FUEL CELL TECHNOLOGY.**
- 0 FOREIGN AID SHOULD BE DIRECTLY TIED TO PURCHASES OF U.S. MANUFACTURED GOODS, EG: NEW OR USED BUSES TO CREATE A TRANSPORTATION INFRASTRUCTURE FOR EMERGING NATIONS.**
- 0 RE-EVALUATE THE POTENTIAL DUPLICATION ON THE PROPOSED R & D PROJECTS, SUCH AS CALSTART, CHESAPEAKE, HOUSTON, NEW YORK CONSORTIUM, AND ATTB.**
- 0 AFTER TRANSACTION PRICES ARE ESTABLISHED BETWEEN THE MANUFACTURER AND BUYER, MANDATE THAT PROGRESS PAYMENTS ARE TO BE UTILIZED WITH THE MANUFACTURER TO PASS THROUGH TO THE BUYER THE COST OF CAPITAL SAVINGS. THIS IS A POTENTIAL 2% SAVINGS ON THE TOTAL CAPITAL PROGRAM.**
- 0 TRADE PARITY WITH CANADA FOR TRANSIT BUSES IS NON EXISTENT - AS CURRENTLY ONE-THIRD OF THE U.S. MARKET FOR TRANSIT BUSES IS CANADIAN EXPORT VERSUS NO EXPORTS TO CANADA BY U.S. MANUFACTURERS FOR TRANSIT BUSES.**

I SINCERELY APPRECIATE THIS OPPORTUNITY OF SHARING OUR VISION OF A TRANSIT SYSTEM WHICH IS ON THE CUTTING EDGE OF TECHNOLOGY, PROVIDES INCREASED PUBLIC APPRECIATION OF OUR SYSTEMS, AND STRETCHES THE PUBLIC INVESTMENT IN OUR VITAL INDUSTRY.

STATEMENT OF SENATOR DOMENICI

Senator LAUTENBERG. We are pleased to be joined by Senator Domenici, our colleague, who is knowledgeable and very much interested in transportation matters. He wanted to have a chance to say a word.

Senator DOMENICI. Thank you so much, Mr. Chairman. I wanted to make sure that my friend from TMC in Roswell knew that I am a member of this subcommittee, but I am upstairs marking up the budget resolution. We have another 5 hours to go, so I have to return.

But I wanted to thank you for coming up here and sharing your expertise with this subcommittee. It is good to see the other two witnesses. I know Father George quite well. So two out of the three witnesses I know very well, and I welcome you also.

Reverend GEORGE. Thank you.

Senator DOMENICI. Let me speak to you for a moment, Mr. Tunila, and congratulate you on the effort that TMC is involved with in trying to use modern technology and modern research, including some research that can be supplied by the Federal Government's excellent national laboratories to move ahead. With this effort, our buses will be not only more competitive, but serve their purposes better, and be more durable and of higher quality. I congratulate TMC for taking the lead on this important initiative.

Last, we are delighted that you are in New Mexico, in Roswell, NM.

I think at one point you told me that Roswell, NM, was a small New Mexico city that produced more buses than any other city in the United States. I don't know if that is still the case, but that was a very exciting plus for New Mexico.

Mr. TUNILA. If it isn't, Senator, it will be.

Senator DOMENICI. Thank you.

Senator LAUTENBERG. By the efforts of this committee, Mr. Tunila?

Senator DOMENICI. Yes; I will help you, Mr. Chairman.

Senator LAUTENBERG. Thank you very much, Senator Domenici.

One of the things that we want to try to do is to move, as you noted in your comments, some of this manufacture back here to the United States where most of this was begun. We ought not to have lost this important manufacturing opportunity.

We would like to find out how the Federal Government can better promote and encourage domestic content in transit equipment, see what kind of reforms need to be made to encourage more American manufacturers to get involved with transit manufacturing, and review what kind of technologies seem to be the most promising for transit applications in order to make our transit operations more effective.

I have one word to Dr. Kaufman. I don't know whether you know where Washington Avenue is in Belleville.

Dr. KAUFMAN. Yes; I certainly do.

Senator LAUTENBERG. Do you know where Girolovan Street is?

Dr. KAUFMAN. Oh, yes.

Senator LAUTENBERG. Well, I lived off the corner, upstairs, over my father's store.

Dr. KAUFMAN. Oh, a neighbor.

Senator LAUTENBERG. That was with my family and a lot of years ago. It was en route to getting here that I worked behind the counter of that store with my parents.

ALTERNATE ENERGY SYSTEMS FOR CITY BUSES

Father George, your university is involved in a very exciting and promising area of research for the development of alternate energy systems for city buses. How did Georgetown get involved in this field?

Reverend GEORGE. Well, I have been asked that on a number of energy issues, Mr. Chairman, and it is the value of a liberal education. You study history so that you do not make the mistakes of the past. You study philosophy so that you do not try to rework how people philosophize on how to live, so that you can make progress. And you learn logic so you can solve problems. That is the purpose of a liberal education, to get you to think for yourself so that you are not manipulated out of ignorance.

Well, we have all kinds of energy problems. We are just a small city, really, when you get down to it. And we had an aging fleet of buses. My thought was—actually, it was Dean Price's thought—that we could either just buy some more Mercedes diesel buses, like we had, or think of something imaginative that would serve the purposes of the university and the Federal Government. We came to the conclusion that this technology, which had been studied at Los Alamos, was really feasible, but nobody seemed to recognize that if you pushed it, you could actually have clean buses and we could get a fleet of buses out of this. That was my original thought—to get a fleet of buses for Georgetown.

It ended up much more than that. It got to the point where at times I would say is it really worth all this for 12 lousy buses. You know, why don't we just buy some Fords?

But we understood that if you get your car behind a diesel bus with your air conditioner on and your windows up, that soot still gets inside the car.

Now I don't smoke and I would smell that stuff. I said if we could do this, it would really benefit our cities and the world.

I just made some friends in Mexico. I could not believe that city and what clean buses would do there. So then it became that it is the right thing to do. True to form, we could not solve the problem, but we could think through how to solve the problem. That is how we ended up with H-Power and TMC. These are the experts. You do not have to solve the problem yourself. Just find the right experts. That is how we got involved with it and found the answer to the solution.

Fortunately, the wisdom of this committee has seen that. We thank you.

Senator LAUTENBERG. That is very interesting.

Do you know what advantages the technology you are pursuing offer for lower operating costs and meeting the Clean Air Act requirements?

Reverend GEORGE. Well, I would bow to the experts on that, but I am certain that we have read the Clean Air Act law. I thought you might ask that question.

The fuel cell bus—I checked this out with Sam—puts out NOX at 0.18. A diesel bus puts out 5.0. The carbon monoxide in these buses is 0.55. A diesel's is 15.5. That is how we come to the conclusion that it takes hundreds of these buses to pollute as much as one diesel.

Just think about that. It is phenomenal.

Senator LAUTENBERG. It is incredible. If you ever want to get a first-hand opinion of the effect of the emissions from diesels, go to talk to people who work in toll booths, who collect. Whether it is at the Washington Bridge, the Lincoln Tunnel, the New Jersey Turnpike, you name it. Wherever there is a traffic stop where humans are involved, they will tell you about what an unpleasant assignment that is. So we would like to see your success, all of you. Continue to work on this.

We have to find out how the Federal Government can help. What can we do besides giving money, which is a very hard thing to do these days. But we have to do it. We have to invest in the future, just like any company.

I ran a company and our investments in the future were made every day, often off the sweat of our backs because we could only afford to do things that our own labor and our own intellect could supply. But it took a long time to get it going.

PROMOTING RESEARCH AND DEVELOPMENT

What can the Federal Government do, Dr. Kaufman, do you think, to promote more research and development in energy?

Dr. KAUFMAN. We had alluded to some of the factors beyond the funding of these key DOE and DOT programs in terms of regulatory issues and legal issues that are on the State, Federal, and local levels that tend to be impediments to introducing new technology, things that tend to get in the way of progress. Redtape just slows things down so much. We already have been faced with an awful lot of that type of thing.

So it is that type of thing. It is the requirement of Federal fleets to utilize this new technology appropriately so it can be demonstrated and get over this introductory commercialization hurdle that the Federal Government can to do help over and above the funding of these programs that I alluded to earlier.

Reverend GEORGE. Mr. Chairman, just on one thing there, this program is—really, we could have had a bus 2 years ago. But because of bureaucratic problems between the Urban Mass Transit Authority and the DOE, and moneys going back and forth, and the contracting procedures, and the protests here and there, it delayed things to where the window for us capitalizing on this industry is shorter. I think people estimate that we have a 4- or 5-year lead on other countries with this technology, but that window will get shorter as it takes or goes a bit longer.

What I have noticed in my brief—not too brief anymore—history at Georgetown is that we are really good at developing good technology. I mean, the space program has done it. There is a variety of ways.

It is the industry, it is the getting of this stuff to where the United States captures the market that is where we break down. Sort of the Government forgets about things. It's oh, good, we can create

phos-acid fuel cells good enough. They can run trains and buses? Forget it.

Well, you cannot do that if you don't want to be buying foreign buses because the other people will capitalize on that technology and how to get those early prototype factories going. That is where we have to take the next step.

Senator LAUTENBERG. So there is always the question of whether or not the product leads the market or the market leads the product. Very often, in matters that include science and technology, it is the product that leads the market. And if you do not get going on it and you don't say hey, listen, we can do it, if what we are going to do is wait for our industry to be protected from others, I, frankly, do not think that is the right way to go. I think what we have to do is encourage the Government to encourage research, to encourage development, to get out there and make the awareness factor a larger one in terms of what kind of opportunity exists out there.

We have been delinquent. It has been easier for a lot of companies in this country to shift their jobs overseas and buy the products there, instead of putting the time, the effort, and the funds in to making the product here. We have the creativity. That is the great thing about this country. That is the resource. In addition to our wonderful physical condition in this world, we have the ingenuity and the creativity that this disparate population of ours brings. It is an energy force, and it has not been properly used.

So we would like to see that change.

Father George, I have only one significant question further for you. How is Georgetown going to do in the next round of the Big East Tournament?

Reverend GEORGE. You could be in trouble Tuesday night. You could really be in trouble. No; it's Friday afternoon. We think our freshmen are coming of age. [Laughter.]

I mean, Seton Hall definitely has seniority, and we do respect our elders. [Laughter.]

Senator LAUTENBERG. Are you saying to wait for next year? [Laughter.]

Seton Hall has such a place in New Jersey's heart. I must tell you that it is a proud institution. They have worked very hard. They have developed a wonderful law school up there.

By the way, is De Lello a familiar name to you, Father Alex, or Andrew? He comes from New Jersey and teaches maybe Semitic language or something? Is it not familiar to you?

Reverend GEORGE. It's ringing, but I don't know why.

You know, Seton Hall is the best in the Big East this year. But we love to upset people at Georgetown, you know.

Senator LAUTENBERG. They'll never lie down. Never. [Laughter.]

DECLINE OF AMERICAN MANUFACTURERS IN TRANSIT FIELD

Mr. Tunila, you have been working in the private sector and manufacturing transit equipment for some time. Why do you think we have seen, over these past years, such a decline in the number of American manufacturers involved in the transit field?

Mr. TUNILA. Well, the cost of entry is very expensive with all the mandated changes, and with uneven funding and unpredictable

source of funds for the transit buyer, you end up not having a very attractive industry to attract competent engineers and professional people. And you do not have a career path to follow.

It is almost the same exodus that has occurred in other industries where we have exported our manufacturing jobs for a variety of reasons. The instability of the marketplace is such that we had mandated changes. Everybody bought buses to avoid the cost of mandated changes in terms of some of the properties, which created a boom or bust situation. Well, the bust took some people out.

The low bid process allowed degradation of product, which, in turn, hurt the high value or severe service vehicle manufacturers. So it is not any one thing, Senator. It is a whole combination of things.

It is not a good business environment to be in.

Senator LAUTENBERG. It could be made better.

Mr. TUNILA. Oh, yes.

Senator LAUTENBERG. Do you think the Federal Government can lead that charge, then?

Mr. TUNILA. Well, yes; I think we can make an exportable product. We do not export any buses from our country to other countries, any transit buses. That is a testimony to the type of technology we have today in our buses and what is required, versus the rest of the world.

Senator LAUTENBERG. So we are behind.

Mr. TUNILA. Yes; there isn't any doubt about that.

Senator LAUTENBERG. Is there any tariff or trade restrictions that you are aware of that keep us from getting a share of the export market, or does the problem lie principally in the product?

Mr. TUNILA. Well, I think somehow transit buses have a great national pride, not national but State also.

Senator LAUTENBERG. Do we have the capacity here to meet our transit capital needs for rolling stock, subsystems, brakes, air conditioners, and the like?

Mr. TUNILA. We have more than enough capacity in this country for the foreseeable future. In fact, we have too much capacity.

Senator LAUTENBERG. We just have to develop the appropriate technology and the marketplace, then.

Mr. TUNILA. That's right. We need an exportable product. We are a very small business. We have to take advantage of ancillary industries, such as heavy duty trucks, and use their components, which have 20, 30, 40 times the volume we have. So we have to do a different concept of development within our industry.

As it stands right now, all our development funds have gone to meet mandated changes, such as the Clean Air Act. We do not have a focused policy on clean air. We have too many alternatives to explore. It is just like some of the R&D proposed projects. There are too many alternatives. We should focus and have a national energy program on exactly where are we going.

This does not mean we have to make a choice of one. We should have several alternatives. But we have too many today. You cannot keep up with them all—at least we can't. Let's put it that way.

SUBMITTED QUESTIONS

Senator LAUTENBERG. Thank you all very much for being here. I will submit some other questions to be answered for the record. [The following questions were not asked at the hearing, but were submitted for response subsequent to the hearing:]

FEDERAL TRANSIT ADMINISTRATION

QUESTIONS SUBMITTED BY SENATOR LAUTENBERG

SENATOR LAUTENBERG: Even though FTA is, by statute, required to project the transit needs in both the capital, maintenance, and operating areas, your agency has not done so for operating. Why is that?

ANSWER: We believe that it is better for the Section 308 Report to focus on capital costs, rather than include operating needs. "Needs" generally refers only to capital costs. The Highway Needs study which we parallel focuses needs exclusively on the capital costs. Other infrastructure needs studies similarly focus only on capital. Addressing operating costs would increase the complexity of the report. It would require FTA to make decisions on fare policies, elasticities of demand with respect to fares, the proper role of fares versus public subsidies, and other similar concerns. Most of these decisions are controlled by local decisionmakers. For example, Washington Metro has variable fares of up to \$3.00 for rail trips, while Atlanta charges flat fares. Inclusion of operating costs is likely to decrease the reliability of the estimates included because of the large number of assumptions which would have to be made in these areas.

SENATOR LAUTENBERG: The two previous administrations did not believe that it was the responsibility of the Federal government to provide operating assistance for the larger transit operators of this country. Is this the reason why FTA's projections do not include the operating needs in its report.

ANSWER: No. Our decision to focus on capital needs was based on the technical issues only.

SENATOR LAUTENBERG: The Federal Highway Administration projects future highway demand when determining highway maintenance and expansion needs. How does your needs estimate address future demand?

ANSWER: Our estimates of capital needs are based on two scenarios for future transit demand. The Maintain Conditions and Performance scenario includes the cost of expanding service at a rate equal to recent trends in patronage growth (0.8 percent per year). Under this scenario, transit use would increase by 17 percent over the next twenty years to 44 billion passenger miles, compared with 38 billion today. The Improve Conditions and Performance scenario includes increased transit demand based on FHWA's estimate in its 1991 Highway Needs Study that, over the next twenty years, 34,000 lane miles of additional highway capacity would be foregone, replaced by increased high occupancy vehicle use, improved traffic operations, and transit use. Under this scenario, transit use would increase by 65 percent over the next twenty years, to 64 billion passenger miles.

SENATOR LAUTENBERG: All the methodologies appear not to adequately reflect the cost of Federally-imposed requirements such as the Clean Air Act and the Americans with Disabilities Act. Please explain how you arrived at your figures?

ANSWER: For the Americans with Disabilities Act, the report used the Regulatory Impact Analysis for the Department's Final Rule to develop the estimates. The costs to Maintain Conditions and Performance include an incremental annual cost of \$42 million to make fixed route buses accessible, \$90 million per year to acquire the vehicles and equipment necessary to provide supplemental paratransit service, and \$123 million per year to make rail systems accessible.

As far as the Clean Air Act is concerned, the report estimates an annual need of \$150 million for alternative fuel buses and \$100 million for the costs of retrofiting maintenance facilities to deal with alternative fuels. However, the costs are not added in the total estimated needs because it is not yet clear whether or not "Clean Diesel" technology will be able to meet EPA's emission standards for buses. If "Clean Diesel" is capable of meeting the standards, then alternative fuel buses will not be required and the costs of meeting these standards will be significantly less.

While we believe that these estimates are accurate, we are making efforts to improve the reliability of the data for the 1994 Section 308 Report. We expect to use the contents of the ADA Transition Plans, which are now being reviewed by FTA, to determine the currently planned costs of complying. On the Clean Air Act, we will have better information on whether or not alternative fuel buses will be required. In addition, in subsequent reports, we expect to use the contents of the State and Metropolitan Transportation Plans and Transportation Improvement Programs to determine how State and local governments assuring that these plans are in conformity with air quality requirements. We expect that transit will become increasingly important in these plans due to air quality concerns.

SENATOR LAUTENBERG: Some argue that we should actually reduce the Federal share of transit capital investment, since the current levels encourage localities to amass capital that they do not need and cannot afford to operate. Do you agree with this assertion?

ANSWER: No. There is clear evidence that the amount of Federal funding provided is not excessive. First, even though the statutory share for Federal capital assistance is 80 percent, in reality State and local governments are investing substantially in excess of the minimum non-Federal share on transit. In 1991, the Federal government's share of total capital spending of \$5.1 billion was only 50 percent.

Second, the total amount of capital spending on transit is well within the needs estimated in the Section 308 Report, and additional funding could be put to productive use. At present, spending is adequate to

Maintain Conditions and Performance and make some strides toward restoring the backlog of past disinvestment to Improve Conditions. The President's Economic Stimulus Package is likely to increase total capital spending to about \$6.2 billion per year, still within the overall needs estimated.

Third, the new requirements for financially-constrained Transportation Plans and Transportation Improvement Programs should go a long way to assuring that States and local governments have adequate resources to operate the capital stock which they acquire. Since 1987, FTA has used its Financial Capacity Circular to review plans and programs in a similar manner. Also, FTA's Major Investment Policy requires a strong local financial commitment to projects, including both the local share of capital costs as well as the long term operating cost component.

SENATOR LAUTENBERG: How is FTA ensuring that Federal capital investments are optimized, and what criteria are used?

ANSWER: For major capital investments, Section 3(i) of the Federal Transit Act and our Major Investments Policy require projects to undergo an analysis of alternatives and preliminary engineering, pass a project justification test, and be supported by an adequate degree of local financial commitment. Project justification includes cost-effectiveness, mobility improvements, and operating efficiencies. The policy statement calls for cost-effectiveness to be measured in terms of the cost to attract a new transit rider. We believe that this is a representative measure of the benefits of transit investments.

All projects must result from the ongoing transportation planning process. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) strengthens the planning process considerably. This will improve the quality of the projects which are included in the required Transportation Plans and Transportation Improvement Programs.

SENATOR LAUTENBERG: How do you determine if individual transit systems are making optimum use of Federal capital investment funds?

ANSWER: We do not second guess the decisions made by transit operators on the allocation of the funds made available to them by formula. However, we do assure that the projects are eligible for Federal funding and are the result of the planning and programming process. Since the amount of formula funds available is still short of the total which could be used for cost-effective projects in most areas, we believe that the transit operators and Metropolitan Planning Organizations have a strong incentive to use the funds for the best projects.

For major investments, we use the Section 3(j) Report to describe the merits of the projects in the New Starts pipeline. We also make recommendations on which projects are the best candidates for New Starts funding in the next fiscal year. These recommendations are designed to assure

that projects which are ready to go, or are already underway, receive an amount of funds sufficient to allow them to proceed on an efficient construction schedule.

QUESTIONS SUBMITTED BY SENATOR SASSER

SENATOR SASSER: Please describe the Administration's proposed Fiscal Year 1994 electric vehicle program.

ANSWER: The ISTEA provided \$12 million for an Advanced Transportation and Electric Vehicles Research and Development Program. Four consortia were selected for funding in FY 1992 and their progress is being monitored: (1) Calstart is developing advanced electric vehicle components and subsystems; will demonstrate and evaluate components and issues concerning the necessary infrastructure support systems; and will develop advanced prototypes and specifications for Electric Vehicle (EV) buses; (2) the Chesapeake Consortium is developing an advanced powertrain for electric vehicles that will be demonstrated and evaluated in 10 prototype electric vehicles; (3) the New York State Consortium will develop and demonstrate a low floor, full sized bus with a hybrid electric propulsion system; and (4) the Advanced Lead Acid Battery Consortium (ALABC) is developing rapid recharging systems and battery monitoring and control systems.

Work efforts will continue with the Electric Transit Vehicle Institute (ETVI) of Chattanooga to promote the design, production, and use of electric vehicles in transit. The ETVI will continue to serve as the facilitator and resource center for electric vehicle development for the transit industry.

FTA will increase its involvement and assume a greater role in the joint Fuel Cell/Battery Bus Program that is being conducted with the Department of Energy. Three prototype fuel cell/battery buses will be placed in demonstrations: two of these buses will use methanol fuel as the source for the hydrogen used in the fuel cell, one of these will be used in Los Angeles in coordination with the South Coast Air Quality Management District efforts and the other will be located at Georgetown University; the third prototype will use ethanol fuel and will be demonstrated in revenue service at PACE in Chicago. Data collection and evaluation of the operation and maintenance of these buses will be conducted. We will also initiate a project to examine the issues with regard to the safe use and storage of hydrogen as a fuel for fuel cell applications.

SENATOR SASSER: Will the Administration's budget request include this funding? To ensure the success of the project, will the Federal Transit Administration request that other electric vehicle FTA grant recipients fully cooperate with CARTA and ETVI?

ANSWER: FTA's FY 1994 budget request does include \$100,000 for the continuation of the project with the Electric Transit Vehicle Institute.

We are already seeing cooperative efforts between the four consortia members selected under the ISTEA program and ETVI. The Chesapeake Consortium has already discussed the application of their advanced electric vehicle powertrain in EV buses that CARTA is operating. The Advanced Lead Acid Battery Consortium (ALABC) has had preliminary discussions about providing rapid rechargers, battery systems and battery monitoring and management systems for demonstration in CARTA's EV buses.

SENATOR SASSER: In 1991, Congress appropriated \$1 million from the FTA's "New Construction" account for the Chattanooga downtown circular. Originally, the system was designed to utilize light rail. However, as the result of subsequent changes, the new system now utilizes electric vehicles. Unfortunately, the new project cannot utilize funds from the "New Construction" account. Would you support efforts to transfer the \$1 million from the "New Construction" to the "Bus and Facilities" account to complete the funding needs for Chattanooga?

ANSWER: The \$1 million in Section 3 new systems funds earmarked for the Chattanooga trolley system in the Conference Report accompanying the 1991 Appropriations bill has been transferred to the Section 3 bus category pursuant to language contained in the Conference Report accompanying the 1992 Appropriations Bill. This language directed FTA to transfer the \$1 million FY 1991 new start earmark for Chattanooga to the bus category, for the downtown circular. However, the ISTEA, which was passed subsequent to the 1991 Appropriations Act, directed that an additional \$1 million in FY 1992 Section 3 new start funds be made available for the trolley circular. FTA would support Congressional legislation to transfer the \$1 million earmarked for Chattanooga in ISTEA under the new start category to the bus account. This \$1 million would then be used in concert with the \$14 million in Section 3 bus funds earmarked for the Chattanooga trolley system in the 1993 Appropriations Conference Report.

SENATOR SASSER: Enactment of ISTEA provided many transit systems with the opportunity to make important capital improvements. However, many small urban systems, such as Knoxville Transit, still face the problem of not being able to maintain and operate the equipment. To assist local communities in meeting their particular transit needs, would FTA support allowing local discretion in the allocation of Section 9 formula funding among Capital, Planning, and Operating needs?

ANSWER: We believe that Federal transit assistance should be focused on investments in infrastructure. Thus,

we would prefer that funds be targeted primarily to capital projects, assuring that the condition of transit infrastructure is improved, for long-term benefits in productivity.

Federal operating assistance constitutes a relatively small share of the total revenue stream for transit authorities, typically less than one-fifth. However, despite the small percentage, it still represents a significant dollar amount that local officials would have substantial difficulty in replacing, especially given the current economic climate. Thus, while we believe that the present arrangement, under which there is a cap for use of formula funds for operating purposes, is appropriate, we believe that the current cap need not be reduced, as was proposed by the previous Administration.

It should be noted that Section 9 capital-only funds can be used for planning purposes. This permits operators the flexibility to support their planning programs with Section 9 capital funds, giving them some flexibility in the use of these funds.

SENATOR SASSER: The concept of intermodalism promises many constructive changes in the way we think about and meet the nation's transit needs. Much of the focus has been on larger areas with particular emphasis on the role of the Metropolitan Planning Organization (MPO).

What specific information can you provide the Subcommittee regarding how the ISTEA emphasis on greater MPO input particularly with respect to planning, is being implemented in practice?

ANSWER: One city where the Metropolitan Planning Organization (MPO) has been leading the intermodal planning effort is Portland, Oregon. The Metropolitan Service District (Metro--the MPO) leads a planning process that demonstrates a commitment to developing and implementing intermodal means of meeting regional mobility needs, with the cooperative participation of officials from three counties, a number of cities, the major transit operator, and the State of Oregon. In a region that anticipates substantial population and employment growth accompanied by strong market demand for residential, commercial and industrial development, the 1992 long-range transportation plan proposes a regional system that focuses on providing cost-effective mobility in interconnected travel corridors rather than serving the separate needs of modes such as autos and transit.

With this systemic perspective, the Portland plan encourages investments that result in corridor travel services combining freeway and arterial roads, transit trunk and feeder routes, and demand management techniques such as ridesharing, park and ride, central parking disincentives, and bicycle and pedestrian services. Light rail extensions and transit transfer centers will play important roles. Overall mobility, through the provision of alternative mode combinations, is the long-term goal. MPO planners emphasize the integration of modes by noting in the plan that "a lack of investment in any individual element or corridor will seriously affect the ability of the remainder of the system to provide adequate levels of transportation service."

In Minnesota's Twin Cities, the Metropolitan Council of the Twin Cities Area (the MPO) has initiated intermodal transit planning. By issuing a Regional Transit Facilities Plan in early 1992, the Council firmly established its role and created a blueprint for moving forward with high-occupancy vehicle and light rail transit

planning and construction, with the support of the Minnesota Department of Transportation, the Regional Transit Board and the region's cities and counties. The plan outlines alternatives for transit development in accordance with the regional mobility vision established in the long-range plan. It proposes a reorganization of transit services into a constellation of transit hubs and spokes to provide better service for suburb-to-suburb travel, reverse commute trips, and disabled individuals in developing areas. Hubs would serve as transfer points for passengers moving to and from local and express transit services, suburban circulators, carpools and paratransit.

SENATOR SASSER: To what extent can or will FTA work with other agencies to ensure that viable transit project needs are met in potential enterprise zones?

ANSWER: FTA will cooperate with other agencies, as it has done in the past, to ensure that transit services are provided as broadly as possible in areas where it is most needed. FTA funded a grant this year for the American Association of Enterprise Zones Educational Foundation, to perform a survey and profile of the transportation needs of enterprise zones. This will include a five case analysis of challenges and opportunities in developing innovative transportation options for enterprise zones, a compendium guide to federal, state and private transportation resources, and interagency forums to discuss ways to better streamline the delivery of transportation services. The effort will also include community transportation outreach workshops and a business developers' roundtable.

FTA is a partner in the DOT- DHHS Coordinating Council on Human Services Transportation, which seeks to coordinate public transportation services for clients of the many DHHS programs such as the Health Care Financing Administration, Administration on Aging, or the Agency for Native Americans.

FTA also has signed a Memorandum of Understanding with the Department of Housing and Urban Development, to facilitate funds transfers to provide reverse commuting services to public housing projects in the inner cities. Such an MOU could easily be used, (or updated to make it possible) to target enterprise zones for special transit projects.

Most recently, FTA initiated implementation of the ISTEA provision that establishes the JOBSLink program, to provide transportation to persons who are currently receiving public support for job training. JOBSLink will be demonstrated in cooperation with the DHHS JOBS program, which provides job training, interview and job search skills, and other services to its clients, but is prohibited from providing transportation to those same clients.

SENATOR SASSER: One of the recurring areas of disagreement between previous Administrations and a majority in Congress was the issue of operating assistance, whether severe cuts in assistance or its outright elimination. I know many of the Nation's mayors have met with President Clinton and have provided valuable insights about the role of urban America in the Nation's economic growth. What assurances have the Nation's mayors been given on this issue of operating assistance?

ANSWER: As noted, we believe that Federal transit assistance should be focused on investments in infrastructure. Thus, we would prefer that funds be targeted primarily to capital projects, assuring that the condition of transit infrastructure is improved, for long-term benefits in productivity.

However, we are aware that operating assistance represents a significant dollar amount that local officials have told us they would have substantial difficulty in replacing, especially given the current economic climate. Thus, while we believe that the present arrangement, under which there is a cap for use of formula funds for operating purposes, is appropriate, we believe that the current cap need not be reduced, as was proposed by the previous Administration.

SENATOR SASSER: The estimated cost of compliance with the Americans with Disabilities Act requirements is nearly \$1 billion per year. One third of the total, approximately \$310 million, will be for capital improvements. According to the American Public Transit Association, 40 percent of all the cost of ADA is for vans and buses.

What is the current procurement process for such vehicles and equipment? What is the potential employment impact for the manufacturing sector for these vehicles?

ANSWER: The current procurement process for the ADA vans and buses is the same as for any other grant-supported capital expenditure, except that a particular effort must be made to acquire accessible vehicles. Otherwise, the procurement follows standard FTA grant procedures, which include nationally-advertised competitive bids, appropriate local matching funds, compliance with Buy America regulations, Department of Labor section 13(c) certifications, etc.

The potential employment impact for manufacturers of ADA-required buses and vans, based on the U.S. Department of Commerce Regional Input Output Modeling System (RIMS-II) is approximately 31.6 job years per million dollars (direct, indirect, and induced) of final demand expenditure. Of these, 8.8 job years would be generated directly in bus and van manufacturing. In other words, \$310 million in capital expenditures would support approximately 2,728 direct job years and 7,068 indirect and induced job years, for a total of 9,796 job years.

SENATOR SASSER: ISTEA recognized that various regions of the country have different transportation needs. While the MPO will assume a larger role in planning urban project needs, rural communities don't have a comparable organizational body. What specific steps can FTA take to ensure that rural transit needs will be met?

ANSWER: As in the past, FTA looks to the states to assume responsibility for planning in nonurbanized areas, since there are no local planning organizations comparable to the MPO's. The state may use up to fifteen percent of its Section 18 apportionment for administrative activities, including planning. Other resources are also available for statewide planning, particularly the state's allocation under Section 26(a)(2).

Before ISTEA, there were no formal planning requirements for rural areas. Now, however, the state must include Section 18 and Section 16 (about half of which is spent in nonurbanized areas) in the Statewide Transportation Improvement Program (STIP). This will help ensure that rural transit needs are considered along with other transit and highway needs in both rural and urban areas.

Significant transfers of flexible funds to the Section 18 program are occurring, an indication that the states are including rural transit in their assessment of highway and transit needs.

To promote the inclusion of rural transit in the statewide planning process under ISTEA, FTA participated in a series of eight workshops for rural and small urban officials during 1993, cosponsored by the U.S. Departments of Agriculture and Transportation, the National Association of Counties, and the National Association of County Engineers.

QUESTIONS SUBMITTED BY SENATOR D'AMATO

SENATOR D'AMATO: Do you think operating aid should be expanded to help transit providers meet ADA requirements?

ANSWER: The Federal role in transit support is one of providing capital assistance. Our FY 1994 budget request is a 21 percent increase over the 1993 enacted level, which is more than enough to cover anticipated increases in capital costs as a result of implementation of the ADA. Local communities will thus have the flexibility to shift some of their funds to the increased operating costs.

The Americans with Disabilities Act is currently being implemented by transit properties nationwide. The provision of accessible fixed route service will not increase operating costs very much for most transit operators. However, FTA believes that the paratransit service provision is likely to increase operating costs significantly over the next four years, with the bulk of the increase taking place in cities of over 1 million in population.

SENATOR D'AMATO: Although I am not convinced that we now need a supplemental appropriation for economic stimulus, I am intrigued by the categories of funding that were requested by the Administration. Why does the proposed FY 1993 "Stimulus Supplemental" request the full authorized funding level for highways (an additional \$2.9 billion) but only partial funding for transit (an additional \$752 million -- a shortage of \$685 million from authorized levels)?

ANSWER: The transit level is made up of \$270 million in additional Section 3 discretionary bus funds and \$482 million in formula funds. These are funds which can be put to work quickly by transit operators to improve the conditions of existing transit systems. The entire ISTEA authorization was not sought because transit operators would not have been able to use these funds as quickly. In addition, it should be noted that some of the additional funds which would be made available by

increasing the Federal Highway Administration's Obligation Limitation for FY 1993 could be used for transit projects. About 2/3 of the funds authorized for FHWA in FY 1993 can be used for transit projects. By increasing the Obligation Limitation, these authorized funds could then be obligated in accordance with normal FHWA program eligibilities. Surface Transportation Program funds and Congestion Mitigation and Air Quality Program funds are the most likely authorizations which can be used for transit.

SENATOR D'AMATO: Why were no additional transit operating funds requested?

ANSWER: The purpose of these funds was both to stimulate the economy as well as to make permanent improvements in the Nation's infrastructure. Thus, we have targeted all of the stimulus to capital projects, assuring that the condition of transit infrastructure is improved, for long-term benefits in productivity.

SENATOR D'AMATO: I understand that there are about \$2.87 billion unobligated in the Section 3 discretionary capital account. How does this backlog break down by category of Section 3 funding, i.e., how much is new starts, rail modernization, or bus projects?

ANSWER: The unobligated balance of Section 3 discretionary capital funds as of March 31, 1993 is \$2.14 billion. These funds are distributed among bus, fixed guideway, and new start projects in the amounts shown below. In addition, there are \$21.6 million in Section 3 funds which have been set aside for oversight activities under Section 23, which have not been obligated. These are also shown below.

Bus.....	\$	341,322,599
Fixed Guideway.....	\$	554,699,319
New Starts.....	\$	1,223,145,846
Sec. 23 Set-aside.....	\$	<u>21,665,152</u>
Total	\$	2,140,832,916

SENATOR D'AMATO: What obstacles are faced by American companies in producing rail cars and systems? What can be done to address these concerns?

ANSWER: The basic obstacles facing American companies that wish to compete in the U.S. railcar market are 1) a small and very erratic market, which rarely exceeds 400 railcars per year; 2) the inability to "break into" foreign markets, where local suppliers are protected from U.S. competition; and 3) relatively high engineering costs for low volumes of railcars sold.

We are currently looking at options for addressing these obstacles.

SENATOR D'AMATO: Are foreign companies better positioned to produce replacement rail cars and buses, as well as advanced transportation equipment and systems, than domestic companies?

ANSWER: In Japan, the Ministry of International Trade and Industry (MITI) coordinates a nationwide cooperative network that ensures Japanese companies will give preference in purchases to Japanese manufacturers. In Germany, the national railway system buys German railcars, and the Trade Ministry cooperates with the Ministry of Transport to ensure that local and regional rail systems purchase German railcars as well. The German super-lightweight, low-floor bus, which features a carbon-fiber body, was designed by a consortium of German companies with government assistance. France and Canada are also highly supportive of their manufacturing industries.

The ability to rely upon their own, protected, markets gives these manufacturers the base from which to export to the U.S. as well as to other countries that do not have highly developed rail or bus manufacturing sectors. Government support for research and development allows these firms to market sophisticated, highly engineered railcars in the U.S. at lower cost than U.S. manufacturers can manage. This is primarily because the U.S. firm must attempt to recover engineering costs through the price of its first order - it cannot count on a follow-on order. In fact, throughout the 1980's, no railcar manufacturer has won two bids in a row from the same transit property.

SENATOR D'AMATO: What can be done to improve the Federal grant and procurement process to enable private business to contribute to the rebuilding of our transportation infrastructure?

ANSWER: We have already seen increased private investment in the form of public/private partnerships for urban development projects and innovative public financing of transit investments through use of leasing and municipal bonds. We are taking steps through such means as our leasing regulation and Cross Border Leasing Circular to assure that Federal program requirements do not pose a barrier to such innovation. In addition, we are developing technical assistance in the area of joint development and innovative finance to assure that State and local governments are aware of the possibilities for use of these innovations.

In addition, several reports issued recently have suggested additional measures such a creation of a National Infrastructure Bank or other government sponsored enterprise who would guarantee infrastructure bonds or engage in the securitization of transportation debt. These concepts are worthy of continued exploration.

SENATOR D'AMATO: What safeguards are needed to assure that grant monies are spent most effectively and appropriately?

ANSWER: The primary safeguards that assure that transit grant money is spent effectively and appropriately are the local planning and decision-making processes which are required by the Act and the joint planning regulations which implement it. A grant may not be approved unless the project is a result of these processes. The local metropolitan planning organization is required to evaluate projects based on transportation needs and to establish a project selection process which involves all State and local officials, including local elected officials and transit and highway operating agencies.

GENERAL ACCOUNTING OFFICE

QUESTIONS SUBMITTED BY SENATOR LAUTENBERG

TRANSIT NEEDS REPORTS

Question. In the highway area, the highway and bridge needs as measured by the Federal Highway Administration are viewed as credible by contractors and State highway administrators. Can we hope for such commonality in the transit area? If not, why not?

Answer. Yes, greater commonality among needs reports is possible and is already underway through FTA's improvements in its recent needs report. In addition, development of new data sources, such as the public transportation management systems, may lead to increased commonality if FTA, AASHTO, and APTA use information from these databases for their projections.

Question. Are the differences in the estimates based on the complexity of the issues, the lack of good data, the differences in how to define "needs", or on the different (political) perceptions of the Federal role regarding transit?

Answer. Transit is a locally determined and managed service and there is no standard definition of need. The estimates varied because each organization defined transit needs differently by including or excluding certain cost elements or by making different assumptions to determine costs. The most significant difference was that AASHTO and APTA included operating needs while FTA did not. Smaller differences also resulted over the treatment of complex issues and the use of different data sources. However, all three organizations presented gross needs estimates, rather than limiting their projections to just the Federal share.

Question. If FTA were to make the short-term changes you suggest to their methodology and assumptions, will their reports on further needs be more accurate?

Answer. Making the short-term changes we suggest would help to ensure that the projections are more reflective of potential future costs. However, FTA still needs to move towards longer term solutions such as using the public transportation management systems (PTMSs) and state and local transportation plans. FTA efforts now, in developing the regulations for the PTMSs and new plans, can help ensure that better data are available to develop more accurate needs projections in the future.

AMERICAN PUBLIC TRANSIT ASSOCIATION
QUESTIONS SUBMITTED BY SENATOR LAUTENBERG
BEST REPRESENTATION OF TRANSIT NEEDS

SENATOR LAUTENBERG: Do you believe that APTA's projections are the best representation of transit needs? If so, why?

ANSWER: The American Public Transit Association's (APTA) projections of transit needs are the best available representation of transit needs. According to the General Accounting Office (GAO) Report *Mass Transit, Needs Projections Could Better Reflect Future Costs*, released at the Subcommittee hearing, "APTA's report presented the most robust projection of future needs by including costs for all projects that transit operators stated were needed to meet their communities' transportation goals." APTA's projections were the only projections based on each community's transportation needs, rather than a constrained definition of needs that limited the expansion of transit service.

APTA's needs, however, are still less than real needs according to the GAO. Their report noted that APTA's projection was made before the requirements of the Clean Air Act and Americans with Disabilities Act were known, therefore these mandates were not included; that needs for only a limited amount for 16(b) operators were included; and that APTA's members tended to underreport their needs. In regard to the underreporting of needs, the GAO stated that, "While it is true that APTA presented the greatest needs estimate, we were told by state and local officials we visited that they did not provide APTA with an unconstrained list of projects. Transit operators stated that they did not provide an unconstrained list of needs since their planning efforts reflect financial constraints. Nevertheless, APTA's projection was the largest of the four projections studied."

Reliance on only federal government generated needs assessments could result in an inadequate projection of needs. The level of needs projected by federal government studies might be restricted by the philosophy of the administration in office. Projections may be influenced by fiscal restraints and the need to hold down federal spending. There should always be an independent source of needs information based on independently established goals. We feel that APTA, as a trade association, is a good independent source of needs information because APTA must answer to its membership which includes the actual providers of public transportation, local and regional government units, and state government agencies.

BASIS OF TRANSIT NEEDS PROJECTIONS

SENATOR LAUTENBERG: Do you agree with the GAO's recommendations that we should use the public transportation management systems' and state transportation plans for the basis of transit needs projections?

ANSWER: The development of public transportation management systems and state transportation plans should provide better data for the

development of needs assessments. The Public Transportation Facilities and Equipment Management Systems (PTMS) should provide a comprehensive and current data base of the physical condition of transit assets. Statewide Transportation Plans will require long-term intermodal needs assessments that should foster the inclusion of transit in needs projections. Both of these programs are in the proposed rule making stage of development. Comments on proposed rules are due by May 3, 1993. APTA is currently in the process of developing comments on the proposed rules and will provide these comments in conformance with the rule making process.

These information sources potentially have several limitations. The GAO points out that it "will take several years to develop and implement these changes." Therefore, in the short-run other sources must be used to determine transit needs. The PTMS and Statewide Transportation Plans are expected to provide background data and needs based on local and state assessments. They will not, however, provide a national policy perspective as a basis for determining those needs. The national policy perspective may be the determining factor in the scope of a national needs statements. Needs projections would be different under a national goal to double transit ridership than they would be under a goal of maintaining current services. Clean air goals, enhanced service, local factors or resources, and other objectives would also influence needs assessments. APTA feels it will always be important to consider independent needs projections that might confirm or might conflict with federally projected needs due to variation in policy and goals.

We are also concerned that the submission of local need statements that describe transit needs will not necessarily result in all transit needs being included in national needs assessments. Many areas have submitted locally determined new start projects to the federal government and found these projects not to be supported by the FTA and amounts for these projects not included in FTA needs assessments.

COSTS OF NEW REPORTING PROCESS

SENATOR LAUTENBERG: Do you believe that using these processes would be an additional burden on transit operators? If so, why?

ANSWER: Because the regulations guiding the PTMS and Statewide Transportation Plans programs are still being developed, and the procedures for data collection or data to be collected have not been defined, we are unable to determine the additional cost that will accrue to transit operators. We encourage the coordination of data collection with existing reporting requirements in order to minimize additional costs.

IMPROVING DATA COLLECTION

SENATOR LAUTENBERG: In addition to the recommendations made by GAO, what suggestions do you have for improving the collecting of data, the reporting of that data, and the resulting projection of needs?

ANSWER: The collection of more and better data without a defined policy direction will not necessarily result in better information for decision making. The needs of each program funded by federal surface transportation legislation, if taken independently, will surely far exceed even the most generous projection of available funds. Improved data must be collected and analyzed in the context of a definite federal transportation policy with clear goals toward pollution reduction, energy savings, improved mobility and safety, job creation, and resource conservation to achieve national goals. The federal policy in place when data is collected has a significant effect on the type of data that is collected, and a determining effect on the specific questions that are asked. When the Congress analyzes this data, it will only be able to answer questions for which data has been collected.

Data should be collected multi-modally as well as for individual modes. Data should be collected on the movement of people and goods as well as on the movement of vehicles. Transportation is more than just highways, automobiles, buses, and rail cars. Good transportation is the most effective and efficient movement of people and goods in the context of national goals and available resources. Needs should not be measured in a closed single mode context without reference to the effect meeting those needs will have on social, economic, political, and natural environments.

Data should also be collected on the goals local and state plans are designed to achieve, not just on the cost of those plans. It may be useful for the federal government to merge these state and local plans into a program that meets national as well as state and local needs.

DEFERRING CRITICAL CAPITAL MAINTENANCE

SENATOR LAUTENBERG: In his testimony, Mr. Mead said that transit operating expenses are substantial, and are costing more than three times the amount spent on capital items. This concerns me, and seems to imply that maybe we are possibly deferring critical capital maintenance and capital purchases, and not making investments as needs. Do you feel this is an accurate conclusion?

ANSWER: Not enough funds are being spent on capital because not enough funds are available, not because funds are being diverted to operations. The amount spent on capital is not a direct function of the amount spent on operating, there is not a dollar for dollar substitution, and transit operating expenditures include items that would be considered capital in other accounting systems.

A large portion of capital maintenance expenditures by transit agencies are accounted as operating expenses. Capitalized maintenance costs would only include major upgrade or rehabilitation projects such as those funded by Section 3 Fixed Guideway Modernization grants, bus rehabilitation or remanufacturing, rail rolling stock overhaul, or associated capital items which cost no less than 1/2 of one percent of the fair market value of the rolling stock on which the item will be used. Otherwise, maintenance costs are accounted as operating costs. In 1991, vehicle maintenance costs accounted for 18.1 percent of all transit operating expenses, and non-vehicle maintenance costs accounted for 9.6 percent. Direct maintenance costs were therefore 27.7 percent of all transit operating costs.

Purchased transportation was 10.0 percent of all operating costs and includes a non-reported percentage of maintenance costs of the purchased transportation service. Measuring only direct costs where maintenance costs are identifiable shows that maintenance costs are actually 30.8 percent of operating costs. Fuel costs accounted for another 3%. In addition, federally required service under the ADA, particularly paratransit services, increased transit operating costs dramatically.

In 1991, transit operating costs (excluding reconciling items) were \$16.785 billion and capital revenues were \$5.485 billion, for a total of \$22.270 billion. Only capital revenue data, not capital expenditure, has been reported to the FTA because of the Section 15 accounting system design. Of the \$22 billion total, 24.6 percent is capital which is in agreement with Mr. Mead's testimony. If, however, \$4.654 billion in maintenance costs that are accounted as operating costs were considered capital costs, the capital portion would rise to 45.5 percent.

ADEQUACY OF FLEXIBLE FUNDING

SENATOR LAUTENBERG: The FTA Administrator told this subcommittee last year that the new flexibility allowed in ISTEA would make available a much larger pot of money to transit than just the \$3 billion in Federal transit assistance. What did transit actually gain in FY 1993 from this new flexibility?

ANSWER: Through January 31, 1993, \$132.5 million in FY 1993 flexible funds had been transferred from the FHWA to the FTA. The FTA projects total transfers and obligations in excess of a preliminary estimate of \$235.7 million by the end of FY 1993. In FY 1992 a total of \$302.4 million was transferred of which \$243.3 was obligated by the end of FY 1992.

These transferred funds have met important transit needs throughout the nation. The transferred amount, however, increased transit funding only 8.0 percent above appropriations in FY 1992, and is projected to increase funding only 6.2 percent above appropriated levels in FY 1993. Transit agencies are working with their local and state governments to insure they receive transfer funds for vital projects in their areas, but according to GAO testimony before the Subcommittee on Transportation on March 31, 1993, "a variety of barriers stand in the way of states and localities thinking cross-modally." The GAO supports federal help to overcome these barriers, including development of cross-modal comparison criteria and improved analytical tools for assessing the impacts of transportation investment choices.

We are confident that an increasing level of flexible funds will be used for transit purposes, but we also recognize that flexibility will likely be inhibited by the fact that transportation needs for all modes exceed available resources. We would also note that the ISTEA processes are a dramatic departure from past practices, and that effective implementation of the new law will therefore be gradual and slower than many would like. For instance, joint planning regulations are still being developed almost two years after ISTEA's enactment. Proposed regulations requiring conformity with congestion management plans (which would prohibit construction of additional single occupant vehicle (SOV) lanes without concurrent offsets) are not scheduled to take effect before 1995 and would allow for a slower phase-in of even these plans.

AMERICAN ASSOCIATION OF STATE HIGHWAY
AND TRANSPORTATION OFFICIALS

QUESTIONS SUBMITTED BY SENATOR LAUTENBERG

ACCURATE DEPICTION OF TRANSIT NEEDS

SENATOR LAUTENBERG: The Federal Highway Administration annually publishes a report on the conditions and performance of the highways and bridges of this country.

Question. Why do you believe that the numbers produced by FHWA are readily agreed to and accepted, while the FTA's projections are not given a great deal of credibility?

Answer. The FHWA gathers its data from the States, through a rigorous process that has been developed over the years. The collected data is the same as is usually employed by States in their own analysis and programming, which are also rigorous processes. The data collected by the FHWA is then analyzed according to procedures with which the States are familiar. The result is that the FHWA results are generally accepted by the States, and by the highway industry.

In past years, the FTA data collection process was not strong, and there was not full agreement on what data should be collected. This situation has improved considerably, and current need estimates are receiving a higher acceptability than in the past. Part of the reason why the FTA data was suspected by many over the past 12 years was the perception that the Administration was either anti-transit or luke warm to public transportation, and the feeling that needs were therefore being underestimated. Currently, this perception has generally abated.

Question. Do you believe that it is a worthwhile goal to have the Federal Highway Administration and the Federal Transit Administration produce a consolidated report that estimates the surface/passenger needs of this country?

Answer. Yes, especially under the ISTEA. The ISTEA provides flexibility among the surface modes, attempts to establish a level playing field, and features intermodal planning. Accordingly, it makes sense to produce a consolidated report.

Question. Do you believe such a report could accurately depict the economic development and cost trade-offs between highways and transit?

Answer. Over time, probably. But first a better understanding of the linkage between transportation and economic development need to be determined, and agreement would need to be reached on the relative "costs" of highways and transit. The costs to be included for both modes would need to be agreed upon, after which credible methods for estimating those costs would be needed. Only then can the trade-off issue be properly addressed.

AASHTO has been sponsoring research into the economic linkages between highways and economic development, and progress is being made. Some States have also done research of this type.

SUBCOMMITTEE RECESS

Senator LAUTENBERG. The hearing is now recessed. This subcommittee's next hearing is March 17, next Wednesday, in room SD-192. We are going to hear from the National Transportation Safety Board.

[Whereupon, at 12:22 p.m., Thursday, March 11, the subcommittee was recessed, to reconvene at 10:05 a.m., Wednesday, March 17.]

DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1994

WEDNESDAY, MARCH 17, 1993

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:05 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Frank R. Lautenberg (chairman) presiding.

Present: Senator Lautenberg.

NATIONAL TRANSPORTATION SAFETY BOARD

STATEMENT OF CARL W. VOGT, CHAIRMAN

ACCOMPANIED BY:

TIMOTHY P. FORTÉ, DIRECTOR, OFFICE OF AVIATION SAFETY

BARRY M. SWEEDLER, DIRECTOR, OFFICE OF SAFETY RECOMMENDATIONS

OPENING REMARKS

Senator LAUTENBERG. Good morning. I call the Subcommittee on Transportation of the Appropriations Committee to order.

This morning, we are going to spend some time reviewing some of the portfolio of the National Transportation Safety Board [NTSB]. I particularly want to discuss the tragedy of the loss of young lives across this country where prevention is, if not totally, at least partially possible—we could save more lives than we do.

Next year we are going to be celebrating the 10th anniversary of the National Minimum Drinking Age Act, which was passed in 1984. I am very proud of my role as the Senate sponsor of this important law. It serves to motivate all 50 States to raise their drinking age to 21, and it is estimated that, since this law has been enacted, it has saved over 12,000 lives.

But the numbers really do not tell the whole story, do they, when you think of people under 21—children of 14, 16, and 17 years of age—whose families will not have to mourn and experience the loss of a child, brother, or sister. This drives home the personal value of enactment of a law that sometimes can get submerged in statistics, but when you talk about 12,000 young lives saved, it makes me proud to have been the sponsor of that legislation.

However, it is not time to congratulate ourselves. There continues to be an appallingly high number of fatalities stemming from illegal drinking by underage youth. We continue to see more than

1,400 deaths a year caused by underage drunk drivers. Forty percent of all underage fatalities on our Nation's roads had alcohol in their bloodstreams.

Even more disturbing is that we have begun to see a reversal in the progress we have made in lowering the percentage of teenage automotive fatalities that result from drunk driving. The human tragedy of teenage drunk driving is measured by too many funerals of too many bright, promising young people who failed to make the right decision about drinking and driving. Too many funerals of law-abiding citizens who were innocently victimized by drunk drivers.

As if this tragedy were not enough, the real tragedy is that so many of these deaths are avoidable. The Surgeon General, in reviewing the efforts by States to prevent teenage drunk driving, concluded that the National Minimum Drinking Age Act is riddled with "loopholes, laxity, and lip service," to quote.

Today, enforcement of the National Minimum Drinking Age Act is a cruel joke. Almost 10 years after the act was put into law, we still find several States that do not prohibit minors from attempting to purchase alcohol or possessing it. In many States, it is not illegal for teenagers to use fake ID's to purchase alcohol, but even these loopholes are largely irrelevant when the principal law prohibiting the sale of alcohol to minors is ignored across the country.

The Insurance Institute for Highway Safety found that 97 out of 100 underage youths who attempted to purchase alcohol in the District of Columbia were successful. In Westchester County, NY, a county known for its affluence, 80 out of 100 kids were successful in obtaining alcohol under the age of 21.

Now, I did not attach my name to this legislation almost 10 years ago just to see its enactment. It also has to be enforced by the States involved and by the alcohol retailers and the enforcement authorities. I plan to introduce legislation in the coming months to put some teeth into the National Minimum Drinking Age Act, and I plan to see it enacted prior to the act's 10th anniversary.

This morning, we look forward to hearing testimony from the Chairman of the National Transportation Safety Board. The Board recently released a comprehensive study on this issue and made several recommendations to the Nation's Governors on steps to address drinking and driving by underage youth. It was hard to miss the story on the front page of the Washington Post a few days ago—March 3, actually—in which was the fact that there is insufficient enforcement to make the law really work as effectively as it might.

While the Board's recommendations center on legislation to be enacted by the Governors to address this problem, I hope to focus this morning on how the Federal Government might encourage or even compel action by the States to implement this legislation. More importantly, I hope to pursue ways that we can encourage or compel the States to enforce the laws that are already on the books. We are also going to hear testimony about some of the other critical safety issues the Board is considering including aircraft safety, winter weather conditions, and marine safety, and finally I

will have some questions for the Board on their fiscal year 1994 budget request.

PREPARED STATEMENT

I will, at this point, insert Senator D'Amato's and Senator Sasser's opening statements in the record. They are attending a Banking Committee hearing, and will be unable to join us.

[The statements follow:]

STATEMENT OF SENATOR D'AMATO

Mr. Chairman, I join you in welcoming Carl Vogt, Chairman of the National Transportation Safety Board, to today's hearing on NTSB's fiscal year 1994 budget request. Accompanying him is Terry Baxter, NTSB's Managing Director.

The NTSB is requesting \$42.2 million and 384 full-time equivalent [FTE] positions for fiscal year 1994. This would be an increase of 27 FTE's and \$6.2 million over the fiscal year 1993 funded level.

NTSB performs vital safety investigations of major transportation accidents, and promotes safety by issuing safety recommendations. Although it has no rulemaking authority, its safety recommendations are seriously reviewed by lawmakers, government agencies and the transportation industry.

The NTSB's ability to function as an independent and objective overseer of transportation safety across the modes is vital. I appreciate the importance of providing NTSB with adequate funds to perform its important work and look forward to hearing from today's witnesses.

STATEMENT OF SENATOR SASSER

Good morning. Today's hearing focuses on the important work of the National Transportation Safety Board. Transportation safety is the critical linchpin to the efficient movement of people and goods. The NTSB's independent recommendations provide a focus and gauge to daily transportation safety decisions that occur on the Nation's roads, airways, railways, and waterways.

The National Transportation Safety Board's primary function is to shed light on the "big picture," the most catastrophic of transportation related accidents. Together with extensive regional investigations, the NTSB provides critical input for improved safety in all modes of transportation. Through its exhaustive attention to the minutest of details, the National Transportation Safety Board offers preventive insights that can save lives and reduce the extent of property damage from transportation related accidents.

Accidents take a cumulative toll on the Nation's overall economic growth and productivity. When a transportation system fails, the cost to the Nation, from lost wages, medical and insurance expenses adds up into the billions of dollars. The NTSB's after the fact investigations and recommendations are, therefore, vital to the Nation's economic well-being.

Human error or equipment deficiencies are frequently cited as causes of most transportation malfunctions. The NTSB effort to determine the cause of accidents can extend but so far. It is up to the affected transportation modes to make vital improvements to its safety standards. Where lives and property are at stake, the transportation community can ill afford to cut safety corners. The importance of the NTSB's role in transportation safety recommendations looms that much larger, ensuring that today's tragic events are not repeated tomorrow.

I look forward to hearing the testimony.

STATEMENT OF CARL W. VOGT

Senator LAUTENBERG. With that, we invite the witnesses to testify. Chairman Vogt, we are glad to see you here. We would ask that you summarize your testimony and we will put the full testimony in the record, and I ask you now to proceed.

Mr. VOGT. Thank you, Mr. Chairman. I am not only pleased to be here, but I am privileged to be here representing the National Transportation Safety Board.

With me at the table on my left is Mr. Tim Forté, Director of our Office of Aviation Safety, and on my right is Barry Sweedler, Director of our Office of Safety Recommendations, and a person who I think is known to you as the godfather of our report on teenagers and alcohol.

TWENTY-FIFTH ANNIVERSARY

Last year was the 25th anniversary of the National Transportation Safety Board, and we are very proud of our record. We think that there is no question that its activities have contributed to significantly raising the level of transportation safety in the United States, and I might add in other nations as well.

As a result of more than 50,000 Safety Board accident investigations in the past quarter century, 9,000 recommendations to reduce loss of life and accident recurrence were issued to Government agencies, private companies, trade associations, and others covering a wide variety of safety improvements.

Eight out of ten of these recommendations have been implemented over the years, a record of which I think the Board is justifiably proud. Through the Board's efforts and those of this committee and others, a safer environment for transportation, we think, has clearly been established.

AVIATION ACCIDENTS

An example of what has happened over the past 25 years involves aviation. According to our records there were 52 aviation accidents and 226 fatalities in the United States in scheduled passenger service in 1967, the Safety Board's first year. Considering that there were some 134 million passengers flown that year over 2.1 billion miles, passenger aviation miles, it was not a bad record.

Comparatively speaking, last year there were 40 accidents in the United States involving 52 passenger deaths in scheduled service. Yet more than three and one-half times as many people flew in scheduled airline service over twice as many miles as in 1967.

HIGHWAY ACCIDENTS

In surface, the news is also encouraging. Although the final figures are not yet available from the National Highway Traffic Safety Administration, 1992 may mark the first time in modern years that fewer than 40,000 people died on our highways, railroads, and waterways. Still a high and tragic number, but relatively speaking, marking progress.

These achievements, of course, were only possible through the work of many, many people, and it is always our privilege, Mr. Chairman, to be here before you as a friend and leader in the transportation safety field. We feel that we share a kindred spirit.

ACCIDENT AND RECOMMENDATION RESPONSE

There is a lot left to be done, and that is what we really would like to address with you. We need, for example, internally to reduce the amount of time it takes from launching a "go team" to the actual adoption of an accident report by the Safety Board.

We need to reduce the amount of time it takes for our recommendations to be implemented. We need to retain our ability to respond to upcoming transportation challenges, particularly in an age when there is a technological revolution going on in almost every phase of transportation. For example, high-speed trains, the use of new composite materials, the advent of intelligent highways, and the development of new technologies across the Board are going to put new demands on the Board and all Government agencies involved in transportation safety.

Of particular importance, it is imperative that we maintain the highest level of technical competence and expertise. This translates into people. The strength of this agency is its people and their expertise, and the ability to retain them in rewarding and satisfying careers.

We are committed to this goal. We know this committee is, we know you are, sir. We look forward to working with you and to answering your questions this morning. Thank you.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much, Mr. Vogt. As I stated earlier, we have your prepared statement and it will be made part of the record.

[The statement follows:]

STATEMENT OF CARL W. VOGT

Chairman Lautenberg, Senator D'Amato and members of the Subcommittee. I am very pleased to be here this morning to represent the National Transportation Safety Board.

Last year marked the 25th anniversary of the National Transportation Safety Board (NTSB), and we believe there is no doubt that the Board has significantly raised the level of transportation safety in the United States, and in many other nations, during its existence. This has been accomplished by thorough accident investigations and timely, well considered safety recommendations to correct the deficiencies in our transportation system that were identified in these investigations.

As a result of more than 50,000 Safety Board accident investigations in the past quarter-century, we have issued more than 9,000 safety recommendations covering a wide range of safety improvements. Safety studies have also been undertaken in order to examine problems from a broader, more systemic perspective.

Yet ultimately, the Board's success rests on the acceptance of its safety recommendations. Safety recommendations are our most important product, and they are vital to the Safety Board's basic role of accident prevention since they are the lever used to bring about changes and improvements in the safety of the nation's transportation system.

"MOST WANTED"

While all the recommendations made by the Board will, if implemented, improve safety and help prevent accidents, some are so important that the Board gives them greater emphasis than others. The Board's "Most Wanted" list, a copy of which is attached at the end of the testimony, is the vehicle employed to stress recommendations having the greatest potential for saving lives. There are currently 17 topics on the list:

- boating while intoxicated
- administrative revocation of drivers licenses
- airport runway incursions
- positive train separation
- aircraft collision avoidance in airport terminal areas
- fishing vessel safety
- mandatory seatbelt use laws
- adjustable upper anchor point for lap/shoulder automobile seatbelts
- safety standards for railroad tank cars carrying hazardous materials

- fatigue and work hour schedules for transportation workers
- school bus safety
- structural fatigue testing of aircraft
- passenger vessel safety
- uniform industry-wide policy on alcohol/drug testing
- runway stopping performance of transport airplanes
- heavy commercial truck safety, and
- pipeline excess flow valves

The Board takes many actions to stress these necessary transportation safety improvements, and to encourage recommendation recipients to implement them. Once implemented, the Board acknowledges the positive development.

Last year, for example, the Board voted to remove the issue of Ground Proximity Warning Systems (GPWS) for commuter airplanes from the "Most Wanted" list after the Federal Aviation Administration (FAA) issued final rules regarding this matter. Even though GPWS is no longer on the "Most Wanted" list, the issue has not been abandoned and we continue to monitor the FAA's proposal.

The removal of a safety item from the Boards "Most Wanted" list is just one measure of the Boards impact. Another measure is the overall acceptance rate for Board safety recommendations. Eight out of ten of all safety recommendations issued over the years have been implemented, resulting in a safer environment for every traveler. We believe the Safety Board can rightfully take satisfaction in its role as an advocate for transportation safety—and pride in the results we have seen in these last 25 years.

TRANSPORTATION FATALITIES IN 1992

America's transportation system again showed safety improvements in 1992 as fewer accidents and deaths were reported compared to previous years. Although only preliminary data is available at this time, it would appear that in 1992 fewer than 40,000 people died on our transportation systems. Transportation-related fatalities in 1991 totalled 43,554, compared with 47,014 in 1990.

In aviation, preliminary statistics show the number of fatalities aboard commuter airplanes dropped to 21 in 1992—from 77 a year earlier. Large commercial carriers registered four fatal accidents and 33 fatalities in 1992, compared to the same number of fatal accidents and 50 deaths the year before. The 33 fatalities represent the lowest number of deaths since 1986, when five persons died in that category.

In general aviation, although there were fewer fatal accidents (408), more people (812) were killed in 1992 than the previous year. The comparable numbers for 1991 were 414 fatal accidents and 746 deaths.

Because major aviation accidents happen so seldom, the number of fatalities can fluctuate from year to year. Even in high fatality years, such as those experienced in the late 1980's, relatively few accidents occur. We are convinced that the Safety Boards efforts through the years have contributed to this impressive record.

1992 SUMMARY

Last year, 353 safety recommendations were issued as a result of 20 major and 2,290 regional Board investigations, as well as nine safety studies and special investigative reports.

Although I cannot discuss every investigation and recommendation, I would like to highlight some of the Board's work.

AVIATION

AIRPLANE DEICING

Almost a year ago today, USAir flight 405 crashed on takeoff on a snowy evening at New York's LaGuardia airport 35 minutes after its second deicing. Twenty-seven of the fifty-one people on board died.

Last month, the Safety Board determined that the probable cause of the accident was the failure of the airline industry and the Federal Aviation Administration to provide flightcrews with procedures, requirements and criteria compatible with departure delays during icing and snowy conditions. Also listed in the adopted probable cause statement was the decision by the flightcrew to take off without positive assurance that the airplane's wings were free of ice accumulation after 35 minutes of exposure to precipitation following the second deicing. Airframe icing, even in minute amounts, can jeopardize an airplane's ability to fly, and extreme care must be used by crewmembers when assessing wing ice contamination.

This accident prompted both the FAA and others in the aviation community to focus renewed attention on the problems confronting flightcrews operating in winter conditions. Following an international symposium on airframe icing in May 1992, the FAA imposed requirements on airlines to define and implement deicing procedures, and instituted changes in air traffic control procedures and airport operations to minimize the time that airplanes will be exposed to icing conditions following deicing. At the same time, the industry is developing technologies to detect the presence of minute amounts of frozen contamination on the upper surface of airplane wings.

The Safety Board issued additional recommendations directed at operational procedures, air traffic delays during icing conditions, the inspection of aircraft for possible ice contamination, and the composition of deicing fluid used on certain planes.

UNITED AIRLINES/COLORADO SPRINGS, CO

Calendar year 1992 marked only the fourth time in the Safety Board's history that we were unable to conclusively determine the probable cause of a large air carrier accident. On March 31, 1991, in clear skies and at an altitude of approximately 1,000 feet above the ground, United flight 585 suddenly rolled to the right, pitched nose down to reach a nearly vertical attitude, and impacted the ground. All 25 persons aboard the flight were killed.

The two most likely events that could have resulted in the accident were a malfunction of the aircraft's lateral or directional control system, or an encounter with an unusually severe atmospheric disturbance. Although anomalies were identified in the airplane's rudder control system, none would have produced a rudder movement that could not have been countered by the airplane's lateral controls. The most likely atmospheric disturbance to produce an uncontrollable rolling moment was a rotor produced by a combination of high winds aloft and the mountainous terrain at Colorado Springs.

After a 20-month long investigation, and despite exhaustive efforts by the investigative team, the Board could not identify conclusive evidence to explain the cause of the accident.

This was one of several major investigations that have been hampered recently because the aircraft were equipped with old, 4-parameter flight data recorders. We believe the failure to require more state-of-the-art recorders is a false economy when it prevents us from determining what happened to a plane like the Boeing 737, one of the workhorses of the U.S. airline fleet.

The FAA, as a result of Board recommendations, has agreed to initiate a two-phase program to document and analyze potential meteorological threats to aircraft operating in the Colorado Springs area, and develop a meteorological aircraft hazard program for airports in or near mountainous terrain.

SIGHTSEEING FLIGHT OPERATIONS

The sightseeing flight industry carries almost 2 million passengers a year in the United States and, since 1986, the Safety Board has investigated 11 sightseeing flight accidents resulting in 76 fatalities. All of the fatalities were either in Hawaii or near the Grand Canyon.

Recently the Safety Board made several recommendations to improve the safety of sightseeing flight operations as a result of our investigation into a fatal sightseeing accident in Hawaii last year in which nine occupants of a Scenic Air Tours plane crashed.

The absence of specialized oversight of air tour operations by the FAA was an issue in the investigation, and the Safety Board has recommended the establishment of a special regulatory classification for commercial sightseeing flights.

In the accident investigation, it was also discovered that the pilot had previously applied for employment at another Hawaiian airline but his application had been rejected after preemployment screening found that he had misrepresented his employment history. Preemployment screening obviously can protect the public from unqualified pilots, and the Board believes the FAA should require commercial operators to implement such programs. Previous recommendations that the FAA require substantive preemployment screening were reissued.

A January 1993 fatal crash of a helicopter sightseeing flight into the ocean near the Hawaii Volcanoes National Park is also currently being investigated. The Safety Board is also working closely with the Canadian Government in its investigation of a midair collision between U.S. and Canadian sightseeing aircraft over the Niagara Falls on September 29, 1992.

UNITED AIRLINES FLIGHT 811/BOEING 747

The Safety Board is an acknowledged authority in piecing together the reasons accidents occur, and determinations of probable cause are based on exhaustive investigation. When pertinent material is uncovered, the Safety Board will reopen investigations.

Such was the case in the accident that occurred February 24, 1989, in Honolulu, Hawaii, involving United Airlines flight 811. The airplane experienced an explosive decompression after taking off from Honolulu with three flightcrew, 15 flight attendants, and 337 passengers aboard. The accident resulted in nine fatalities.

With the assistance of the U.S. Navy, the Safety Board recovered the plane's cargo door from the three-mile deep floor of the Pacific Ocean more than a year and a half after the accident, and several months after the accident report was adopted. The new evidence obtained through examining the recovered door prompted the Safety Board to revise its original report to delete the original report's reference to the cargo door being improperly latched. But the Safety Board reiterated its belief that a deficiency in the design of the cargo door contributed to the accident, and left standing three safety recommendations relating to B-747 cargo door.

FLIGHT ATTENDANT TRAINING AND PERFORMANCE

While commercial airline accidents are rare, there are, nonetheless, a number of emergency situations that passengers may face in flight.

In some emergencies, passengers and crewmembers have sufficient time to prepare themselves for the situation. More often than not, an emergency occurs with little or no warning, and it may take place in combination with other abnormal situations, further compromising safety. For example, an encounter with severe air turbulence may cause injuries to the crew and passengers; and a bomb threat, a mechanical failure, or an in-flight fire can result in an immediate evacuation upon landing. In these cases, we depend on flight attendants to provide the most immediate assistance to passengers.

In several recent accident investigations, the Safety Board found that although flight attendants provided valuable assistance to passengers during emergency situations, they did not always follow their air carrier's approved emergency procedures or perform their duties in accordance with their training. In two of the 24 evacuation cases cited in a special investigation report adopted by the Board in 1992, the actions of some flight attendants contributed to an increase in the number of passenger injuries.

The Safety Board is concerned that these same actions in other situations could have disastrous results, and that flight attendant training may not adequately prepare flight attendants for actions that they may be required to take.

As a result of our special investigation, the Safety Board made more than a dozen safety recommendations to the FAA that are intended to improve flight attendant training and performance during emergency situations. The FAA response to these recommendations is currently being evaluated.

ANNISTON, AL/GP EXPRESS

On June 8, 1992, GP Express flight 861 crashed on its final approach to Anniston Metropolitan Airport in Alabama. Two crewmembers and four passengers were on board. The captain and two passengers were killed, and the first officer and the two remaining passengers suffered serious injuries. GP Express had just begun operating the route three days before the accident. In a recently adopted report, the Safety Board determined the probable cause of the accident to be the failure of GP Express' senior management to provide adequate training and operational support for the startup of the company's Southern operation which resulted in the placement of an inadequately prepared captain in initial revenue passenger service with a relatively inexperienced first officer. The failure of the flight crew to use approved instrument flight procedures which resulted in a loss of situational awareness and terrain clearance was also cited in the probable cause statement adopted by the Safety Board.

ON-GOING MAJOR AVIATION ACCIDENT INVESTIGATIONS

On June 16, 1992 a Cessna 402C operated by Adventure Airlines, Inc. crashed shortly after takeoff ½ mile south of the Grand Canyon West Airport. The pilot and nine passengers were fatally injured. Safety Board investigators recovered three videotapes from cameras among the personal effects in the aircraft wreckage, two of which recorded portions of the accident flight. Although the investigation continues, the video evidence and wreckage examination led the Board to issue urgent rec-

ommendations to the FAA and Cessna Aircraft Corporation to revise the minimum fuel loads for takeoff and flight for all Cessna 402C's and other applicable Cessna 400 series aircraft. Inspections of all inlet float valves for wear were also called for by the Board.

Although a formal response from the FAA has not been received, an Airworthiness Directive was issued requiring fabricating and installing placards that specify higher unusable fuel levels and higher minimum fuel levels for takeoff for each main tank.

On July 30, 1992, TWA flight 843 crashed at JFK International Airport when the flightcrew elected to abort the takeoff, resulting in an emergency evacuation through the forward doors. The airplane was destroyed by fire. The Safety Board is examining pilot training in crew coordination for the takeoff phase, and airline maintenance quality assurance. The Board hopes to determine the probable cause from this investigation by the end of March.

PEGASUS LAUNCH INVESTIGATION

On February 16, 1993, the Department of Transportation requested that the Safety Board initiate an investigation into the February 9, 1993, launch of a Pegasus vehicle from an Air Force B-52 bomber by Orbital Sciences Corporation. Preliminary information indicates that an abort command was issued during the final seconds of the countdown; however, the launch proceeded and was uneventful. The National Transportation Safety Board and the Department of Transportation, Office of Commercial Space Transportation signed an agreement dated June 5, 1989, pursuant to which the Safety Board will conduct the investigation.

FOREIGN INVESTIGATIONS

A significant portion of the Safety Board's work involves our participation in investigations of aviation accidents and incidents that occur in other countries. Because of the ever increasing number of U.S. manufactured and U.S. registered airplanes operating overseas, and the responsibility the Board must fulfill as the United States' sole accredited representative to the International Civil Aviation Organization (ICAO), this portion of our workload continues to increase, and last year was not an exception. The FAA, U.S. manufacturers and operators rely heavily upon the Board to facilitate their involvement in the investigation of foreign incidents and accidents.

To this end, the NTSB led the U.S. delegation of aviation industry accident investigation experts to the three-week ICAO Accident Investigation Divisional meeting at Montreal in February 1992. Accident investigation experts from more than 70 countries participated, and revisions to the international standards and practices for accident investigation and prevention were developed.

The U.S. delegation was comprised of NTSB experts and specialists from the FAA, the Air Transit Association of America (ATA), the Air Line Pilots Association (ALPA), the General Aviation Manufacturers Association (GAMA), and Aerospace Industries of America (AIA). Over 270 persons participated. The results of the meeting are highly significant to the interests of the U.S. aviation industry because of the industry's ever-expanding role in operating and selling aircraft and equipment overseas. The NTSB continues to monitor the results of this important meeting, and we have developed plans to cope with the ever-increasing workload required by our important role in investigating and preventing international accidents. Any accident, anywhere in the world, can have an adverse effect on U.S. interests and the traveling public.

Board investigators participated in 60 investigations in more than 50 different nations in 1992.

Recently, the Safety Board sent an accredited representative to lead the U.S. team in assisting the accident investigators of the Peoples Republic of China in the investigation of a China Southern Airways Boeing 737-300 that crashed on November 24 on approach to Guilin, China. The airplane crashed into the face of a nearly vertical cliff and the wreckage fell several hundred feet down to the base of the cliff after impact. The 133 passengers and eight crew were killed.

This was the first U.S. team to be invited to China to participate in an accident investigation. For some time, meetings and discussions between NTSB staff and their Chinese counterparts have been underway and the request for Safety Board participation in this investigation shows that efforts to build stronger international ties are meeting with success. NTSB staff continue to work with their Chinese counterparts on the investigation.

On October 5, 1992, a NTSB investigative team was sent to The Netherlands to assist in the investigation of El Al flight 1862, a Boeing 747-200F that crashed into

an apartment complex shortly after takeoff at Amsterdam. All three crewmembers, one passenger, and 55 persons on the ground were killed in the crash. The flight data recorder (FDR) was sent to our laboratory for examination, and a NTSB metallurgist assisted in the examination of engine attachment hardware. The FDR data and the examination of the wreckage indicated that the No. 3 engine separated from the airplane and struck the No. 4 engine, causing it to separate from the airplane. The investigation determined that the No. 3 engine separated because of a failure in midspar pylon attachment fuse pins that secure the engine to the wing.

Following the Safety Boards November 3, 1992, issuance of urgent safety recommendations, the FAA issued Airworthiness Directives regarding replacement and inspection of the fuse pins and the inspection of the midspar fitting lugs on November 13 and December 24, 1992.

On January 15, 1992, Air Canada flight 173, a McDonnell Douglas DC-9, en route from Ontario to Chicago, Illinois experienced "frozen" aileron controls. Attempts to free the aileron controls while airborne were unsuccessful. The captain declared an emergency while in Canadian airspace and made an uneventful landing at Toronto. An inspection of the airplane after landing disclosed a large accretion of ice on the aileron and wing spoiler control.

As a result of this incident, on October 21, 1992, the Board issued a safety recommendation urging the FAA to issue an Airworthiness Directive requiring the installation of safety devices to prevent such accretion in all DC-9 and MD-80 series airplanes. We are awaiting the FAA's reply to this safety recommendation.

GENERAL AVIATION

In 1992, the Safety Board initiated more than 2,250 general aviation accident investigations from its nine regional offices. Although most of these investigations do not receive as much media attention as those involving major air carriers that are investigated by a "Go Team" from our Washington headquarters, they do have a significant impact on transportation safety.

For example, the Safety Board has investigated several aircraft accidents involving considerable delays in search and rescue (SAR) responses, including a Cessna 210N accident at Shady Grove Corner, Virginia. SAR efforts did not locate the aircraft until seven days after the accident. Problems in charting the last known position of the aircraft were identified in the investigation.

The Board subsequently urged changes in the National Search and Rescue Manual in order to prevent delays and possible unnecessary loss of life in future SAR operations. The Safety Board is pleased to note that the Coast Guard is gathering such data for an upcoming revision in its National Search and Rescue Manual. The Coast Guard expects the revised manual to be published in later Summer 1993.

Currently, the Safety Board is investigating two sky-diving accidents that occurred in 1992 in Perris, California and Hinckley, Illinois. In the Perris accident, the DeHavilland DH-6 crashed shortly after departing the runway. The plane carried a pilot and 21 parachutists. The pilot and 15 parachutists were killed, and the other six parachutists received serious injuries.

At Hinckley, Illinois, a Beech 18 carrying a pilot and 11 passengers (four skydiving instructors, four students jumping in tandem rigs, two video cameramen and one solo jumper) crashed and all aboard were killed. A number of issues including plane loading factors are being examined by investigators.

PIPER MALIBU/MIRAGE AIRCRAFT

In July the Board completed a special investigation of five fatal in-flight breakups in the U.S. involving Piper PA-46 Malibu/Mirage aircraft, and concluded that the crashes resulted from deficient pilot handling and training. Twelve persons were killed in the five accidents. No inherent deficiencies in the design of the plane was found, nor were defects discovered in the autopilot operations.

As a result of this special investigation, the Board made safety recommendations concerning modifications to the airplanes flight manual and pilot training.

RAILROAD

The Safety Board performs in-depth analysis of selected rail accidents and initiates safety studies of significant railroad safety issues.

Ninety-six railroad incidents and accidents were investigated by the Safety Board in 1992. "Go Teams" from the Washington headquarters were launched to four of these accidents, while investigators from regional offices investigated the remaining 92.

INDIANA COMMUTER TRAIN COLLISION

A "Go Team" was dispatched in January 1993 when two Northern Indiana Commuter Transportation District trains collided in Gary, Indiana. Seven passengers sustained fatal injuries, five passengers serious injuries, five crewmembers and 88 passengers minor injuries, and 100 passengers no injuries. One train was crossing over a gauntlet bridge when the collision occurred with the oncoming train. The vigilance of the train operators and the preparedness and emergency skills of Gary, Indiana emergency response personnel are issues being examined.

SELECTED ONGOING INVESTIGATIONS

In June, a Burlington Northern freight train derailed in, Superior, Wisconsin. Three of the 14 freight cars that derailed were transporting hazardous materials; and one car fell into a river and released its product, an aromatic concentrate which included benzene as one of its major constituents. Thousands of nearby residents were evacuated, but no serious injuries resulted.

Issues in the Superior, Wisconsin accident are the U.S. Department of Transportation's oversight of the shipment of environmentally sensitive materials, the adequacy of existing rail inspection methods, and the accident performance of the tank cars.

Two Amtrak derailment investigations were also initiated in 1992. In one investigation (Newport News, Virginia), the FBI was called in when evidence at the scene indicated the derailment may have resulted from deliberate tampering with a switch. Another accident occurred in Stevensville, Michigan, when an Amtrak train derailed where a freight train had collided with an automobile less than an hour earlier. One of the issues being examined in this case is the adequacy of track inspections after a train makes an emergency brake application.

MANAGEMENT OVERSIGHT AND WORKER TRAINING

In December 1990, an Amtrak passenger train derailed and struck a commuter train in Boston's Back Bay Station. On April 12, 1991, an Amtrak train of locomotives only, struck a Conrail freight train at Chase, Maryland. On September 17, 1991, two Norfolk Southern freight trains collided in Knox, Indiana.

In all three of these accident investigations, the quality of supervision and training were cited and safety recommendations were issued to the appropriate parties for improvements in supervision and training programs identified in the reports adopted by the Board. Progress is being made on acceptance of these safety recommendations among the affected parties and the Board's efforts in this area to achieve acceptable responses are continuing.

A New York City Transit Authority (NYCTA) train motorman's alcohol impairment and sleep deprivation were found by the Safety Board to be the probable cause of the August 1991 subway accident that killed five passengers. In the 24 hours before the accident, the train motorman had no more than four and one-quarter hours of sleep, and, based on information the motorman gave the police, the Safety Board determined that his blood alcohol content (BAC) at the time of the accident was between 0.29 percent and 0.36 percent. For comparison purposes, New York commercial drivers license regulations prohibit operation of a motor vehicle with a BAC of 0.04 percent or more. Several safety recommendations to improve supervisor training and the New York City Transit Authority operating rulebook were issued by the Board.

OTHER RAIL ACCIDENTS

Reports on several other major rail investigations handled by NTSB staff are expected to be completed in the near future. Final reports are planned soon on the head-on collision of two Burlington Northern freight trains in Ledger, Montana; the derailment of an Amtrak passenger train near Lugoff, South Carolina; and the derailment of an Amtrak passenger train near Palatka, Florida.

HIGHWAY

The Safety Board is responsible for the investigation of highway accidents, including railroad grade crossing accidents, that it selects in cooperation with the states. The Board devotes its highway resources to those accidents that have a significant impact on the public's confidence in highway safety, that generate high public interest, or that concern technical safety issues that cause or contribute to accidents or injuries on a national scale.

INTERCITY BUSES

On July 26, 1992, a charter bus owned and operated by Sensational Golden Sons Bus Service, Inc. was transporting 49 passengers to an amusement park. As the bus was descending a steep grade in Vernon, New Jersey, the driver lost control of the vehicle. Six passengers were killed, and all other occupants received minor to critical injuries. The Board's investigation is on-going, but we have found that all of the bus' brakes were defective. A two-day public hearing on this matter was held in October in Secaucus, New Jersey. Issues being examined in this investigation include state and national regulations concerning the certification and inspection requirements of intercity bus companies, and the signing and design of the roadway approaching the accident site.

In a report regarding two accidents involving Greyhound Lines, Inc., the Safety Board urged that the company implement a new driver certification program. The Board determined that both accidents were caused by the company's failure to ensure that bus drivers had adequate training and experience to operate intercity buses. The bus drivers involved in the accidents failed to meet even Greyhound's stated criteria.

BRAKE STANDARDS FOR HEAVY TRUCKS

The safety of heavy commercial trucks is an item on the Board's "Most Wanted" list of safety issues. As a result of a safety study based in part on Safety Board investigations into 18 brake-related heavy vehicle accidents that occurred between December 1988 and November 1990, specific improvements in brake standards were recommended.

During this safety study, Safety Board staff and state authorities conducted roadside inspections of heavy trucks along interstate and secondary roads in five states (Florida, Illinois, Oregon, Pennsylvania and Texas). The most common problem identified in the study was out-of-adjustment brakes, although other issues such as brake maintenance were addressed. Thirty-five safety recommendations were issued as a result of this study.

Federal accident data indicate that although combination trucks account for only 1.8 percent of all U.S. highway accidents, they are involved in 6.7 percent of all fatal accidents. The number of fatal accidents per 100 million miles for combination trucks is nearly double that of passenger cars. More than 5,000 people are killed every year in the United States in heavy truck accidents.

WORK ZONES

Based on past Board investigations of 61 accidents that occurred in construction work zones, the Safety Board recommended last May that a new national work zone safety program be developed and that methods for managing traffic at such sites be improved. According to the Board's safety study on highway work zone safety, the number of fatalities that occurred in work zones increased from 489 in 1982 to 780 in 1988. Unless action is taken by federal and state authorities, the number of traffic fatalities that occur at road construction sites can be expected to rise, especially in light of the anticipated increase in construction and maintenance activities in the next few years.

HIGHWAY LIMITED-VISIBILITY

As a result of the investigation of six limited-visibility, chain-reaction collisions since December 1990, and a public hearing into the problem, the Safety Board recommended that a more uniform approach be developed to review and update driver licensing and education materials to ensure that guidance for limited-visibility driving is uniform and complete. The Board believes such an effort should be a joint federal, state, and industry initiative. The Board also asked the Department of Transportation to include limited-visibility countermeasures in its Intelligent Vehicle Highway System demonstration programs.

TANK TRUCK ROLLOVERS

One of the four special highway safety studies adopted by the Board last year dealt with hazardous spills from overturned tank trucks. Several accidents that occurred in the first few months of 1991 were examined, and while none of the cargo tanks were breached, gasoline, hydrochloric acid or fuel oil spilled because closures or fittings on top of the cargo tanks were damaged during the accident sequence.

The recommendations issued as a result of this study call on the Research and Special Programs Administration (RSPA) and the Federal Highway Administration

(FHWA) to work together to improve the performance of tank truck rollover protection devices. The Safety Board additionally urged FHWA to require that cargo tanks failing to comply with DOT standards either be removed from hazardous materials service or be modified to comply with those standards.

UNDERAGE DRINKING AND DRIVING

After analyzing a large body of research involving young driver highway accidents and actions to prevent crashes by young drivers, the Safety Board has called for a major reassessment by the states to reduce crashes among drivers under 21, including alcohol-related accidents.

In 1991, more than 9,100 people died in traffic crashes involving more than 8,200 15- to 20-year-old drivers. That is more than 22 percent of all fatalities that occurred on our nation's highways in 1991. Moreover, young drivers comprise only 7.1 percent of licensed drivers, but account for 14.9 percent of all driver fatalities according to the latest figures from the National Highway Traffic Safety Administration (NHTSA). Further, while young drivers do only 20 percent of their driving at night, over half of the crash fatalities of adolescent drivers occur during nighttime hours.

Underage drinking and driving continues to play a major role in youth traffic crashes and fatalities. Although no state allows the sale of alcohol to persons under age 21, the Safety Board research found most states still allow a driver under age 21 to legally drive with a substantial amount of alcohol in his or her system.

Several state legislative and policy actions can be effective in reducing automobile crashes involving young drivers and the Safety Board has recommended that several initiatives be adopted, including the enactment of "zero" Blood Alcohol Content (BAC) laws to make it illegal for drivers under 21 to drive with any blood alcohol concentration.

MARINE

In 1992, the Safety Board adopted six major marine accident reports and three major investigations are underway.

The ongoing investigations include two ships (the *Queen Elizabeth II* and the container ship *Chiara*) that ran aground off the coast of Massachusetts. The remaining investigation was initiated last December when the container ship *Juraj Dalmatinac* and a barge, *Duval 2*, collided in the Houston ship channel near Galveston, Texas. The channel was blocked for several hours and it was opened for one-way traffic about sixteen hours after the accident.

ESCORT VESSELS

The Safety Board also commented on a Coast Guard Notice of Proposed Rule-making (NPRM) to implement provisions in the Oil Pollution Act of 1990 requiring escort vessels for single-hulled tankers of over 5,000 tons transporting oil in bulk in Prince William Sound, Alaska (where the *Exxon Valdez* accident occurred), and in Rosario Strait and Puget Sound, Washington. The Board urged improvements in the NPRM to insure that escort vessels have a demonstrated ability to maneuver a loaded tanker underway in a manner sufficient to prevent an accident.

FISHING VESSEL SAFETY

Each year, an estimated 250 fishing vessels are lost and about 100 fishermen die in the commercial fishing industry. The highest loss and fatality rates are for larger vessels, but the fatality rates for vessels under 65 feet long are also extraordinarily high. These are just some reasons why the safety of commercial fishing vessels remains an item on our "Most Wanted" list.

An example of this type of accident was the capsizing and sinking of the 162-foot U.S. Fishing Processing Vessel *Aleutian Enterprise* in the Bering Sea resulting in the loss of nine lives. As a result of our investigation, we found that the vessel was lacking in watertight doors and hull closures, crew safety equipment and training, and adequate stability information.

The Board reissued several recommendations concerning fishing vessel safety and recommended several new actions to the Coast Guard to correct problems involving watertight doors, load lines, and post-accident toxicological testing requirements.

PIPELINE

The mission of the Safety Board's Pipeline Accident Division is to continually increase public safety by advocating that government, pipeline operators and associa-

tions improve their policies, practices and systems. This is accomplished through the investigation of pipeline accidents that generally involve a fatality, substantial property damage, or significant injury to the environment.

Two major pipeline accidents were investigated by the Board in 1992. The first accident occurred when a low-pressure natural gas system serving a neighborhood of residences and small businesses in Chicago, Illinois, suffered an overpressure. The resulting fires killed four persons. In its final report on the accident, the Board found the failure of the Chicago utility to adequately train its gas operations section employees in recognizing and responding to abnormal situations spawned a sequence of events that resulted in the deaths and extensive property damage.

In the second accident, Board investigators are looking into the explosion of a gas cloud at a salt dome storage cavern in Brenham, Texas on April 7, 1992. The adequacy of federal and state safety controls governing the operation, and maintenance of underground fuel storage facilities are being examined.

MILITARY GAS PIPELINE SYSTEMS

The Safety Board also determined in 1992 that the 1990 explosion that killed two persons and injured 24 others at Fort Benjamin Harrison, Indiana was caused by the U.S. Army's failure to follow accepted gas pipeline procedures. As a result, a valve into a discontinued but uncapped gas line was inadvertently opened. Among the recommendations issued, the Board said that the Secretary of the Army should require pipeline systems that are owned or operated by the military to conform to federal civilian safety regulations.

The Board report also examined the gas pipeline operations of the other military service branches and found operations similar to those of the Army. Consequently, the Secretaries of the Navy and the Air Force were urged to evaluate their gas pipeline safety programs to identify and correct any deficiencies.

We were pleased to be advised that the Army has updated its guidance document for the operation and maintenance of gas systems. The updated manual has been forwarded to all Army installations, and coordination is ongoing with the Navy and Air Force to publish the manual as a Department of Defense Tri-Service Manual.

EXCESS FLOW VALVES

As this Committee knows, the Safety Board has advocated the use of excess flow valves since 1971. Excess flow valves are an item on the Board's "Most Wanted" list. The devices, which have been commercially available for about 30 years, can automatically protect against gas flow in excess of that required by normal customer demands when they are installed in the service line at or near its connection to a gas main. An Advance Notice of Proposed Rulemaking on this matter has languished at DOT and the agency has taken no concrete action to require this important safety protection. We are pleased that the 102nd Congress addressed this matter with the enactment of the Pipeline Safety Act, which calls upon DOT to either mandate excess flow valves or explain why it has chosen not to require these recognized safety devices.

HAZARDOUS MATERIALS TRANSPORTATION

About four billion tons of regulated hazardous materials are shipped each year, with more than 250,000 shipments of hazardous materials entering U.S. transportation system daily. The Board's role is to investigate accidents that occur during the transportation of the materials, or that result in or threaten deaths, serious injuries, or major disruptions within communities caused by the release of hazardous materials.

As mentioned earlier, the Board is currently investigating a Burlington Northern train derailment that occurred in June 1992 near Superior, Wisconsin. Three of the fourteen derailed cars contained hazardous materials and one of these was carrying more than 26,000 gallons of benzene. This car was breached, resulting in the release of more than 20,000 gallons of product. Rising temperatures and prevailing winds generated a massive cloud of vapor fumes of the Superior, Wisconsin/Duluth, Minnesota area. During a 16-hour period, local officials evacuated approximately 40,000 residents.

The safe transport of hazardous materials has been a concern of the Board for some time. As mentioned earlier in my testimony, the Board has placed strong emphasis on the need to enhance highway trucking safety especially when dangerous materials are being carried.

The same is true for rail tank cars. Just this past December, the Safety Board issued a series of recommendations calling for better federal testing and inspection

requirements for rail tank cars and their components. These recommendations add to those issued in the past.

The Board found that DOT tank car inspection and testing regulations, which cover all of the nearly 104,000 tank cars used to carry hazardous materials in the nation, are ineffective for finding certain types of major structural flaws. The findings were based on a special investigation of two rail tank car accidents in 1992, one of which resulted in the sudden release of 30,000 gallons of liquified petroleum gas. The Board issued a series of recommendations calling for better federal testing and inspection requirements for the cars and their components.

STATE AND LOCAL INITIATIVES

There are a number of safety recommendations that have involved the Safety Board in issues important to state and local governments. The Board has encouraged adoption of its recommendations by testifying before state legislative bodies, and by disseminating accident investigation findings and reports to state and local authorities. Among the issues addressed are recommendations that states enact administrative license revocation for drunk drivers, mandatory safety belt use laws, boating while intoxicated laws, and flying while intoxicated laws.

Likewise, the Board has recommended that states undertake safety oversight of rail rapid transit systems and improve anti-drunk driving programs. These efforts continue.

The Board is encouraged by the states' response to our recommendations. Administrative license revocation laws were passed in Nebraska, New Hampshire and Ohio in 1992, bringing the total to 32 states. The National Highway Traffic Safety Administration and the Safety Board participate in a national coalition of more than 30 government and private groups working for enactment of these types of laws in all states.

Five states have adopted mandatory safety belt laws since the Board issued its safety recommendation, leaving only eight states that do not require occupants of cars, vans and light trucks to wear their seatbelts.

Since the Board's 1983 boating while intoxicated recommendation, the number of states with comprehensive boating while intoxicated laws has increased from three to 39. The responses from governors to the 1992 study on flying while intoxicated has also been encouraging.

CONCLUSION

Just as challenges have been confronted by the Board in its first 25 years, so too will the upcoming challenges of the next be met. The introduction of high speed trains in the United States, the development of new composite materials, the advent of intelligent highways, and the development of new transportation technologies will place demands on those in government working to help insure safe transportation systems.

Our responsibility must be to maintain the highest level of technical competence and expertise in these fields in order to respond effectively when accidents occur and to develop sound proposals to prevent their recurrence. The Safety Board is committed to this goal, as is this panel, and I look forward to working with you to help insure a safe national transportation network.

That concludes my formal statement. The staff and I would be pleased to respond to any questions.

MOST WANTED

Transportation Safety Improvements

"... a program to increase the public's awareness of, and support for, action to adopt safety steps that can help prevent accidents and save lives."

Boating While Intoxicated

- Strengthen Enforcement and Toxicological Testing Programs to Prevent Boating Accidents

Action Needed by State Legislatures

Administrative Revocation of Driver's License

- Pull Driver's License on the Spot of Anyone Failing or Refusing a Chemical Test for Alcohol

Action Needed by State Legislatures

Airport Runway Incursion

- Provide Safer Control of Aircraft on the Ground

Action Needed by the Federal Aviation Administration (FAA)

Positive Train Separation

- Require a Railroad Collision Avoidance System

Action Needed by the Federal Railroad Administration (FRA) and the Railroad Industry

Mode C Intruder Conflict Alert in Terminal Areas

- Install Collision Avoidance Systems for Airport Terminal Areas

Action Needed by the Federal Aviation Administration (FAA)

Fishing Vessel Safety

- Require Basic Lifesaving Equipment for Commercial Fishing Vessels

Action Needed by the United States Coast Guard (USCG)

Mandatory Seatbelt Use Laws

- Require Occupants of Cars, Vans, and Light Trucks to Use Lap/Shoulder Belts

Action Needed by State Legislatures

Adjustable Upper Anchor Point For Lap/Shoulder Automobile Seatbelts

- Increase Seatbelt Use and Effectiveness

Action Needed by Automobile Manufacturers

Railroad Hazardous Materials Tank Cars

- Require Improved Protection of Railroad Tank Cars Carrying Hazardous Materials

Action Needed by the Research and Special Programs Administration (RSPA) and the Federal Railroad Administration (FRA)

Human Fatigue in Transportation Operations

- Study the Relationship of Fatigue and Work/Rest Cycles in the Transportation Industry and Update Applicable Regulations

Action Needed by the Department of Transportation (DOT)

School Bus Safety

- Safer Transportation for Schoolchildren

Action Needed by the National Highway Traffic Safety Administration (NHTSA)

Structural Fatigue Testing of Aircraft

- Require Testing of Aircraft to the Equivalent of Two Lifetimes of Use

Action Needed by the Federal Aviation Administration (FAA)

Passenger Vessel Safety

- Upgrade Fire Detection and Control, Crew Communications and Training on Passenger Cruise Vessels

Action Needed by the United States Coast Guard (USCG)

Alcohol/Drug Detection

- Require Uniform Collection, Handling, Processing, and Testing for Alcohol and Other Drugs

Action Needed by the Department of Transportation (DOT)

Brake Wear on Transport Airplanes

- Require Improved Braking for Transport Category Airplanes

Action Needed by the Federal Aviation Administration (FAA)

Heavy Commercial Truck Safety

- Improve Prevention of Accidents Caused by Fatigue, Alcohol, Drug Use, and Medical Problems

Action Needed by the Federal Highway Administration (FHWA) and the States

Pipeline Excess Flow Valves

- Require the Installation of Excess Flow Valves in High Pressure Residential Natural Gas Distribution Systems

Action Needed by the Research and Special Programs Administration (RSPA) and the American Gas Association

NTSB STAFF COMMITMENT

Senator LAUTENBERG. Mr. Vogt, as you indicate, the statistics are very encouraging, and we do have a remarkably good safety record except for spilled coffee, but we have an excellent record for safety in transportation in this country.

There is something else also I think that happens in an agency like yours, and that is the people who work there are often much more than simply physically committed. They are emotionally committed because they know how important the work is. Of course, that is never very satisfactory to someone who has lost someone in an accident, but our mission is to as much as possible reduce the numbers. And what is happening in our aviation system is very encouraging.

AVIATION STATISTICS

I note that you have a pilot's license, and I do a lot of side-seat flying in small airplanes. It is really quite astounding the number of movements that we have in airports across this country and in all kinds of weather, realistically sometimes there are delays, but the safety record is quite fantastic.

Mr. VOGT. An interesting statistic that was presented to me the other day is that if you take a scheduled airline flight in this country every day for 4,000 years you would not statistically encounter a fatal accident, and if you did, you would have a 50-percent chance of surviving it.

Senator LAUTENBERG. We would have to see who that individual is.

Mr. VOGT. That does not say much to the families of people who are lost in an accident, though.

Senator LAUTENBERG. Do you happen to have a number in your papers there about general aviation?

Mr. VOGT. About fatalities in general aviation, yes, we do. Tim.

Mr. FORTÉ. It is preliminary this year, but the numbers have dropped. We had fewer fatal accidents, 408, but the number of fatalities did increase by about 60 to 812 as compared to 1991, 414 accidents and 746 deaths.

Mr. VOGT. In looking at those figures over a 10-year period it is really hard to relate. For example, in transport aircraft back in the eighties there were several years where we had very few accidents in terms of total fatal accidents, but we had high numbers of fatalities because of the type of accident involved, and I think in general aviation it has been dropping over the years. At least some of that is due to the drop in volume of general aviation activity, perhaps related to the recession, certainly related in the manufacturing sector to liability laws.

Senator LAUTENBERG. Some of that I hope also is due to better equipment in the airplanes, and at some of the airports the Mode C transponders that are required in lots of areas, and that is very, very helpful.

Mr. VOGT. I think there has been a significant increase in technology and just safer aviation, but we are finding a lot of, for example, homemade airplanes, and some of them are fairly high performance kit aircraft. It is very hard to break into general aviation

today because it is so expensive, and that is quite troubling in that respect.

UNDERAGE DRUNK DRIVING

Senator LAUTENBERG. Mr. Vogt, the Board's recent report on underage drunk driving recommends that State laws be strengthened to prohibit minors from purchasing alcohol, alcohol possession by minors, and outlaw the use of false identification. These are not new ideas, obviously. Many States have already implemented these laws. What do you think are the largest barriers to enactment of these laws in the States where they have not done it?

Mr. VOGT. Well, I am going to defer to Mr. Sweedler here in a second, but my own view is that in many States you have very strong lobbies in the liquor industry. I know when we came out with this report, I became immediately the most unpopular adult in my neighborhood. Several parents called to tell me they thought it was wonderful, but their children were upset about it.

And I am just not sure how much of a factor that is. Barry has spent a considerable amount of time testifying before State legislative committees and actively working, as have a number of people at the NTSB. And some States do very well. There is quite a significant disparity between States. And the District, as you pointed out earlier in your remarks, is one in which it is quite easy to purchase alcohol.

But there were two aspects to this report. One was alcohol and the other was just the high accident rate among novice drivers, particularly at night. And when you combine the availability of alcohol, the 40-percent involvement of alcohol in teenage fatal accidents, the fact that almost one-half of the teenage drivers are killed at night, and some 9,150 people died in crashes in 1991 in which the driver was 15 to 20, it is an enormous problem.

As you postured earlier, how the Federal Government puts pressure on the States is a question that I certainly do not know the answer to. Barry, I know you have been at it for a long time.

Mr. SWEEDLER. Thank you, Mr. Chairman. I think the problem of easy access is a combination of things. One is the weakness of many of the State laws, as you mentioned, Mr. Chairman, but the other thing is where attention is placed in the community. It gets to a point where if the community, the parents, the interest groups are not putting pressure on the alcohol control boards of the States to take stronger action against the outlets that do sell to young people, then we do not see much progress.

But I think one of the problems is sometimes the laws are so weak that even when the police are serious about this, they never get anywhere. I remember—you probably recall in northern Virginia about 3 or 4 years ago they tried a number of sting operations and brought indictments against merchants who sold. Every case got thrown out of court because the law was so weak. So the laws really have to be strengthened and the commitment has to be made by the community to put pressure on their elected officials and their police and liquor authority people to really enforce the law.

Mr. VOGT. One thing that might be worthwhile, and I do not know that we have done this, is to go into case histories of the

States where the laws have been strengthened and enforcement has been strengthened over the last 10 years, particularly since the advent of the age 21. I mean it would be a good benchmark to begin looking at how these laws are enforced. And we may find some common threads among those States that have been successful in implementing stronger laws.

UNDERAGE DRUNK DRIVING

Senator LAUTENBERG. In my State of New Jersey there is a contingent liability attached to the sale of liquor to obvious drunks, to minors, and I am sorry I do not have that citation directly with me now, but I assume that in many States that kind of law exists on the books. Are you familiar?

Mr. VOGT. We have got some figures here from New Jersey.

Mr. SWEDLER. Yes; I was very pleased to see the wonderful job that was done in New Jersey. In 1980, 81 young drivers under the age of 21 were killed in accidents involving alcohol. That is 81 dead in 1980. But in 1991 they reduced that down to 12. That is an 85-percent reduction, that is a wonderful, wonderful record. I mean, if we could see that in all States, we would be saving thousands of lives across the country.

Senator LAUTENBERG. I think, Mr. Sweedler, as you point out, a lot of it has to do with the behavior of the people in the community who are other than the minors who disparage the law and who resist tightening up on these laws. In the District of Columbia we know that they were dragged kicking and screaming to endorse the 21 drinking age law. And we are not pointing any fingers, but we would like to figure out how we can do better.

In New Jersey where we have such crowded conditions, and we are very energetic in trying to protect our young people, New Jersey has had significant sting operations in place where .02 blood alcohol content for minors, and had provisional licenses for teenagers—there are a number of things that they have done, I think that helped bring that number down so dramatically.

Why does the report only make recommendations for actions by the States? Why not any recommendations for stronger action by the Federal Government to compel better performance by the States?

Mr. VOGT. I am clearly going to pitch this one to Barry, but my own view is that the only way the Federal Government can put pressure on is through purse strings. And the willingness of the Federal Government to do that is a very important aspect.

Some legislation, I believe, has been drafted by Senator Danforth, involving incentives to States that enact more stringent laws. So it has to be done through the money channel, but just how that is done is a question that I think we really have not gotten into.

Senator LAUTENBERG. Again, as you know, the law originally was enacted by the threat of withholding funds. That kind of got it moving. There was a lot of private resistance by colleagues who said, you know, why cannot the States take care of it, and we went through the whole litany of argument that time about the teenager crossing State boundaries, et cetera.

Mr. VOGT. With all of the money being spent on infrastructure, it might be a good time to review that.

Senator LAUTENBERG. All right, Mr. Vogt, you are from Texas, I think. [Laughter.]

There are a couple of people you might talk to for me.

Mr. VOGT. I would be happy to.

UNDERAGE DRUNK DRIVING

Senator LAUTENBERG. Given the poor record by States at enforcing prohibition on alcohol sales, what would make you think that putting more laws on the State books could make a difference, as resistance is there?

Mr. SWEEDLER. Well, I think as far as the access, if the laws were easier to enforce I think the police would be more willing to go out and enforce them. But the other legislative aspects to our package include, as you mentioned, the lower blood alcohol for youth. If youth are not supposed to have alcohol under age 21, why should they be allowed to have any alcohol in their blood while they are driving. Only 15 States have that. So all of the other States need to get that important provision.

That is also part of the package, and we have found a recent study in Maryland where they lowered the BAC to .02 for youth and then had some good advertising and public information so the youth knew about this new law. They had a 50-percent reduction in had-been-drinking crashes of these young drivers. So that shows that it can work. So we still have 35 States that need to have this lower blood alcohol.

Senator LAUTENBERG. I think you say something else important, and that is a lot of young people are not aware of the fact that this blood alcohol level is law. And maybe if the advertising, as you suggested, were done, why perhaps we would even see an improvement there.

Mr. VOGT. Mr. Chairman, the record in New Jersey also with the very stringent laws that you just mentioned, there seems to be a strong correlation between the existence of the laws and reductions in adolescent and alcohol-involved accidents. I do not know whether to pass those laws you have to change the state of mind, which results in the enforcement, or which comes first, but there is a correlation there.

Senator LAUTENBERG. Concerning the whole enforcement question, few have not been witness to the violation of the law. I saw it in a rodeo out West. Kids 15—they looked like 14-year-olds to me, going up and buying beer, and there was a cop standing there and I said to him what is the minimum drinking age, and he said 21. So I said do these kids look 21 to you? He said I am doing traffic, Mister.

Mr. VOGT. He was probably real busy later in the day.

Senator LAUTENBERG. Yes; he was not about to interfere. But you see it at ski resorts, you see it wherever young people are—it is just obvious that there is not a lot of serious attention paid.

Mr. SWEEDLER. You mentioned the sting operations that were done in New Jersey. There was one study done of one in Denver. They had a high rate of selling alcohol to young people, something like 60 percent, and then they had a sting. They kept going out with advertising, they told people what they were doing, they wrote

letters to those that did not sell thanking them, and warned the merchants, if they did this again, they would lose their license.

They went back about 2 months later and the number had dropped to 32 percent, so they had brought it way down. And there were still some merchants that still sold. Those were prosecuted, they kept the program up, and by October 1992 they were down to 26 percent. So it shows that if there is a will and a willingness to do this on a regular, long-term basis, it can have significant success.

DRUNK DRIVING LEGISLATION

Senator LAUTENBERG. We used the threat of withholding Federal construction dollars from the highway trust fund for States to enact the 21-year-old drinking age. Why should we not use these same mechanisms to require States to implement several other laws to crack down on underage drinking and driving?

Mr. VOGT. I think we would certainly applaud that.

Senator LAUTENBERG. Do you think it is wiser, as a matter of Federal policy, to provide financial incentives to States to enact and enforce strict drunk driving laws, or—the flip side of the coin—should we penalize States that fail to enact and enforce such laws?

Mr. VOGT. I think our view, Mr. Chairman, would be to do whatever works. And I do not know that the incentive route has been tried, but you had great success with the age 21 law.

Senator LAUTENBERG. The incentive programs have been tried. They do not seem to have the same impact as the punitive side.

Mr. VOGT. I think we would be inclined to go with whatever works, and we would certainly support it.

NATIONAL MINIMUM DRINKING AGE ACT

Senator LAUTENBERG. Does it make sense for States to be considered in compliance with the National Minimum Drinking Age Act simply by outlawing sale but not outlawing possession of alcohol by minors?

Mr. VOGT. No; we certainly are in favor of outlawing possession. As Mr. Sweedler pointed out, there are many States that do not outlaw possession.

Senator LAUTENBERG. Talking about the blood alcohol content, according to the Insurance Institute for Highway Safety we have made, as you have confirmed, great gains in lowering the percentage of teenage drivers who die in highway crashes due to alcohol since the law has been enacted.

However, it is noted also in recent years progress has begun to reverse itself and the percentage of teenage drivers dying in highway crashes whose blood alcohol exceeds the legal limit rose from 28 percent in 1987 to 33 percent in 1991. What do you think explains this reversal in trend?

Mr. SWEEDLER. I think the emphasis that came immediately after the enactment of age 21 in all States had a big impact on this reduction, but now we are starting to see backsliding. The sting operations are showing that we are getting lax in our enforcement, and I think we really have to crack down again.

Mr. VOGT. It may also be, just looking at the charts, that the impact of the age 21 law dropped off. We are beginning to see an increase—29- to 33-percent range—in the percentage of teenage highway accident fatalities. As Barry pointed out, the impact has now leveled off and we are going to have to find new ways to reduce teenage highway crash fatalities.

Senator LAUTENBERG. Some of that also is due to reductions in law enforcement forces. Then communities begin to analyze their problems in terms of immediacy and kind of put this kind of thing on a back burner because the action is not automatically connected with the incident, like a robbery or a shooting or something of that nature. And I have met with lots of police officers who complain bitterly about the inadequacy of the force. That also could be part of it, and just the stress on local and State government in keeping up with their programming unfortunately permits them to kind of back step on this and wait for the statistics.

Mr. Vogt, you point out that information indicates that it is difficult to successfully convict, fine, or revoke the permits of alcohol beverage vendors who have been caught selling alcohol to underage youth. You are an attorney. What is it that makes it so hard to convict the offenders or those who would sell alcohol to minors?

Mr. VOGT. Mr. Chairman, I am going to have to speculate on that. But I would say that in large measure it is a jury acceptance of that as a serious criminal violation, and the ability of people to plea bargain out of the charge without the loss of a license.

Now, Barry, I do not know, you may have gotten into that in more depth. But taking away a license can be postured to a jury as the ruination of a business, and that is a very difficult thing for a jury to swallow particularly in an environment where teenage drinking may be considered acceptable. And in many jurisdictions, as we know, it is unfortunately not viewed as a major problem. It goes to the education that we were talking about earlier.

UNDERAGE DRUNK DRIVERS

Senator LAUTENBERG. You point out that young people are arrested for driving while intoxicated at rates far below their actual rate of involvement in auto accidents. Why do you think young people are less likely to be stopped and arrested for DWI than the older driver?

Mr. SWEEDLER. A recent study has shown that young people have different drinking and driving habits than adults. And most police departments over the years have geared up to catch the typical drinking driver. And young people have different patterns. And I think there needs to be some education and assistance to the local police departments.

And you asked earlier about what the Federal Government might do. Some of the grants that were given specifically for youth enforcement have really had a big impact. I know of a program in Castle County, DE, where there was special funding given, where they set up a group of patrol officers who had special training in how to handle youth. I think they called it the brat patrol. And they were very successful in coming up with new techniques in how to handle—especially if they came upon a big party of young people what would they do? They do not want to let them get in their cars

and drive away, so they came up with a way of containing them and using portable fingerprinting equipment. And there is another program in Clackamas County, OR, around the Portland area, where they have been very, very successful.

But the only way that these departments could afford to do these special programs was from some Federal grant money. So, that may be one way for the Federal Government to assist the States to emphasize this important area.

AIRCRAFT ICE CONTAMINATION

Senator LAUTENBERG. I want to turn to aviation for a moment. The Board last year testified that over the last decade, ice has been a factor in 25 accidents and 165 fatalities, including USAir flight 405 last year. However, only seven accidents, now eight with flight 405, involved ice on the wing. The GAO reported in November that FAA's new regulations on deicing should be further tightened. But FAA does not fully agree.

Do you, with your reviews, find that or believe that pilots can adequately determine if critical aircraft surfaces are contaminated with ice by viewing such aircraft from inside the cabin? And if so, what causes you to think so?

Mr. VOGT. Well as you know, Mr. Chairman, it was an issue in the 405 crash as to whether or not that wing ice contamination could have been seen. It certainly could have been seen better from the passenger cabin than from the cockpit. But there is substantial doubt on our part that there is a demonstrably proven way to identify it from inside, that that is an answer to this problem. And we, likewise, have found problems, as the GAO did, with that aspect of the FAA's program.

We think the best way to do it is to remove the ice and take off within the time limits that we know demonstrably will result in clean wings. And if not, the best is a tactile inspection, or simply return to the gate.

These accidents you mentioned that involve wing icing, as distinguished from other kinds of icing, all involved so-called hard wing, non-slatted wing aircraft. And one of our recommendations in the 405 crash was that the FAA do further research on the relative ability of slatted versus unslatted wings to resist and operate in icing conditions.

But the fundamental concept is to have an ice-free wing, whether it is slatted or unslatted, and we have serious questions about the ability to see ice. There is a lot of technology being developed now, because there is clearly a market for it, for automatic ice detection systems.

And, finally, the amount of ice that can disrupt the air flow over the wing is so small and so difficult to detect that there has to be a better way than a pilot looking at it for ice.

FAA ICE CONTAMINATION REGULATIONS

Senator LAUTENBERG. Are you satisfied that FAA's current regulations are adequate to assure safe operation when it comes to the ice problem?

Mr. VOGT. Well, we are very encouraged by what they are doing, and we are anxious to see the results of this winter operation, but they look very good to us. We think that they are on the right track. The rulemaking is open until April 15, and we should shortly be able to assess the effectiveness of the FAA's program.

We think that the FAA should apply some standards to 135 operations. We understand that they agree with that now. That was a question GAO had and we have. So, we are very pleased and we think that this is movement in the right direction.

DEICING

Senator LAUTENBERG. Are pilots so pressured to meet schedules that there might be an inclination to take a short cut and not go back for a second run at deicing?

Mr. VOGT. We have certainly heard about that, and there are pressures on pilots. One of the things that is coming out of this year's experience with the FAA's interim final regulation is the very high degree of cooperation among the airlines, ATC, ground controllers, and the entire community involved in trying to prevent icing accidents. So, we think a part of that, and a part that we are going to be very interested in, is to relieve any pressures which may exist on pilots to take off with a clean wing rather than meeting the schedule. That is one of the aspects of this winter's experience that we are interested in evaluating.

GENERAL AVIATION ICING

Senator LAUTENBERG. Does ice figure significantly in any of your studies of general aviation?

Mr. VOGT. Tim, I am not sure of what we are doing in terms of general aviation in that regard, and what the accident record is.

Mr. FORTÉ. I do not know the specifics, but there are ice-related accidents in general aviation. But there is not a significant trend that we have identified.

Senator LAUTENBERG. The weather restrictions that apply to commercial airlines are the most stringent. Are there restrictions other than visibility, et cetera, to general aviation operations?

Mr. FORTÉ. There are. Of course, general aviation has the rule that they will not depart with wing contamination, and there are visibility restrictions for both departure and arrival, you are correct. And in commercial operations the rules are more strict, but we have not seen correlation of that. We also have a difference in the types of aircraft we are talking about. And the performance penalty is potentially higher in the higher performance aircraft.

Senator LAUTENBERG. Is there an analysis of general aviation's accident rate and weather conditions? I am sure there is, because in each of these investigations you would be doing a review of the weather conditions.

Mr. FORTÉ. Weather is always considered in general aviation accidents.

Senator LAUTENBERG. I would be interested, if you have any kind of a statistic that says that the number of accidents related to poor weather is thus and so.

Mr. FORTÉ. We can provide that for the record.

Mr. VOGT. Mr. Chairman, Mr. Sweedler reminds me that several years ago the board did a study of general aviation instrument meteorological conditions involvement, and we would be pleased to provide that to you.

[The information follows:]

SAFETY REPORT

GENERAL AVIATION ACCIDENTS INVOLVING VISUAL FLIGHT RULES FLIGHT INTO INSTRUMENT METEOROLOGICAL CONDITIONS

INTRODUCTION

Between 1975 and 1986, accidents involving visual flight rule (VFR) flight into instrument meteorological conditions (IMC) accounted for 4 percent of all general aviation (GA) accidents but produced 19 percent of the resulting fatalities. While the GA accident rate was reduced by 37 percent over the 12-year period, the VFR flight into IMC accident rate decreased by 64 percent. Seventy-two percent of the VFR flight into IMC accidents were fatal which was substantially higher than the corresponding 17 percent of all GA accidents.

This report presents a statistical compilation of data from the National Transportation Safety Board's Aviation Accident Data System. The data includes 361 GA accidents that occurred between 1983 and early 1987.¹ In all of these accidents, VFR flight into IMC was listed as a probable cause or a related factor. There were 276 fatal accidents which resulted in 583 fatalities. Ninety-four percent of the aircraft involved in these accidents were airplanes; the remainder were helicopters.

The Safety Board may designate more than one of its investigative findings as "probable causes" and "related factors" for an accident. For the 361 GA accidents reviewed, 1,121 probable causes and 1,714 related factors are cited (see table 4). Ninety-seven percent of these probable causes are attributed to the flightcrew--361 pilots, 8 copilots, and 2 dual students. Considering only flightcrew-related probable causes, 42 percent cite the manner in which weather information was obtained (or not obtained), assimilated, and used. Aircraft handling, another frequently-cited category in accidents involving VFR flight into IMC, accounts for 30 percent of flightcrew-related probable causes. Findings explicitly related to the crews' planning, decisionmaking, and judgment account for 14 percent; however, it would be reasonable to consider some of the weather-related probable causes (for example, preflight briefing service or flight into known adverse weather) in this category. Training- and experience-related findings do not appear to be a substantial component of the problem since they constitute only 3 percent of the flightcrew probable causes.

Although rarely cited in connection with the probable cause in the 361 accidents examined, environmental conditions account for 69 percent of related factors. Fifty percent of these factors involve weather conditions such as clouds, fog, or precipitation that may have reduced visibility or limited the airspace available for VFR flight. Most (28 of 31 percent) of the remaining (nonenvironmental) factors are attributed to the flightcrew and are distributed fairly uniformly among the five categories of flightcrew causes and factors depicted in chart 6.

Based on the tabulations presented in this data review, the following statistics describe pilots who were involved in VFR flight into IMC accidents:

- 51 percent were between the ages of 40 and 59 (table 5);
- 71 percent held a private pilot's certificate (table 6);
- 52 percent had less than 500 total flight hours (table 9);
- 46 percent had less than 100 flight hours in the type aircraft (table 10);

¹When this data was compiled, all accidents that occurred since 1983 in which VFR flight into IMC was cited as a probable cause or a related factor were selected. At that time, some of the calendar year 1986 accident investigations had not been finalized, but some 1987 cases were complete. This group of accidents approximate the characteristics of the population of VFR flight into IMC accidents for the years 1983-86. The numbers of VFR into IMC accidents presented in tables 1 and 2 as well as charts 1 through 5 were derived after the data review sample was chosen. Therefore, the tables and charts reflect a larger number of accidents in the period 1983-86.

- 77 percent were not instrument rated (table 12);
- 57 percent had less than 20 hours instrument time (table 14);
- 55 percent received a weather briefing from a flight service station or the National Weather Service (table 15);
- 79 percent had filed no flight plan (table 19);
- 83 percent were flying a single-engine airplane (table 13);
- 62 percent were flying their own aircraft (table 11);
- 75 percent were flying for personal reasons (table 16);
- 62 percent were in the cruise phase of operation when the accident occurred (table 8);
- 61 percent crashed in fog or ground fog (table 20); and
- 75 percent were killed (table 3).

TABLE 1 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
ALL GENERAL AVIATION
1975 - 1986

Year	Accidents	Fatal Accidents	Percent Fatal	Fatalities
1975	3995	633	15.8	1252
1976	4018	658	16.4	1216
1977	4079	661	16.2	1276
1978	4216	719	17.1	1556
1979	3818	631	16.5	1221
1980	3590	618	17.2	1239
1981	3500	654	18.7	1282
1982	3233	591	18.3	1187
1983	3075	555	18.0	1064
1984	3010	543	18.0	1039
1985	2741	498	18.2	952
1986	2581	471	18.2	961
1975-1986	41,856	7,232	17.3	14,245

Year	Hours Flown	Accident Rate per 100,000 *	
		Total	Fatal
1975	28,799,000	13.87	2.19
1976	30,476,000	13.17	2.16
1977	31,578,000	12.91	2.09
1978	34,887,000	12.08	2.06
1979	38,641,000	9.88	1.63
1980	36,402,000	9.86	1.69
1981	36,803,000	9.51	1.78
1982	32,095,000	10.06	1.84
1983	31,048,000	9.90	1.79
1984	31,510,000	9.54	1.72
1985	30,590,000	8.95	1.62
1986	29,318,000	8.80	1.61
1975-1986	392,147,000	10.67	1.84

* Suicide and sabotage accidents excluded from rates as follows:

Total - 1975 (2), 1976 (4), 1977 (1), 1978 (2), 1980 (1), 1982 (3),
1983 (1), 1984 (3), 1985 (3)

Fatal - 1975 (2), 1976 (1), 1977 (1), 1978 (2), 1980 (1),
1984 (2), 1985 (2)

TABLE 2 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
VFR FLIGHT INTO IMC *
1975 - 1986

Year	Accidents	Fatal Accidents	Percent Fatal	Fatalities
1975	184	137	74.5	314
1976	165	97	58.6	213
1977	158	108	68.4	248
1978	187	137	73.3	293
1979	168	124	73.8	281
1980	140	102	72.9	220
1981	167	114	68.3	251
1982	126	98	77.8	215
1983	116	91	78.4	199
1984	97	75	77.3	158
1985	94	70	74.5	148
1986	68	52	76.5	97
1975-1986	1,670	1,205	72.2	2,637

Accident Rate per 100,000
Aircraft Hours Flown

Year	Hours Flown	Total	Fatal
1975	28,799,000	0.64	0.48
1976	30,476,000	0.54	0.32
1977	31,578,000	0.50	0.34
1978	34,887,000	0.54	0.39
1979	38,641,000	0.43	0.32
1980	36,402,000	0.38	0.28
1981	36,803,000	0.45	0.31
1982	32,095,000	0.39	0.31
1983	31,048,000	0.37	0.29
1984	31,510,000	0.31	0.24
1985	30,590,000	0.31	0.23
1986	29,318,000	0.23	0.18
1975-1986	392,147,000	0.43	0.31

* For the years 1975 through 1981, the Safety Board coding system contained a code for "Continued VFR flight into adverse weather conditions" which is not necessarily the same as the later coding system's "VFR flight into IMC." The absence of a detectable discontinuity in accident rates across the boundary between the two coding systems supports the assumption that the two codes have been used to indicate the same condition.

CHART 1 - ACCIDENTS
ALL GA AND VFR FLIGHT INTO IMC
1975 - 1986

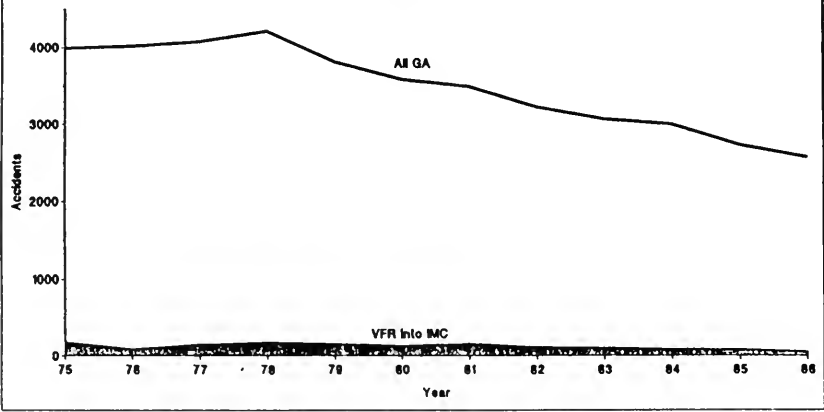


CHART 2 - ACCIDENT RATES
ALL GA AND VFR FLIGHT INTO IMC
1975 - 1986

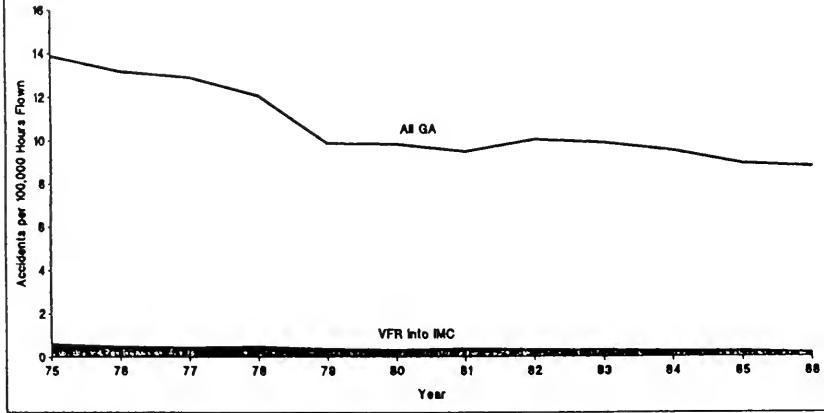


CHART 3 - FATAL ACCIDENTS
ALL GA AND VFR FLIGHT INTO IMC
 1976 - 1986

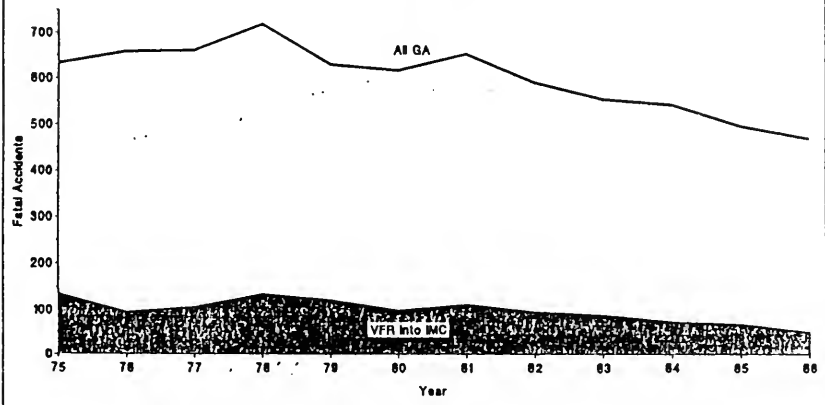
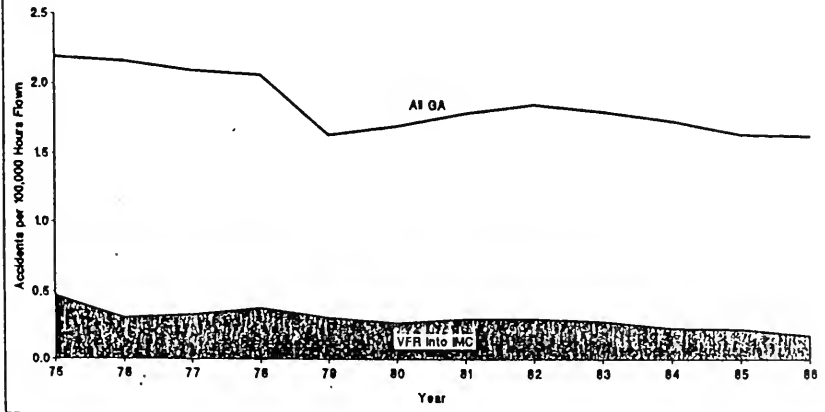


CHART 4 - FATAL ACCIDENT RATES
ALL GA AND VFR FLIGHT INTO IMC
 1975 - 1986



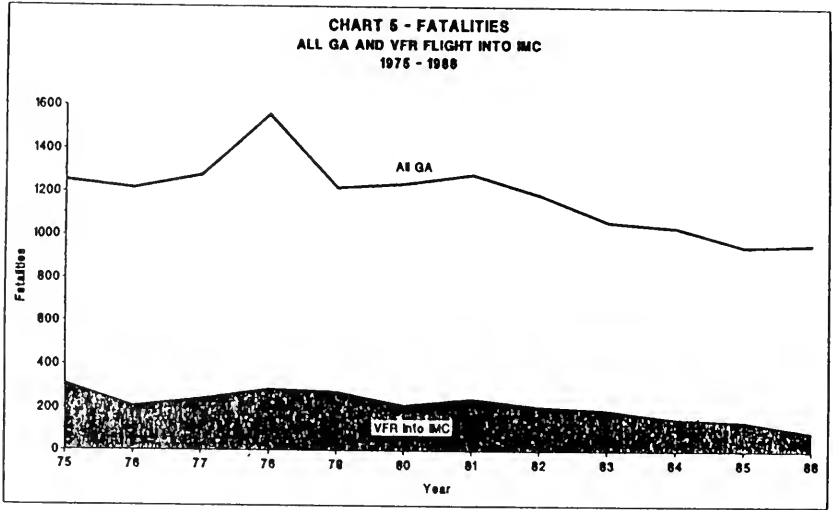


TABLE 3 - PERSONS BY POSITION AND DEGREE OF INJURY
VFR FLIGHT INTO IMC ACCIDENTS

Position	Degree of Injury				Total
	Fatal	Serious	Minor	None	
Pilot	270	31	23	37	361
Copilot	7	1	0	0	8
Dual student	2	0	0	0	2
Passenger	304	35	31	49	419
Total aboard	583	67	54	86	790
Person on ground	0	1	0	0	1
Grand total	583	68	54	86	791
Percent	73.7	8.6	6.8	10.9	

TABLE 4 - CAUSE AND FACTOR CITATIONS*
VFR FLIGHT INTO IMC ACCIDENTS

	Number of Citations	
	Cause or Factor	Cause
Aircraft		
Wing	9	4
Fluid, fuel	8	3
Wing, spar	3	1
Flight control, stabilator	3	0
Fuel system, carburetor	3	0
Wing, bracing strut	3	0
Flight/nav instruments, directional gyro	2	1
Landing gear, main gear	2	1
Comm/nav equipment	2	0
Flight/nav instruments, attitude indicator	2	0
Landing gear, nose gear	2	0
Vacuum system	2	0
Aircraft performance	1	1
Carburetor heat control, cable	1	1
Electrical system	1	1
Flight control, elevator	1	1
Fuel system, ram air	1	1
Autopilot/flight director	1	0
Door, passenger	1	0
Engine assembly	1	0
Flight/nav instruments, heading indicator	1	0
Fuselage	1	0
Instrument lights	1	0
Landing gear, nose gear assembly	1	0
	-----	-----
Total Aircraft Causes / Factors	53	15
Facility		
Air navigation aids, VOR	1	0
Airport facilities, rotating beacon	1	0
Airport facilities, runway edge lights	1	0
Approach aids	1	0
Enroute charts	1	0
	-----	-----
Total Facility Causes / Factors	5	0

* The numbers given in this table represent citations by the Safety Board of each probable cause or related factor in the 361 accidents reviewed. These numbers may be slightly higher than the number of accidents they represent. In relatively infrequent cases, a factor may be cited more than once in order to encode the sequence of events to accurately reflect the accident scenario.

TABLE 4 (Continued) - CAUSE AND FACTOR CITATIONS
VFR FLIGHT INTO IMC ACCIDENTS

	Number of Citations	
	Cause or Factor	Cause
Environment		
Terrain condition	225	4
Low ceiling	216	1
Fog	167	2
Clouds	93	2
Dark night	83	3
Rain	82	3
Obscuration	71	0
Snow	51	0
Tree(s)	40	1
Thunderstorm	22	2
Turbulence	19	0
Icing conditions	14	0
Night	12	0
Whiteout	12	0
Dusk	11	0
Wire, transmission	10	0
Turbulence(thunderstorms)	9	2
Haze	9	0
High wind	9	0
Guy wire	6	0
Gusts	5	0
Below approach minimums	4	0
Turbulence in clouds	4	0
Unfavorable wind	4	0
Dawn	3	0
Fence	3	0
Lightning	3	0
Utility pole	3	0
Mountain wave	2	0
Windshear	2	0
Carburetor icing conditions	1	0
Crosswind	1	0
Daylight	1	0
Downdraft	1	0
Elect tower(marked)	1	0
High density altitude	1	0
Other person	1	0
Residence	1	0
Runway light	1	0
Vehicle	1	0
	-----	----
Total Environment Causes / Factors	1204	20

TABLE 4 (Continued) - CAUSE AND FACTOR CITATIONS
VFR FLIGHT INTO IMC ACCIDENTS

	Number of Citations	
	Cause or Factor	Cause
Flightcrew		
<u>Obtaining and Using Weather Information</u>		
VFR flight into IMC	364	340
Flight into known adverse weather	100	49
Weather evaluation	49	35
Preflight briefing service	40	17
Weather forecast	7	4
In flight briefing service	6	4
In flight weather advisories	3	2
Hazardous weather advisory	2	1
Weather observation	2	1
In flight weather avoidance assistance	1	1
Meteorological service	1	0
Subtotal	575	454
<u>Aircraft Handling</u>		
Airplane handling	64	63
Proper altitude	40	40
Became lost/disoriented	36	26
Clearance	29	29
Design stress limits of aircraft	25	25
Altitude	23	23
Remedial action	16	14
Precautionary landing	14	6
Visual lookout	13	10
Airspeed	12	12
Procedures/directives	12	10
Flight to alternate destination	11	4
Descent	7	6
Stall	6	6
Directional control	6	5
IFR procedure	5	3
Pull-up	4	4
Unsuitable terrain	4	3
VFR procedures	4	3
Climb	3	3
Spiral	3	3
Stall/spin	3	3
Low pass	3	2
Planned approach	3	2
Refueling	3	1
Flight controls	2	2
Fuel supply	2	2

TABLE 4 (Continued) - CAUSE AND FACTOR CITATIONS
VFR FLIGHT INTO IMC ACCIDENTS

	Number of Citations	
	Cause or Factor	Cause
Flightcrew (Continued)		
<u>Aircraft Handling (Continued)</u>		
Maneuver	2	2
Missed approach	2	2
Stall/mush	2	2
Airspeed(Vs)	2	1
Improper use of equipment/aircraft	2	1
Proper glidepath	2	1
Radio communications	2	1
Total	2	1
Airspeed(Vmc)	1	1
Compensation for wind conditions	1	1
Decision height	1	1
Emergency procedure	1	1
Proper alignment	1	1
Proper descent rate	1	1
Proper touchdown point	1	1
Seat belt	1	0
	-----	-----
Subtotal	377	328
<u>Planning and Decision Making</u>		
In-flight planning/decision	92	72
Preflight planning/preparation	86	46
Judgement	30	22
Planning-decision	21	12
Operation with known deficiencies in equipment	7	3
Improper decision	2	2
Maintenance,100 hour inspection	1	0
	-----	-----
Subtotal	239	157
<u>Psychological and Physiological</u>		
Spatial disorientation	92	76
Over confidence in personal ability	68	15
Self-induced pressure	23	8
Physical impairment(alcohol)	8	8
Visual/aural perception	6	2
Over confidence in aircraft's ability	4	0
Fatigue	3	0
Pressure induced by others	3	0
Under confidence in personal ability	3	0
Visual/aural detection	3	0

TABLE 4 (Continued) - CAUSE AND FACTOR CITATIONS
VFR FLIGHT INTO IMC ACCIDENTS

	Number of Citations	
	Cause or Factor	Cause
<u>Flightcrew (Continued)</u>		
<u>Psychological and Physiological (Continued)</u>		
Pressure	2	2
Diverted attention	2	1
Mental performance overload	1	1
Anxiety/apprehension	1	0
Inattentive	1	0
Physical impairment(drugs)	1	0
Physical impairment(hypertension)	1	0
	-----	-----
Subtotal	222	113
<u>Training and Experience</u>		
Lack of total instrument time	96	20
Lack of total experience	13	4
Lack of recent instrument time	7	1
Qualification	5	0
Lack of total experience in kind of aircraft	2	1
Experience	2	0
Inadequate recurrent training	2	0
Lack of total experience in type of aircraft	2	0
Improper initial training	1	1
Inadequate transition/upgrade training	1	1
Lack of familiarity with aircraft	1	1
Lack of total experience in type operation	1	1
Inadequate training	1	0
Lack of recent experience	1	0
Lack of recent experience in type of aircraft	1	0
Lack of recent total experience	1	0
	-----	-----
Subtotal	137	30
<u>Miscellaneous</u>		
Lack of familiarity with geographic area	4	1
Control tower service	1	0
Information insufficient	1	0
Instructions, written/verbal	1	0
Radar assistance to VFR aircraft	1	0
Stolen aircraft/unauthorized use	1	0
	-----	-----
Subtotal	9	1
	-----	-----
Total Flightcrew Causes / Factors	1559	1083

TABLE 4 (Continued) - CAUSE AND FACTOR CITATIONS
VFR FLIGHT INTO IMC ACCIDENTS

	Number of Citations	
	Cause or Factor	Cause
Other Person		
Weather forecast	3	2
Meteorological service	2	0
Preflight briefing service	2	0
Clearance	1	1
Aircraft	1	0
Lack of familiarity with geographic area	1	0
Miscellaneous equipment	1	0
Procedures/directives	1	0
Radio communications	1	0
Weather evaluation	1	0
Total Other Person Causes / Factors	14	3
Total All Causes / Factors	2835	1121

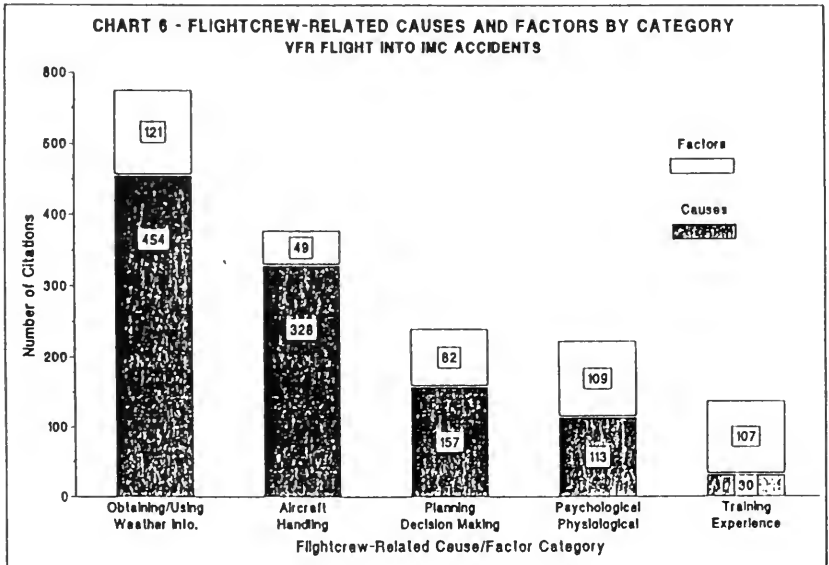


TABLE 5 - PILOTS BY AGE GROUP
VFR FLIGHT INTO IMC ACCIDENTS, ALL GENERAL AVIATION ACCIDENTS,
AND ACTIVE GENERAL AVIATION PILOTS

Age group of pilot	VFR Flight into IMC Pilots		Other Pilot Samples (Percent)	
	Number	Percent*	Pilots in all GA Accidents†	Active GA Pilots**
15-19	1	0.3	1.2	1.8
20-24	20	5.6	6.3	8.6
25-29	37	10.3	10.4	12.0
30-34	47	13.1	13.7	13.5
35-39	41	11.4	16.0	14.7
40-44	52	14.5	13.9	13.8
45-49	54	15.0	10.7	10.2
50-54	49	13.6	10.1	10.8
55-59	29	8.1	8.5	6.8
60 and over	29	8.1	9.3	7.8
Not reported	2	--	--	--
Total Pilots	361			

* Based on 359 pilots whose age was reported

† Accidents which occurred between 1983 and 1986

** "1984 General Aviation Pilot and Aircraft Activity Survey", Federal Aviation Administration, 1985, p. 6.

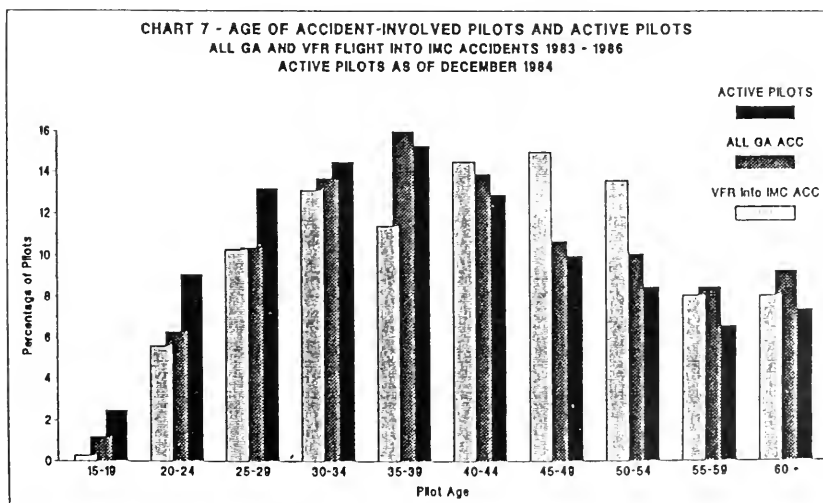


TABLE 6 - PILOTS BY CERTIFICATE AND AGE GROUP
VFR FLIGHT INTO IMC ACCIDENTS

Age group of pilot	Pilot Certificate					Pilots	
	Student	Private	Comm'l	Airline Transpt	None	Total	Percent
15-19	1	0	0	0	0	1	0.3
20-24	2	15	3	0	0	20	5.5
25-29	4	25	5	2	1	37	10.2
30-34	2	36	7	2	0	47	13.0
35-39	3	27	8	3	0	41	11.4
40-44	1	41	8	2	0	52	14.4
45-49	1	36	12	5	0	54	15.0
50-54	2	30	14	3	0	49	13.6
55-59	0	22	6	1	0	29	8.0
60-64	0	12	3	0	0	15	4.2
65 and over	1	9	4	0	0	14	3.9
Not reported	0	2	0	0	0	2	0.6
Total pilots	17	255	70	18	1	361	
Percent	4.7	70.6	19.4	5.0	0.2		

TABLE 7 - PILOTS BY CERTIFICATE AND TYPE OF FLIGHT PLAN FILED
VFR FLIGHT INTO IMC ACCIDENTS

Pilot Certificate	Type of Flight Plan Filed			Pilots	
	None	VFR*	IFR	Total	Percent
Student	16	1	0	17	4.7
Private	207	43	5	255	70.6
Commercial	57	9	4	70	19.4
Airline transport pilot	7	8	3	18	5.0
Not reported	1	0	0	1	0.3
Total pilots	288	61	12	361	
Percent	79.8	16.9	3.3		

* Includes those filed as Company VFR.

**TABLE 8 - PILOTS BY CERTIFICATE AND PHASE OF FLIGHT
VFR FLIGHT INTO IMC ACCIDENTS**

Phase of Flight*	Pilot Certificate					Pilots	
	Stu- dent	Pri- vate	Comm'l	ATP	Not rept	Total	Percent
Takeoff	4	20	2	0	0	26	7.2
Climb	0	14	6	0	0	20	5.5
Cruise	8	169	35	12	1	225	62.3
Descent	2	15	3	0	0	20	5.5
Approach	1	13	8	4	0	26	7.2
Landing	0	20	12	2	0	35	9.7
Unknown	1	4	1	0	0	6	1.7
Total Pilots	17	255	70	18	1	361	
Percent	4.7	70.6	19.4	5.0	0.3		

* The phase of flight of the first accident occurrence

**TABLE 9 - PILOTS BY TOTAL FLIGHT TIME
VFR FLIGHT INTO IMC AND GENERAL AVIATION ACCIDENTS**

Total Time (in hours)	Study pilots		Pilots in all GA accidents (1983-1986)	
	No.	Percent*	No.	Percent*
Under 100	30	9.3	1,498	13.8
100 - 199	56	17.4	1,033	9.5
200 - 299	30	9.3	739	6.8
300 - 399	22	6.8	649	6.0
400 - 499	28	8.7	475	4.4
500 - 999	46	14.3	1,518	14.0
1000 - 1499	16	5.0	854	7.9
1500 - 1999	18	5.6	584	5.4
2000 or more	76	23.6	3,466	32.0
Not reported	39	---	723	---
Total pilots	361	100.0	11,539	100.0

* Based on 322 study pilots and 10,818 general aviation accident involved pilots for whom total flight time is known.

TABLE 10 - PILOTS BY EXPERIENCE IN MAKE AND MODEL
VFR FLIGHT INTO IMC ACCIDENTS

Experience in Make and Model (in hours)	Pilots	
	No.	Percent*
less than 10	18	7.5
10 - 19	12	5.0
20 - 29	22	9.2
30 - 39	7	2.9
40 - 49	6	2.5
50 - 99	46	19.2
100 - 199	41	17.1
200 - 299	22	9.2
300 - 399	13	5.4
400 - 499	4	1.7
500 - 999	19	7.9
1000 - 1499	10	4.2
1500 - 1999	5	2.1
2000 or more	15	6.3
Not reported	121	---
All pilots	361	

* Based on the 240 pilots for whom experience in make and model is known.

TABLE 11 - AIRCRAFT BY PILOT OWNERSHIP STATUS AND AIRCRAFT TYPE
VFR FLIGHT INTO IMC ACCIDENTS

Aircraft Type	Pilot Ownership Status							Aircraft	
	Owner	Lessee	Renter	Bor- rower	Unauth- orized	Em- ployee	Not rept	Total	Percent
Airplane	219	4	63	17	1	22	13	339	93.9
Single engine	195	3	62	17	1	13	9	300	83.1
Multi-engine	24	1	1	0	0	9	4	39	10.8
Helicopter	5	0	1	1	0	15	0	22	6.1
Single engine	5	0	1	1	0	12	0	19	5.3
Multi-engine	0	0	0	0	0	3	0	3	0.8
Total aircraft	224	4	64	18	1	37	13	361	
Percent	62.0	1.1	17.7	5.0	0.3	10.2	3.6		

TABLE 12 - PERCENTAGE OF PILOTS WITH INSTRUMENT RATING
BY TYPE OF PILOT CERTIFICATE
VFR FLIGHT INTO IMC PILOTS AND ACTIVE GA PILOTS

Type of pilot Certificate	Percent with Instrument Rating	
	Study Pilots	Active GA Pilots*
Student	0.0	0.0
Private	7.1	34.0
Commercial	68.6	88.9
Airline transport	100.0	97.9
Total pilots	23.3	70.1

* "1984 General Aviation Pilot and Aircraft Activity Survey", Federal Aviation Administration, 1985, p. 8.

TABLE 13 - PILOTS BY INSTRUMENT RATING AND TYPE OF AIRCRAFT
VFR FLIGHT INTO IMC ACCIDENTS

Aircraft Type	Pilot Instrument Rating				Study Pilots	Percent	
	No	Yes	Airpl	Helic		Study Aircraft	Active GA Pilots' Aircraft*
Fixed wing aircraft	266	73	(73	1) ⁺	339	93.9	96.7
Single engine	250	50	(50	1)	300	83.1	78.5
Multi-engine	16	23	(23	0)	39	10.8	18.2
Helicopter	11	11	(7	8)	22	6.1	2.0
Single engine	11	8	(5	6)	19	5.3	
Multi-engine	0	3	(2	2)	3	0.8	
Other (Gliders, etc)	0	0			0	0.0	1.3
Total Pilots	277	84	(80	9)	361	100.0	100.0
Percent	76.7	23.3					

* "1984 General Aviation Pilot and Aircraft Activity Survey", Federal Aviation Administration, 1985, p. 14.

⁺ A pilot may hold an instrument rating in more than one aircraft type.

TABLE 14 - PILOT INSTRUMENT EXPERIENCE
VFR FLIGHT INTO IMC ACCIDENTS

Instrument time (actual + simulated, in Hours)	Pilots	
	No.	Percent*
Less than 10	92	48.9
10 - 19	16	8.5
20 - 29	9	4.8
30 - 39	7	3.7
40 - 49	6	3.2
50 - 59	5	2.7
60 - 69	2	1.1
70 - 79	5	2.7
80 - 89	5	2.7
90 - 99	3	1.6
100 - 199	13	6.9
200 - 299	10	5.3
300 - 399	4	2.1
400 - 499	1	0.5
500 - 999	5	2.7
1000 - 1499	4	2.1
1500- or more	1	0.5
Not reported	173	---
All pilots	361	

*Based on the 188 pilots for whom instrument experience was known.

TABLE 15 - PILOTS BY METHOD AND SOURCE OF WEATHER BRIEFING
VFR FLIGHT INTO IMC ACCIDENTS

Source* of Weather Briefing	Method of Briefing						Pilots	
	In persn	Tele- type	Tele- phone	Acft radio	TV/ radio	Not rept	Total	Percent
No record of briefing†	0	0	0	0	0	143	143	39.6
National Weather Service	3	0	6	1	0	1	9	2.5
Flight service station	27	3	142	26	0	7	191	52.9
PAIWAS**	0	1	2	0	0	0	3	.8
Company	1	0	0	0	0	0	1	.3
TV/radio weather	0	0	0	1	1	0	2	.6
Military	0	0	1	1	1	0	2	.6
Source not reported	0	0	1	3	1	9	12	3.3
Total pilots	29	4	149	30	3	160	361	
Percent	8.0	1.1	41.3	8.3	0.8	44.3		

*Pilots may have received weather briefings from more than one source.

† No record of briefing does not necessarily mean that the pilot had received no weather information. He may have relied on an unofficial weather forecasting source or he may have obtained an automated weather briefing for which no record is maintained. In the event that a pilot is killed, the source of weather briefing received, if any, may not obtainable.

**Pilot Automated Telephone Weather Answering Service.

TABLE 16 - AIRCRAFT BY PURPOSE OF FLIGHT AND ACCIDENT INJURY INDEX
VFR FLIGHT INTO IMC ACCIDENTS

Purpose of Flight	Injury Index*				Aircraft	
	Fatal	Serious	Minor	None	Total	Percent
Personal	202	26	13	28	269	74.5
Business	53	4	1	4	62	17.2
Instructional	4	0	0	1	5	1.4
Executive/corporate	3	0	0	0	3	0.8
Aerial application	0	1	0	0	1	0.3
Other use	14	3	4	0	21	5.8
Total aircraft	276	34	18	33	361	
Percent	76.5	9.4	5.0	9.1		

* The most serious injury sustained by anyone involved in an accident.

TABLE 17 - ACCIDENTS BY LOCATION AND LIGHT CONDITIONS
VFR FLIGHT INTO IMC STUDY ACCIDENTS

Light Conditions	Accident Location				Accidents	
	Off air-port/air-strip	On air-port	On air-strip	Not Rept	Total	Percent
Dawn	6	2	0	0	8	2.2
Daylight	188	3	1	9	201	55.7
Night (dark)	102	11	0	6	119	33.0
Night (bright)	5	0	0	1	6	1.7
Dusk	21	2	0	1	24	6.6
Not reported	3	0	0	0	3	0.8
Total Accidents	325	18	1	17	361	
Percent	90.0	5.0	0.3	4.7		

TABLE 18 - AIRCRAFT BY TYPE AND TYPE OF CLEARANCE RECEIVED
VFR FLIGHT INTO IMC ACCIDENTS

Type of Clearance	Aircraft Type		Aircraft	
	Air-plane	Heli-copter	Total	Percent
None	301	18	319	88.4
VFR	15	2	17	4.7
Special VFR	7	1	8	2.2
IFR	7	0	7	1.9
Cruise	1	0	1	0.3
VFR flight following	5	0	5	1.4
Not reported	3	1	4	1.1
Total aircraft	339	22	361	
Percent	93.9	6.1		

TABLE 19 - AIRCRAFT BY TYPE OF FLIGHT PLAN FILED AND IFR EQUIPAGE
VFR FLIGHT INTO IMC ACCIDENTS

Type of Flight Plan Filed	IFR Equipage			Aircraft	
	Yes	No	Not reptd	Total	Per-cent
None	201	59	24	284	78.7
Visual flight rules (VFR)	41	9	5	55	15.2
Instrument flight rules (IFR)	12	0	0	12	3.3
Company (VFR)	4	2	0	6	1.7
Not reported	2	2	0	4	1.1
Total Aircraft	260	72	29	361	
Percent	72.0	19.9	8.0		

TABLE 20 - ACCIDENTS BY VISIBILITY RESTRICTIONS AND VISIBILITY
VFR FLIGHT INTO IMC ACCIDENTS

Visibility (in statute miles)	Visibility Restrictions*								Accidents		
	None	Haze	Smoke	Fog	Ground fog	Blown spray	Blown dust	Blown snow	Not rept	Total	Per-cent
Less than 0.5	0	3	0	31	1	1	0	4	1	36	10.0
0.5 - 0.9	1	1	0	27	2	0	0	5	5	39	10.8
1.0 - 1.9	2	3	0	29	1	0	0	4	3	39	10.8
2.0 - 2.9	4	5	1	22	1	0	0	1	3	34	9.4
3.0 - 3.9	3	5	0	12	0	0	0	0	3	20	5.5
4.0 - 4.9	1	1	0	10	0	0	0	0	0	12	3.3
5.0 and over	46	12	2	35	1	1	1	5	7	103	28.5
Not reported	4	2	0	46	2	0	0	5	21	78	21.6
Total accidents	61	32	3	212	8	2	1	24	43	361	
Percent	16.9	8.9	0.8	58.7	2.2	0.6	0.3	6.6	11.9		

* More than one visibility restriction may be reported for each accident.

TABLE 21 - AIRCRAFT BY MAKE AND MODEL
VFR FLIGHT INTO IMC ACCIDENTS

Make	Model	Number
----	----	-----
Aero Commander	520, 680	2
Aerospatale	SA365N	1
Beech	23-24	1
	33, 35, 36	19
	45	1
	55, 95-55, 58	4
	76	1
	200	1
Bell	206B, 206L	9
	212	1
	UH-1	1
Bellanca	14-19	1
	17-30, 17-31	2
	8KCAB	1
Boeing	A75N1	1
Britten Norman	BN-2A-8	1
Cessna	120, 140, 150 series	27
	170 series	51
	180 series	38
	195	1
	200 series	31
	300 series	10
	400 series	4
Champion	7ECA	1
DeHavilland	Beagle 206	1
Douglas	AD-4NA	1
Enstrom	F-28, 280	2
Ercoupe	415-C	1
Fairchild	BC-12, FH1100	2
Gulfstream (Grumman)	AA-5, 681	9
Helio	H-295	1
Homebuilt	Varieze	1
	Hart-Thorp, T-18 Tiger	1
	Pitts, S-1	1
	Teratorn Arcrft, Tierra II	1
Maule	M-4, M-5	2
McDonnell-Douglas (Hughes)	269, 369	3
Mitsubishi	MU-2B	2
Mooney	M20	9
Navion	Rangemaster	1
North American Rockwell	112	1
Partenavia	P68	1

TABLE 21 (Continued) - ACCIDENT AIRCRAFT BY MAKE/MODEL

Make -----	Model -----	Number -----
Piper	PA-18, PA-22	6
	PA-23	2
	PA-24	5
	PA-28, PA-32 series	76
	PA-60 series	1
	PA-30	2
	PA-31	2
	PA-34	4
	PA-38	3
Robinson	R-22	3
Ryan	ST-A	1
Sikorsky	S76	1
Stinson	106, 150, SR6	5
Total Aircraft		361

TABLE 22 - ACCIDENTS BY LIGHT CONDITION AND TYPE OF PRECIPITATION
VFR FLIGHT INTO IMC ACCIDENTS

Type of Precipitation*	Light Condition						Accidents	
	Dawn	Day- light	Night dark	Night brite	Dusk	Not rept	Total	Percent
None	6	84	58	4	9	0	161	44.6
Rain	1	40	27	1	9	1	79	21.9
Snow	1	29	19	0	4	0	53	14.7
Hail	0	1	3	0	0	0	4	1.1
Rain showers	0	11	5	0	0	0	16	4.4
Freezing rain	0	0	0	1	1	0	2	0.6
Snow showers	0	13	2	0	1	0	16	4.4
Drizzle	0	17	10	0	0	0	27	7.5
Freezing drizzle	0	0	0	0	1	0	1	0.3
Not reported	0	12	4	0	0	2	18	5.0
Total accidents	8	201	119	6	24	3	361	
Percent	2.2	55.7	33.0	1.7	6.6	0.8		

* More than one precipitation type may be reported for an accident

TABLE 23 - AIRCRAFT BY DAMAGE AND DAY OF WEEK
VFR FLIGHT INTO IMC ACCIDENTS

Day of Week	Aircraft Damage				Aircraft	
	None	Minor	Subs	Dest	Total	Percent
Sunday	0	0	16	46	62	17.2
Monday	0	0	9	42	51	14.1
Tuesday	0	0	4	30	34	9.4
Wednesday	0	0	3	46	49	13.6
Thursday	0	1	10	39	50	13.9
Friday	0	0	12	46	58	16.1
Saturday	1	0	14	42	57	15.8
Total aircraft	1	1	68	291	361	
Percent	0.3	0.3	18.8	80.6		

TABLE 24 - ACCIDENTS BY CEILING AND VISIBILITY
VFR INTO IMC ACCIDENTS

Visibility (in statute miles)	Lowest Ceiling (in feet above ground level)								Accidents	
	None	<100	100- 199	200- 299	300- 399	400- 499	500 & over	Not rept	Total	Per- cent
Less than 0.5	0	0	7	6	2	0	6	15	36	10.0
0.5 - 0.9	1	0	6	8	4	0	11	9	39	10.8
1.0 - 1.9	2	0	0	6	9	3	9	10	39	10.8
2.0 - 2.9	2	0	2	0	6	5	16	3	34	9.4
3.0 - 3.9	0	0	0	0	1	0	15	4	20	5.5
4.0 - 4.9	0	0	0	1	1	1	7	2	12	3.3
5.0 and over	2	1	3	1	1	2	77	16	103	28.5
Not reported	0	3	2	3	1	1	10	58	78	21.6
Total Accidents	7	4	20	25	25	12	151	117	361	
Percent	1.9	1.1	5.5	6.9	6.9	3.3	41.8	32.4		

TABLE 25 - ACCIDENTS BY DEGREE OF INJURY AND STATE
VFR FLIGHT INTO IMC ACCIDENTS

State	Degree of Injury				Accidents	
	None	Minor	Ser-ious	Fatal	Total	Percent
Alabama	0	0	0	4	4	1.1
Alaska	4	3	5	9	21	5.8
Arizona	0	0	0	4	4	1.1
Arkansas	0	0	1	4	5	1.4
California	6	3	6	49	64	17.7
Colorado	1	0	3	16	20	5.5
Connecticut	0	0	0	4	4	1.1
Delaware	0	0	0	1	1	0.3
Florida	0	0	1	16	17	4.7
Georgia	0	0	0	4	4	1.1
Hawaii	0	0	0	1	1	0.3
Idaho	0	0	1	7	8	2.2
Illinois	0	0	0	7	7	1.9
Indiana	1	0	0	3	4	1.1
Iowa	0	0	0	3	3	0.8
Kansas	0	0	0	6	6	1.7
Kentucky	2	0	0	2	4	1.1
Louisiana	2	3	0	4	9	2.5
Massachusetts	0	0	0	2	2	0.6
Michigan	1	0	1	5	7	1.9
Minnesota	1	0	2	3	6	1.7
Mississippi	0	1	1	0	2	0.6
Missouri	2	1	0	4	7	1.9
Montana	1	0	0	4	5	1.4
Nebraska	1	0	0	5	6	1.7
Nevada	0	0	0	3	3	0.8
New Hampshire	0	0	0	2	2	0.6
New Jersey	0	0	0	1	1	0.3
New Mexico	1	0	0	11	12	3.3
New York	0	0	2	6	8	2.2
North Carolina	2	1	2	2	7	1.9
North Dakota	1	0	0	3	4	1.1
Ohio	1	0	0	2	3	0.8
Oklahoma	0	2	0	4	6	1.7
Oregon	1	0	0	6	7	1.9

**TABLE 25 (Continued) - ACCIDENTS BY DEGREE OF INJURY AND STATE
VFR FLIGHT INTO IMC ACCIDENTS**

State	Degree of Injury				Accidents	
	None	Minor	Ser-ious	Fatal	Total	Percent
Pennsylvania	1	0	0	4	5	1.4
Puerto Rico	0	0	0	1	1	0.3
South Dakota	0	1	1	3	5	1.4
Tennessee	0	1	1	7	9	2.5
Texas	0	0	1	18	19	5.3
Utah	2	1	3	4	10	2.8
Vermont	1	0	0	3	4	1.1
Virginia	0	1	0	6	7	1.9
Washington	0	0	1	11	12	3.3
West Virginia	0	0	1	3	4	1.1
Wisconsin	0	0	1	3	4	1.1
Wyoming	1	0	0	6	7	1.9
Total accidents	33	18	34	276	361	
Percent	9.1	5.0	9.4	76.5		

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ JIM BURNETT
Member

/s/ JOHN K. LAUBER
Member

/s/ JOSEPH T. NALL
Member

James L. Kolstad, Acting Chairman, disapproved and Lemoine V. Dickinson, Jr., Member, dissented. Member Dickinson filed the following concurring and dissenting statement.

Although I concur with the information that is presented in the narrative and the tables relative to accidents involving VFR into IMC conditions, I do not believe that we have analyzed the reasons that these accidents have occurred or the reasons why the numbers of accidents have decreased over time. It was my understanding that this was the purpose of this safety study and not just a compilation of several years worth of accident data. Therefore, I will approve the compilation of data, but would have preferred that the study indicate the reasons behind these changes.

February 8, 1989

APPENDIX A

TITLE 14 CODE OF FEDERAL REGULATION 91.105
BASIC VFR WEATHER MINIMUMS

VISUAL FLIGHT RULES

§ 91.105 Basic VFR weather minimums.

(a) Except as provided in § 91.107, no person may operate an aircraft under VFR when the flight visibility is less, or at a distance from clouds that is less, than that prescribed for the corresponding altitude in the following table:

Altitude	Flight visibility	Distance from clouds
1,200 feet or less above the surface (regardless of MSL altitude)—		
Within controlled airspace	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
Outside controlled airspace	1 statute mile except as provided in § 91.105(b)	Clear of clouds
More than 1,200 feet above the surface but less than 10,000 feet MSL—		
Within controlled airspace	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
Outside controlled airspace	1 statute mile	500 feet below 1,000 feet above 2,000 feet horizontal
More than 10,000 feet above the surface and at or above 10,000 feet MSL—		
.....	5 statute miles	1,000 feet below 1,000 feet above 1 mile horizontal

(b) When the visibility is less than one mile, a helicopter may be operated outside controlled airspace at 1,200 feet or less above the surface if operated at a speed that allows the pilot adequate opportunity to see any air traffic or other obstruction in time to avoid a collision.

(c) Except as provided in § 91.107, no person may operate an aircraft, under VFR, within a control zone beneath the ceiling when the ceiling is less than 1,000 feet.

(d) Except as provided in § 91.107, no person may take off or land an aircraft, or enter the traffic pattern of an

airport, under VFR, within a control zone—

(1) Unless ground visibility at that airport is at least 3 statute miles; or

(2) If ground visibility is not reported at that airport, unless flight visibility during landing or takeoff, or while operating in the traffic pattern, is at least 3 statute miles.

(e) For the purposes of this section, an aircraft operating at the base altitude of a transition area or control area is considered to be within the airspace directly below that area.

(Amdt. 91-51, 33 FR 2992, Feb. 15, 1968)

APPENDIX B

SAFETY BOARD AVIATION ACCIDENT DATA SYSTEM

In 1983, the Safety Board implemented an improved and more comprehensive data base design. The Safety Board developed new accident data collection forms and designed a data base for storage and retrieval of accident data. The resulting Form 6120.4 consists of a "core" form for each investigation and 21 supplement forms each of which is completed if specified accident parameters are present.

A key component of the revised aviation accident data system is the Safety Board "sequence of events" coding system. This system replaced the previously-used cause and factor coding scheme in which 10 of the approximately 1,360 predefined items (i.e., aircraft components, pilot actions) could be associated with an accident to document its causes and related factors. The sequence of events was designed to offer the investigator greater flexibility when determining the probable causes and related factors. The new system consists of approximately 2,000 "person," "modifier," and "subject" codes that are combined to form "findings" (e.g., pilot-in-command-inadvertent-VFR flight into IMC). Each finding may be designated a cause or factor of the accident or may be included only to complete the coded description of the accident sequence of events.

ICING OF PIPER MALIBU AIRCRAFT

Mr. VOGT. Now, while weather icing was not involved, icing was involved in a series of accidents involving the Piper Malibu aircraft. Pitot tube icing was a major factor in causing a series of these aircraft to lose some of their flight instruments and, we think, was causal in the loss of control by pilots. But that is a little bit different aspect. It is a new involvement in general aviation of the icing question.

NAVIGATIONAL INTERFERENCE FROM ELECTRONIC DEVICES

Senator LAUTENBERG. I was just handed a piece of paper that talks about the navigational interference from electronic devices. The subject of cellular phones, et cetera, in commercial aircraft has been much in the news these days. And I wonder whether any of your people had begun to look at this in terms of its interference with the navigational systems. It does not have to get to be the cause of an accident in order for you look at it anyway. I am curious as to whether or not there has been anything, or whether the rules ought to be promulgated that say this should not be taking place? Whether you have reviewed it thoroughly enough to come up, I am sure the FAA is very much concerned with that now.

Mr. VOGT. We are aware of the issue. We have not gone into it in any detail as yet.

CRUISE SHIP SAFETY

Senator LAUTENBERG. In terms of marine safety, we are concerned about whether foreign flags present more of a problem because of crew qualifications and because of the different nations' regulations. So, I just want to just review some of those things. I have been looking at this recently with some of the commercial passenger carriers. There is quite a bit of traffic going on there. And also, from my position as a member of the Committee on Environment and Public Works and coauthor of a bill to make certain that we have funds available to correct damage resulting from

tanker spills, et cetera. I wonder whether you have looked at this problem closely enough to comment on the foreign flag carriers observance of safety regulations. Do you find that the foreign flag nations are prepared to accept and implement the Board's recommendations in this regard in a timely fashion?

Mr. VOGT. Well, as you know, we have had concerns for a number of years about foreign flag passenger vessels, and our ability to impose, in particular, safer fire regulations on them. And for a number of years we urged the Coast Guard to unilaterally adopt fire regulations and apply them to foreign flagged vessels.

We are very pleased to say that in the last 3 years, the Coast Guard has aggressively pursued, at the IMO, regulations for foreign flag vessels. And the items that we were putting forward for unilateral action have now been enacted. We think this is a step in the right direction.

We still have a couple of issues pending at the IMO which the Coast Guard is pursuing. One, in particular, has to do with lifejackets and their location. In most cases, lifejackets are stored in the passenger cabins, and this has resulted in a couple of incidents of concern. One was on the Mississippi River where a passenger ship went aground and everybody went below to get his or her life jacket when they should have been on the deck getting ready to get off. The Safety Board fosters the position that lifejackets should be stored in the cabins and at the lifeboats. That is still an open issue at the IMO.

There are other issues we are urging the Coast Guard to take to the IMO. One has to do with language speaking abilities of foreign flag vessel crews. The Safety Board has taken the position that at least 75 percent of the crew needs to be able to communicate with one another in a common language, and that 75 percent of those who are involved in safety matters on vessels operating out of U.S. ports of call need to be English speaking. This has been quite controversial, and we are anxious to see some progress but none has been made as yet.

We also have an outstanding issue with the Coast Guard involving firefighter training, and the requirement that personnel involved in fire fighting operations have specific training. But, on balance, I would say a lot of progress has been made in the last 3 or 4 years.

CRUISE SHIP SAFETY

Senator LAUTENBERG. Are you satisfied, though, that the IMO will be able to get the kind of response that you think is necessary?

Mr. VOGT. Well, I do not know that we are satisfied with that yet, but we are certainly a lot more satisfied than we were several years ago. We have seen some important progress, and some increased willingness on the part of the foreign flag passenger vessels to accede to these safety requirements. I think it would probably be too much to say we are satisfied.

Senator LAUTENBERG. Yes; the problem is that when you go to an organization like the IMO, you have the political pulls, you have genuine differences in culture and policy, and it is hard to do things unilaterally that we think are best for our needs if we are

part of an international agreement. But I hope that we can move them along.

We have to have a certain degree of command of activities within our waters, particularly when you see the numbers of people who are now going on cruises, traveling by boat. And the spill incidents that take place—we must be concerned with the whole issue of toxic materials. And if crews do not have the training or the understanding of what takes place if an incident occurs presents us with a kind of a dilemma.

We do not want to shut down international traffic. On the other hand, we do not want to take the exposure that has been wreaked upon the environment in these last couple of years, starting with the *Valdez*, and then the ships off the coast of Scotland and Spain.

Mr. Vogt, 90 percent, you said, of our international commerce is carried to and from our shores on foreign flag vessels, and most of the marine accidents in our waters do involve foreign flags, foreign crews. Have you investigated which of the foreign flag states are most negligent, or most diligent on the other side, in enforcing international safety standards?

Mr. VOGT. Mr. Chairman, I cannot answer that question for you now, but we can certainly get you figures on that.

Senator LAUTENBERG. We would like to have that.

[The information follows:]

The degree of compliance with international safety standards by the different foreign flag states is not quantifiable by statistics on hand. The largest numbers of accidents involving foreign flag vessels in U.S. waters, not surprisingly, involve those foreign flag states in which the largest numbers of vessels are registered. These statistics thereby do not offer a solid base for better determining, on a comparative basis, which foreign flag states enforce international safety standards. The Safety Board has more concern over what appears to be a trend in ships being registered with nontraditional maritime nations. These nations lack the means to monitor compliance of the ships with appropriate SOLAS convention regulations, and may not be able to provide qualified crews. These nontraditional maritime nations have no organization to inspect ships, or to qualify crews. These nations are quite simply "flag-of-convenience" registries.

However, several nations besides the U.S. have maintained the necessary infrastructure to maintain crew qualification, training, inspection, and licensing programs. The IMO has established a subcommittee on Flag State Implementation which will meet for the first time in April 1993. This subcommittee will be seeking methods to improve flag state implementation and enforcement of IMO conventions such as the International Convention on Standards of Training, Certification, and Watchstanding for Seafarers.

CRUISE SHIP SAFETY

Senator LAUTENBERG. Have you found in your examination of marine matters that foreign flag crews are usually less well trained than American flag crews? There are not many American flag carriers out there.

Mr. VOGT. Well, certainly in the passenger areas we have some serious issues with their training and safety. In terms of ability to maneuver ships and so forth, I am not sure what our findings have been since it is hard to find a frame of reference.

NTSB TRIP TO THE REPUBLIC OF CHINA

Senator LAUTENBERG. And that is regrettable. The committee is aware of the fact that a number of your Board members are planning a trip to the Republic of China, and I am curious about a cou-

ple of things. When is that taking place? What is the purpose of the trip?

Mr. VOGT. Well, it takes place tomorrow. Two Board members, Vice Chairman Coughlin and I will be going. Mr. Forté will be going. And Mr. George Reagle, who heads up our Office of Surface Transportation.

I would like to give you some background. As you know, under the ICAO Treaty, the Safety Board is responsible for U.S. investigations of aviation accidents abroad involving U.S. carriers, U.S. manufactured aircraft and engines. So, we have a responsibility in all foreign accidents to lead the teams of U.S. manufacturers, or carriers, or the FAA. The fastest growing part of our aviation investigations over the last year has been involvement in foreign accidents.

The Boeing Co. estimates that China will be its third largest market for aircraft, and it may move up beyond that over the next few years. McDonnell Douglas just recently opened a manufacturing assembly operation in China, having won a contract to sell the Chinese 40 aircraft, 20 MD-80's, and 20 MD-90's.

The aviation industry in China is undergoing an exponential growth. Just, for example, with the advent of global positioning navigation, the Chinese will be able to leapfrog a generation of infrastructure. Boeing has sold some 50 airplanes in China over the last 6 years. Seven were delivered last year. They are in the midst of buying on a large scale our aircraft.

The Chinese Government is in the middle of trying to come to grips with the fact that they do not have the infrastructure or expertise in either accident investigation, or in pilot training. They came to the Safety Board a year ago. The Safety Board, at their invitation, hosted the delegation for the purpose of meeting with us, with the DOT, and with the FAA to determine whether they wanted to ask us to help them build the infrastructure for this burgeoning aviation industry. They brought nine people, stayed 10 days, and when they returned to China they wrote us a letter which arrived in September asking us to send a delegation to meet in March to formalize some understandings about how to help them create an NTSB-type multimodal agency in China.

We have found that everyone we have discussed this with in the airline industry has been extremely enthused. We are proud the Chinese came to us. They have been dealing in many respects with the Canadians, for example, in the purchase of simulators. At least one major aerospace entity here is now in competition to sell the Chinese a training package for their airlines.

In the meantime, China had the worst disaster in their history recently when a Boeing 737 with 144 passengers crashed at Gilian. The pilot was 28 years old, and by their account, was their top pilot, one of their very top pilots. He had been flying, according to them, since he was 15. His time in these aircraft has to be limited. We were not able to get all the information on that.

In this case, there was a split control between the two engines which, in our aviation milieu, is a fairly minor occurrence. They, at least according to the flight data recorder, were too late in going out of autopilot into manual control, and the plane crashed into the side of a mountain.

The Chinese contacted our State Department and asked us to send a team to help them investigate. They were enormously eager to see how we did it. Unfortunately, the Chinese have very rudimentary experience, according to our investigators, in how to undertake such an investigation.

I believe that this is probably as important a trip as I am going to make during my tenure as chairman. We think that our ability to go into China and effectively investigate accidents involving American manufactured aircraft or engines, or involving American passengers, is going to be a very, very important aspect of our operations in years to come.

Senator LAUTENBERG. Do they pay for any of this?

Mr. VOGT. No; we do it. And I am pleased to say that I went over the figures for what it is going to cost. We are taking six people, and it will be around \$5,200 a person for the whole trip.

Senator LAUTENBERG. Does this include spouses?

Mr. VOGT. No, no.

NTSB TRIP TO THE REPUBLIC OF CHINA

Senator LAUTENBERG. Is that in the 1993 budget submission that we got?

Mr. VOGT. Well, it is in our travel budget which involves travel that board members and members of our staff do, but it is not specifically in there. But it is well within our travel budget. We are certainly not exceeding any expenditures on it.

And I might say that it is a very intense working itinerary that we have. We will visit the MD-80 manufacturing facility in Shanghai. We will meet with top aviation people in Beijing. On the way back, we will spend 2 days with our FAA in Hawaii, and then 1 day in California.

Senator LAUTENBERG. What about Alaska?

Mr. VOGT. Well, we are going to Alaska, but we are not going to do it on this trip.

"MOST WANTED" SAFETY ISSUES

Senator LAUTENBERG. Most of the safety recommendations on the Board's "most wanted" transportation safety improvements expect action from the Federal agency. You said that 8 out of 10 of your safety recommendations are eventually adopted, the other 20 percent are not. Are these listed in order of safety value? Is the remaining 20 percent less significant in terms of the actual safety objective?

Mr. VOGT. No, sir; on the most wanted list, they are in chronological order by design, so there is no prioritization. There are, among the 20 percent that have not been enacted overall, some that we would very much like to see enacted.

I do not know that we have ever done an analysis to say whether we get the easy ones and leave the hard ones. But we have had some very satisfying experience in that regard, and some that have been hanging on for a while.

NTSB TRIP TO THE REPUBLIC OF CHINA

Senator LAUTENBERG. Well, we thank you very much for your appearance with us today. Yours is a very, very important agency, oftentimes not fully understood in terms of the mission, but your success is essential in terms of the safety of the traveling public.

And even as we discuss your trip abroad it becomes apparent that if we are going to protect our own people that we have to look, at times, beyond our borders. Americans are traveling all over the place, and if we have American equipment being sold in those markets we ought to make sure that what we dispense is as good as can be obtained. And I am sure that the manufacturers wholeheartedly support that kind of activity.

I wish that there was a way so that some of those costs could be borne outside of the regular structure if they are in pursuit of a more efficient, safer piece of equipment, that in some way we could derive some of the revenues associated with the costs involved. I think there is a delicate balance, and I am not promoting one or the other, but whoever is in the marketplace ought to be happy about the NTSB's review.

Mr. VOGT. One aspect of this, in that regard, is that in our experience in the Gilian crash relationships with the Chinese are going to be extremely important on a personal basis because they do not have an organized structure as you find in Western Europe or other parts of the world.

We think that by building this bridge and, at their expense, offering to help train some of their people, that the economies are going to pay off in efficiencies over time when we are called upon to investigate accidents involving our aircraft and our carriers in China. We will be called upon to do that.

SUBMITTED QUESTIONS

Senator LAUTENBERG. Thank you very much for being here. We will submit some other questions to be answered for the record.

[The following questions were not asked at the hearing, but were submitted to the agency for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR LAUTENBERG

NTSB'S REPORT ON DRUNK DRIVING BY UNDERAGE YOUTH

Barriers to Implementation of Tough Laws by States

SENATOR LAUTENBERG: The Board's recent report on underage drunk driving recommends that State laws be strengthened to: prohibit minors from purchasing alcohol, outlaw possession of alcohol by minors, and outlaw the use of false identification. These ideas are not new. Many States have already implemented these laws.

Do you think the States that have failed to enact such laws do so with the knowledge and expectation that there will be large-scale non-compliance with 21 drinking age?

ANSWER: While enactment of the 21 drinking age law in some states required the threat of sanctions contained in the National Minimum Drinking Age Act, the Safety Board has no information that states expected large-scale non-compliance. However, non-compliance has been documented and requires state and local action immediately.

SENATOR LAUTENBERG: Why does your report only make recommendations for action by the States. Why doesn't the report recommend stronger action by the Federal government to compel better performance by the States?

ANSWER: The Federal government already authorizes incentive grants for sting operations in the states (23 U.S.C. 410). Other than the report by the Inspector General of the Department of Health and Human Services, no Federal stimulus for state legislation has been aggressively applied. The Safety Board intends to aggressively pursue both state legislation and state and local enforcement actions. The Safety Board welcomes Congressional or other Federal action that will reduce youth alcohol purchases and youth crashes.

SENATOR LAUTENBERG: What specific recommendations do you support in strengthening enforcement by the States?

ANSWER: The Safety Board supports stronger laws to provide a better enforcement environment. We support strong sanctions against the seller of alcohol to underage persons, including license revocation and criminal or civil penalties. We support suspension or revocation for the underage person's driver's license for actions related to underage alcohol purchases. We support aggressive enforcement, including sting operations by county, local police, and sheriffs. We are interested in the evaluation of innovative enforcement actions such as "Cops in Shops," beer keg tags, etc. Finally, we strongly support prosecution of persons who illegally provide alcohol to underage persons.

SENATOR LAUTENBERG: As you know, we have used the threat of withholding formula construction dollars from the highway trust fund to force States to enact the 21-year-old drinking age. What real incentives does your report recommend to improve enforcement by the States?

ANSWER: As you know, the Safety Board cannot provide financial incentives to improve enforcement. Nevertheless, the Board believes that the report, itself, is an incentive that identifies problems, proposes a variety of solutions, and makes recommendations that we believe will be effective.

SENATOR LAUTENBERG: Do you think it makes sense for States to be considered in compliance with the National Minimum Drinking Age Act simply by outlawing the sale of alcohol to minors, but not outlawing the possession of alcohol by minors?

ANSWER: The National Minimum Drinking Age Act (NMDA) included provisions prohibiting the purchase and public possession of alcohol by underage persons. Sale is not the same as purchase. The term sale is aimed at the vendor while purchase is aimed at the buyer. Similarly, possession and public possession are not necessarily the same. Many state laws exempt underage possession in certain settings. If sale and possession are not equivalent to purchase and public possession, it seems that states without laws on purchase and public possession may not be in compliance with the NMDA.

SENATOR LAUTENBERG: What responses have you received to date to your report from the nation's governors?

ANSWER: It is too early to expect a large number of responses to the Board's recommendations. However, we have received responses from representatives of Alabama, Vermont, Maine and Virginia.

A Maine representative sponsored a type of provisional license bill this session for which the Board sent a letter of support. The California Senate is considering a 0.00 BAC law for youth and the Board plans to testify regarding the bill. Most responses agree that a youth drinking and youth crash problem exists in their state, but indicate that the state laws are substantially similar to Safety Board recommendations. Responders have agreed, in general, to submit legislation.

How Many More Lives Could Be Saved?

SENATOR LAUTENBERG: NHTSA has estimated that the age 21 law has now saved more than 12,000 lives since its enactment.

How many more lives do you estimate could have been saved with the enactment of the State laws that you are proposing to the governors?

ANSWER: We do not have an analysis available for the lives that could have been saved. However, if the relatively weak and relatively weakly enforced laws are improved and vigorous enforcement is applied, the Safety Board is confident that thousands of lives can be saved.

What Works to Prohibit Alcohol Sales?

SENATOR LAUTENBERG: In the NTSB's report, you discuss the Insurance Institute's data showing how obscenely easy it is for teenagers to purchase alcohol in Washington, D. C. and Westchester County, New York. However, in Albany, New York and Montgomery

County, Maryland, the rate of alcohol sales to minors was less than half the levels found in Washington and Westchester County.

What exactly do the law enforcement communities in Albany and Montgomery County do to minimize the sale of alcohol to underage youth?

ANSWER: Both Albany and Montgomery County have targeted enforcement to reduce sales to underage persons. Insurance Institute for Highway Safety researchers attributed the lower purchase rates in Albany and Schenectady Counties, New York, to "recent efforts to enforce alcohol purchase age laws." Montgomery County has conducted sting operations, has elected officials who are interested in this matter on the County Council, and has a prevention and intervention program called "Drawing the Line." Thus, the enforcement and education messages to youth are consistent.

SENATOR LAUTENBERG: If we took a nationwide survey similar to the surveys done by the Insurance Institute, do you think we would be more likely to find purchase rates similar to Washington (where 97 percent of minors who attempted to buy alcohol were successful) or Albany (44 percent were successful)? Why?

ANSWER: We believe that it would vary between these percentages and may even be below 44 percent depending on political, enforcement, parental, and community interest and the mores of the community. Some cities have low rates of successful purchase. Doctors and Lawyers for a Drug Free Youth have conducted surveys throughout the nation, though it is not a national survey. Their data on successful purchase rates is below.

<u>Survey Year</u>	<u>Location</u>	<u>Rate (percent)</u>
1991/1992	Brooklyn, NY	99
1991/1992	New Orleans, LA	97
1991/1992	Queens, NY	92
1991/1992	Manhattan, NY	87
1991/1992	Champaign, IL	80
1991/1992	Urbana, IL	76
1991/1992	Chicago, IL	75
1991/1992	Schenectady, NY	72
1991/1992	Minneapolis, MN	67
1991/1992	Milwaukee, WI	66
1991/1992	Rochester, NY	56
1991/1992	Washington, DC	56
1991/1992	Madison, WI	55
1991/1992	Utica, NY	55
1991/1992	Mattoon, IL	53
1991/1992	Los Angeles, CA	52
1991/1992	Boston, MA	49
1991/1992	Bronx/Yonkers, NY	48
1991/1992	Syracuse, NY	43
1991/1992	St. Paul, MN	32
1991/1992	Buffalo, NY	32
1991/1992	Salt Lake City, UT	25
1992	Charleston, IL	67
1992	Los Angeles, CA	49
1992	Memphis, TN	47

1992	Kansas City, KS	40
1992	Las Vegas, NV	33
1992	Phoenix, AZ	33
1992	Tucson, AZ	27
1992	St. Louis, MO	25
1992	Dallas, TX	23
1992	Little Rock, AR	20
1992	Denver, CO	20
1992	San Diego, CA	16
1992	Decatur, IL	14
1992	Carlsbad, NM	9
1992	Tulsa, OK	3

Do Low BAC Laws for Youth Work in All States?

SENATOR LAUTENBERG: In the Board's report, you point out that by lowering the legal blood alcohol content for teenagers, the State of Maine has succeeded in reducing fatal crashes by youth. There are several other States, however, including my own State of New Jersey, that have also lowered the BAC limit for underage youth.

Have these States also been successful in reducing fatal accidents involving intoxicated youth?

ANSWER: Evidence from an evaluation of the Maryland 0.02 law indicates that Maryland was successful in reducing youth alcohol-related crashes including fatal crashes. In those counties where the 0.02 law was enhanced by targeted youth education programs, Maryland achieved nearly a 50 percent reduction in youth alcohol-related crashes. We believe that other states with low BAC laws for persons under age 21 have achieved alcohol-related youth crash reductions. The Safety Board cited additional on-going research indicating the effectiveness of low BAC laws. New Jersey has been a national leader in reducing alcohol-related fatal crashes. For example, New Jersey has the second lowest percentage of driver fatalities with an illegal BAC and tests over twice the proportion of fatally injured drivers as the state with the lowest percentage. We expect that an evaluation of the New Jersey 0.01 law will show additional impact on youth alcohol-related crashes.

SENATOR LAUTENBERG: Do you believe this measure by itself can significantly lower the rate of teenage drunk driving? Do teenagers really decide to drink less out of fear of being pulled over by the police?

ANSWER: Experience and evaluation indicate that, in many cases, legislation by itself can have a significant effect and that effect can be enhanced by public information, and can achieve a lasting effect with effective deterrence and prevention that results in a redefinition of socially acceptable behavior. Low BAC legislation sends a consistent message to youth that any alcohol is illegal and will impair their driving. Further, it eases enforcement, prosecution, adjudication, and license action. License action provides the greatest potential for deterrence for all drivers, but especially for this age group. Low BAC legislation will reduce youth alcohol-related crashes. The reduction will be enhanced by enforcement and information programs.

AIRCRAFT DEICING: USAIR FLIGHT 405

SENATOR LAUTENBERG: The Board testified last year that, over the last decade, ice has been a factor in 25 accidents and 165 fatalities including USAir Flight 405 last year. However, only seven accidents -- now eight, with Flight 405 -- involved ice on the wing. The GAO reported in November that FAA's new regulations on de-icing should be tightened, but FAA does not fully agree.

Do you believe that pilots and maintenance personnel understand their responsibilities under FAA's new deicing rules? In particular do pilots understand how to use the new deicing holdover timetables? And will airlines be able to provide formal training to all personnel responsible for deicing before the next winter season?

ANSWER: Based on FAA briefings of Safety Board staff and anecdotal information about air carrier flight operations during this past winter it appears that air carrier pilots and maintenance personnel, as well as FAA operations and maintenance inspectors, have an excellent awareness and understanding of their responsibilities, including use of the new deicing holdover timetables. However, the Board remains concerned that the current awareness will obviously erode with time, and the constant change in personnel and equipment dictates the need to continue training on a recurrent basis. This is equally applicable to the FAA personnel involved in overseeing the airline programs. The Board is pleased that the FAA has established a position in each appropriate regional office to serve as a reference and standardization point of contact. These individuals and the inspectors assigned to the specific airlines also need recurrent training. Such training should include attendance at the assigned carrier's program as well as additional appropriate training from the agency. The Advisory Circular that provides guidance for the development of deicing plans should receive top priority for completion and the widest possible distribution to the industry. These matters were addressed in safety recommendations to the FAA following our investigation of the USAir Flight 405 accident.

SENATOR LAUTENBERG: So far, most of the deicing attention has focused on the larger transport aircraft operated by the trunk carriers. However, in your comments to FAA on the new deicing rules, you stated that commuter airlines should also have more stringent regulations, and FAA plans to propose such rules.

Do you believe more stringent regulations are necessary for air taxis and general aviation? What are your views on the need for specific guidance on deicing for this component of the aviation industry?

ANSWER: Frost, snow, or ice adhering to aircraft surfaces can pose a serious threat to flight safety for air taxis and general aviation aircraft, as well as for larger air transport aircraft. However, the aerodynamic characteristics of the smaller, lower performance aircraft make them not as susceptible to minute amounts of contamination as the high performance, swept-wing airplanes. This is borne out by the accident record as well. Therefore, although greater awareness and prudence on the part of the entire pilot community is needed, the need for specific guidance on deicing

for this component of the aviation industry does not appear to be critical.

SENATOR LAUTENBERG: We know that air taxis have higher accident rates than both air carrier and commuter airlines. What work has the Safety Board done concerning the air taxi industry and what would you recommend to decrease air taxi accidents?

ANSWER: The large number of small air taxi operators and their wide dispersal about the country makes effective FAA surveillance of them a very difficult and labor intensive task. In light of these circumstances, the Safety Board has advocated that FAA modify its operator surveillance program to include more off-hours and unannounced inspections. Additionally, because of the large number of controlled flight into terrain accidents in air taxi operations the Safety Board has advocated the installation of ground proximity warning systems on those aircraft.

MARINE SAFETY QUESTIONS

Does Acceptance of NTSB Recommendations by IMO Actually Improve Marine Safety?

SENATOR LAUTENBERG: Many of the Board's recommendations to improve marine safety remain open because the NTSB has recommended new safety laws for all vessels entering U.S. waters, and the Coast Guard insists on pursuing safety improvements through international negotiations at the International Maritime Organization (IMO).

Do you generally find that the foreign flag nations are prepared to accept and implement the Board's recommendations in a timely manner?

ANSWER: We have not written to foreign nations directly, but generally work through the Coast Guard as the U.S. representative to IMO. However, we have written directly to foreign companies and foreign classification societies. For example: recommendations were issued to 18 foreign passenger liner companies to locate lifejackets at or near emergency debarkation areas have met with success. Approximately 50% of the companies have adopted it. The USCG received a companion recommendation and has been working with the IMO on this issue. Through this two pronged approach we expect this safety goal will be achieved.

SENATOR LAUTENBERG: At times, the NTSB has proposed its recommendations for improved marine safety directly to the IMO. Have you found that the international shipping community has acted promptly on the Board's recommendations in general.

ANSWER: The Safety Board has not made any recommendations directly to IMO; instead we work through the U.S. Coast Guard, the designated U.S. representative to the IMO. Although, the Coast Guard has been receptive to our recommendations, the implementation of Safety Board recommendations has received mixed support by the international shipping community. Some recommendations take more than 8 years to implement like improvements in emergency drill procedures. Examples of our successes are:

Fire safety improvements aboard passenger ships are being implemented for integrated fire detection and protection systems, sprinkler systems, hose ports in fire doors, improved fire hoses, and fire fighter training by the flag state.

The Coast Guard has proposed to the International Maritime Organization (IMO) that international regulations be developed that will require lifejackets to be stowed on all passenger vessels at both the debarkation deck level, as well as in the passenger staterooms.

Nevertheless, the Safety Board has had difficulties convincing the Coast Guard to propose to the IMO:

- Require periodic marine firefighting training for ships officers.
- Require all passenger ships carrying more than 500 passengers to employ a full-time professional fire fighter as part of the crew.

SENATOR LAUTENBERG: Does the Safety Board consider the acceptance of its recommendations by the IMO to be an adequate response to its recommendation? Are you satisfied that the foreign flag states are adequately enforcing the safety rules that they agree to at the IMO?

ANSWER: We consider the acceptance by IMO of our recommendations a step in the right direction causing IMO to think seriously of a corrective effort but, the time delay before implementation is sometimes excessive, the latitude that is often allowed in interpretation can greatly lessen the intended safety improvement, and many countries do not implement or enforce them.

Many ship owners continue to use flags of convenience and/or substandard classification societies. Of about 40 classification societies, 10 are recognized by the Coast Guard as competent. Some of the IMO regulations are unclear, vague, and subject to a wide range of interpretation by flag states or the classification societies used by the flag state or ship owner.

Are Foreign Ship Crews Adequately Trained?

SENATOR LAUTENBERG: The Board has pointed out that the majority of marine safety accidents are a result of human error. Often, the human error results from bad training or fatigue. I am concerned that many of the foreign flag nations are giving licenses to masters and crews who are not adequately trained, even though these nations are signatories to the international convention on crew training and certification.

What has been the Board's observations regarding the training of foreign crews and their impact on marine safety?

ANSWER: The quality of training varies from country to country and from company to company. There is an economic incentive to hire less qualified persons as opposed to more highly trained persons because the more highly trained crewman from more advanced nations

demands higher wages. Their impact on marine safety also varies from country to country and from company to company.

SENATOR LAUTENBERG: Have you found evidence of marine casualties resulting from poor training of crews?

ANSWER: Yes. In areas of emergency response to engine room casualties and fires, steering and engine failure, or passenger area fires and evacuation inadequately trained crews have contributed to fatalities and extensive property damage. The importance of well trained crews cannot be over emphasized. However, to augment a crew that is untrained or minimally qualified, the Board feels that all passenger ships carrying more than 500 passengers should have a full-time professional fire fighter as part of the crew.

SENATOR LAUTENBERG: Do you believe we can put our trust on the certificates and licenses granted by foreign flag states to their crews?

ANSWER: This would depend on the country and company involved. There is a vast difference between countries in requirements to obtain licenses and certificates. Some credentials are subject to purchase and do not require demonstration of knowledge or experience.

Does the Coast Guard Remain Uncooperative?

SENATOR LAUTENBERG: For the previous two years the NTSB has cited the Coast Guard as the most uncooperative of the DOT modal administrations in implementing the recommendations of the Safety Board.

Does this continue to be the case? Have you seen any improvement on the part of the Coast Guard in implementing NTSB recommendations?

ANSWER: Previously, the Coast Guard's initial response rate to Safety Board recommendations had slipped to the lowest rate of all modes of DOT. Recent discussions with Coast Guard senior staff to define and improve working relationships for accident investigations, as well as for routine functions between our two agencies, has improved the response time. We are working together towards shortening response times and acceptance rates and continued progress is expected.

NTSB Investigations of Foreign Flag Casualties

SENATOR LAUTENBERG: The Safety Board has expressed concern for several years about its lack of jurisdiction to investigate off-shore cruise ship accidents. According to the Board, such authority would ensure that U.S. passengers aboard foreign flagged vessels operating from U.S. ports receive the same level of safety oversight as exists in other transportation vehicles. The Coast Guard has told us that this is not a problem because the Board has access to the casualty report conducted by the foreign flag nations.

Do you find these casualty reports conducted by the foreign flag nations to be sufficiently diligent and thorough for your purposes?

ANSWER: Some reports (Australian, Canadian, and Liberian) when received appear to be thorough. Other reports, like the UK's reports are generally confidential. However, most countries either do not conduct investigations or conduct superficial investigations.

SENATOR LAUTENBERG: Do you think all of the foreign flag states that send cruise ships to the United States have adequate expertise to investigate fully all vessel casualties?

ANSWER: No. In the latest reports from committee meetings at the IMO, it appears that there are only a few foreign governments that are regularly submitting accurate vessel casualty reports to the IMO. The reports submitted are, for the most part, from governments that have formal marine accident investigation procedures.

The IMO should be firm and insist that those member governments abide by the rules set forth in the IMO regulations and investigate vessel casualties and submit accident reports to the IMO until foreign flag states routinely, thoroughly investigate accidents involving cruise ships operating out of U.S. ports. The USCG and NTSB should conduct the investigations so that casualty information can be documented and shared by the member nations to prevent similar accidents from occurring in the future.

SENATOR LAUTENBERG: In September 1991, the NTSB send a letter to Admiral Kime complaining that NTSB investigators were not being granted adequate access to a casualty investigation even in those instances when the foreign flag nation has invited the United States to participate in the investigation.

Has the Coast Guard been more cooperative in granting access to NTSB investigators during these overseas investigations since September of 1991?

ANSWER: During the last several months, the Safety Board has had a series of discussions with Coast Guard senior staff to define and improve working relationships for accident investigations as well as for routine functions between our two agencies. As a result of our discussions with the Coast Guard, the Safety Board will investigate foreign passenger vessel accidents jointly with the Coast Guard and flag state under the IMO resolution. The Safety Board has participated fully in three recent foreign-flag passenger vessel investigations.

SENATOR LAUTENBERG: Does the NTSB currently have authority to investigate airplane accidents when passengers from the U.S are on board, but the accident occurs outside of U.S. territory?

ANSWER: The provisions of the International Civil Aviation Organization Treaty, to which the United States is a signatory, allows for the full participation in civil accident investigations by the government of the country in which an aircraft is registered, manufactured, or operated primarily. In such cases, the Safety Board, as the accredited U.S. representative, often participates in the investigation of foreign aviation accidents.

Cruise Ship Safety

SENATOR LAUTENBERG: In October 1989, International Maritime Organization (IMO) Resolution A.637 (16) endorsed greater multilateral cooperation in vessel casualty investigations, including cruise ships. Since then the U.S. Coast Guard has participated in several investigations of foreign flagged cruise ship accidents (e.g., the April 1992 investigation of the Starship Majestic), including at least one investigation which included NTSB representatives. In your view, have these joint investigations been successful? If not, why not?

ANSWER: Yes. Recently there have been three foreign flag passenger ship accidents involving ships routinely operating from U.S. ports which have been successfully investigated under IMO Resolution A.637:

1. Fire on board BRITANIS on December 11, 1991
2. Fire on board SONG OF AMERICA on December 12, 1991
3. Grounding of QUEEN ELIZABETH 2 on August 7, 1992.

However, in the case of the grounding of the QUEEN ELIZABETH 2 in U.S. waters, the Coast Guard invited the Flag State (UK) to participate in the investigation under Resolution A.637, but the UK investigators stated that national laws of Great Britain precluded their participation. In every instance where the Safety Board was invited to participate, it did in fact participate in the investigations. The Safety Board expects to publish a special report concerning passenger vessel safety, which will include the BRITANIS and SONG OF AMERICA accident reports this spring. The Safety Board also expects to publish the QUEEN ELIZABETH 2 accident report this spring.

SENATOR LAUTENBERG: What groups are opposed to the Board's having investigative authority in off-shore cruise ship accidents, and what are their objections? How do you answer such objections?

ANSWER: Foreign owners/operators of cruise ships that regularly board passengers from U.S. ports object to NTSB investigations. They object because of the broad scope of our investigations which are not limited to the casualty itself but cover emergency response, emergency contingency plans, training, company management of ship operations, company policies and everything that is investigated is open to the public scrutiny. They fear that this may lead to "bad press" and the resulting loss of revenue.

To answer such objections we state that the Safety Board's goal is to improve public safety, to publicize safety problems or deficiencies to improve safety, and to have the IMO and the flag state to improve their regulations and operations. Although the short term effect of drawing attention to safety reflects on passenger ships may be a loss in revenue, the long term effect is a safer industry which will result in increased revenue. The Safety Board objective is to prevent future accidents and to avoid a major catastrophe such as the SCANDINAVIAN STAR fire which killed 158 persons three years ago.

Although foreign passenger ships operating from U.S. ports have had a very good safety record in the recent past, the fire on board the Bahamian passenger ship SCANDINAVIAN STAR in April 1990 showed that this record could be shattered overnight. The SCANDINAVIAN STAR left the U.S. cruise trade in March 1990 and less than a month later suffered a tragic fire in which 158 persons (156 of whom were passengers) lost their lives. One of the two crewmembers who died in the fire was a U.S. citizen. The fire that destroyed the SCANDINAVIAN STAR could easily have occurred a month earlier while the vessel was still operating in the U.S. trade and the 156 dead passengers could have been U.S. citizens.

Significantly, the SCANDINAVIAN STAR had previously suffered a serious fire while operating in the U.S. cruise trade. This fire, which occurred on March 15, 1988, was investigated by the Safety Board. The Board's report detailed numerous fire safety deficiencies which, if corrected, may have prevented or at least lessened the tragic loss of life that resulted from the 1990 fire.

SENATOR LAUTENBERG: In April 1992, the IMO required existing, primarily older, cruise ships to install fire sprinklers and other fire safety equipment. Other standards affecting passenger safety, such as crew proficiency in carrying out fire drills, have not yet been revised. Are there other type of cruise ship safety concerns that the Board believes have not been sufficiently addressed?

ANSWER: The technical fire safety improvements are complete for existing as well as new passenger vessels. The major concerns now are the role of the human element. Crews on these foreign flag vessels must meet stringent fire training requirements as well as other emergency considerations. The Board has recommended that for vessels with more than 500 persons (crew and passengers) that a paid firefighter be employed at all times. This individual could train the crew and would be familiar with all fire aspects of the vessel, i.e. equipment location, understanding of fire spread, and develop appropriate training drills.

As a result of a 1988 study, several safety recommendations were issued to the Coast Guard and the passenger ship industry. One significant recommendation concerned the stowage of life jackets at or near the embarkation deck level generated mixed reactions. The Coast Guard has proposed to the IMO that international regulations be developed that will require life jackets to be stowed on all passenger vessels at both the embarkation deck level and in the passenger staterooms. However, up to the present there has been no action by the IMO.

In recent communication with passenger vessel operators, the Safety Board learned that many operators have voluntarily complied with the recommendation. Because of the need for lifejackets to be stowed in both the staterooms and the embarkation deck levels (or the place where most passengers can be expected to congregate) in order to afford passengers the best opportunity to get their lifejackets in an emergency, the Safety Board has made lifejacket stowage an issue in all passenger vessel accident investigations. Without the dual location requirement, in many instances passengers have gone below decks into the area of danger to pick up their life jackets from their staterooms.

TRIP TO CHINA

SENATOR LAUTENBERG: It is the Committee's understanding that a number of Board Members are planning a trip to the Republic of China. What are the costs associated with this trip?

ANSWER: The total cost of the tip was \$31,421.

SENATOR LAUTENBERG: What other Federal officials are going on this trip?

ANSWER: There were no other Federal officials except Safety Board personnel on the trip.

SENATOR LAUTENBERG: Are any industry representatives going on this trip? If so, who?

ANSWER: No industry representatives were on this trip.

SENATOR LAUTENBERG: Who pays for their travel?

ANSWER: Since no industry representatives were on the trip, there were no travel costs.

OPEN RECOMMENDATIONS:
"MOST WANTED" IMPROVEMENTS

SENATOR LAUTENBERG: Most (13 of 17) of the safety recommendations on the safety Board's "Most Wanted Transportation Safety Improvements" expect action from a federal agency.

In Chairman Vogt's opening statement, he states that 8 of 10 of your safety recommendations are eventually adopted. What about the 20 percent not adopted? Why aren't they adopted? Are you satisfied with the responsiveness of federal agencies to your recommendations?

ANSWER: Overall, the Board's safety recommendations enjoy a 82 percent acceptance rate. Of the remaining 18 percent, nine to 12 percent at any time are going through negotiations between the Board and addressees to iron out differences of opinion or interpretation. Another five to 7 percent are recommendations that have been closed as no longer applicable or reconsidered in that they have been addressed by events outside the recommendation process. These events can include technological advances or the fact that an addressee ceased to exist. Safety recommendations for which a response has not been received from the addressee fall into another category and at any given time about 4 percent of our recommendations may comprise this category.

As the above statistics show, our safety recommendations are addressed and they are seldom rejected outright. The responsiveness of federal agencies to our recommendations remains positive and the Board continually works to improve the acceptance of our recommendations or acceptable alternatives.

SENATOR LAUTENBERG: To what specific factors do you attribute some agencies' less-than-rapid consideration and acceptance of your recommendations?

ANSWER: The primary reason for slowness in responding to the Board's recommendations is the lack of an institutionalized process and organization within the recipient's organization designated as the focal point for responses to our safety recommendations.

The Federal Aviation Administration (or its predecessor agency) has been responding to our recommendations for decades. Their process and staff are such that a rapid and usually positive response is forthcoming -- with a closure of activity also in a relatively short time period.

Other agencies have been responding to the Board for a far shorter time and many have only recently seen the need to develop a process and a core staff to provide oversight of the recommendations within an agency while the response is being developed. Within the last 6 years, the Board has assisted such agencies as the U.S. Coast Guard with internalizing such a process in order to bring down the time of first response for that agency.

A second factor is that for some recommendations there will be an honest, professional difference of opinion regarding the identified problem and the potential solutions to the perceived problem.

SENATOR LAUTENBERG: Does the Board have enough influence to ensure that its recommendations are adopted expeditiously and with sufficient frequency to merit the resources you invest in your investigations?

ANSWER: The Board believes that it now has the influence necessary to ensure that its recommendations receive the proper review and evaluation by the addressees. The Board has been making a stronger effort in the last few years to exert that influence to bring about a higher percentage of "acceptable" actions by the addressees. This effort has given us dividends as shown by the increase in the overall acceptance rate and reduction in the time to first response and to acceptable close outs.

SENATOR LAUTENBERG: In terms of the Board's resources, how much is spent on regional investigations, on major investigations, and how much on the (nine) safety studies and special reports?

ANSWER: The allocation of resources for regional accident investigations is \$11.8 million, for major accident investigations it is \$18.5 million, and for safety studies and special reports it is \$2 million.

SENATOR LAUTENBERG: Please provide for the record the following information on each of your "most wanted" recommendations:

1. Brief background on and a full statement of the recommendation.
2. Date on which the recommendation was first made.
3. Statement of response to date by the agency.
4. Your rationale for including this recommendation on your "most wanted" list, the significance of this

recommendation, and the impact on transportation safety if this recommendation is not adopted and implemented.

5. Your assessment of the feasibility, both economic and administrative, of adopting this recommendation.

ANSWER: As of April 25, 1992, there were 17 issues on the Safety Board's Most Wanted List. For an issue to be placed on the Most Wanted List, it must be a specific safety recommendation or a safety recommendation issue area selected by the Board for intensive follow-up and heightened awareness.

According to Board Order 83, the recommendation or issue area must: enhance safety on the national scene; build upon a more positive/secure view of the transportation system in the eyes of the public; include the consideration of previous loss of life or property, potential for future loss of life or property, and public exposure risk; be attainable in a reasonable time period; or have not been acted upon at all or for an inordinately long period of time.

Although the Safety Board does not perform formal cost-benefit analyses of our recommendations, we do attempt to be aware of the potential problems that might arise due to economic factors or with feasibility problems. For these reasons, the Safety Board will consider acceptable alternatives to its recommendations if those alternatives meet the same objectives of the safety recommendation.

The material on the "Most Wanted" list is below.

Boating While Intoxicated

Summary:

Improvements are needed in recreational boating laws and regulations to deal effectively with alcohol/drug abuse in the Nation's waterways. Although action to improve recreational boating laws has been taken in many states, the Safety Board believes that more can and should be done because in some states alcohol involvement in recreational boating fatalities is as high as 80 percent.

Addressee: The States and the District of Columbia

Date of Issue and Recommendation(s) Text:

November 7, 1983

M-83-76

Adopt legislation to clearly define the level of legal intoxication for recreational boat operators in order to strengthen your State's enforcement program for reducing accidents, fatalities, injuries, and property damage caused by the use of alcohol.

M-83-77

Adopt legislation to allow a chemical test of blood, breath, or urine if a recreational boat operator is

suspected of being intoxicated and toxicological tests in the event of a recreational boating accident fatality.

M-83-78

Require procedures for toxicological tests in the event of a recreational boating fatality to document the role of alcohol in recreational boating accidents and fatalities.

Status:

Ten States remain which do not have Boating While Intoxicated laws and they are Alabama, Arkansas, Hawaii, Iowa, Kentucky, Mississippi, Missouri, New Mexico, Oklahoma, West Virginia and the District of Columbia.

Administrative License Revocation

Summary:

The Safety Board believes that the passage of an administrative license revocation (ALR) law is the single most important step a state can take to combat drunk driving. Under an ALR statute, the police have the right to confiscate, on the spot, the license of a driver who either fails or refuses a breath test. The effects of ALR are twofold -- the licenses of dangerous drivers are revoked more quickly, and the public is deterred from drinking and driving.

Addressee: The States and the District of Columbia

Date of Issue and Recommendation(s) Text:

April 23, 1984

H-84-13 and H-84-17

Enact legislation or utilize existing authority to provide for administrative revocation of the licenses of drivers who refuse a chemical test for alcohol or who provide a result at or above the State presumptive limit.

Status:

Sixteen States currently do not have an ALR law. The states are Alabama, Arkansas, Georgia, Kentucky, Massachusetts, Michigan, Montana, New Jersey, New York, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, and Washington.

Runway Incursion-- Ground Collisions of Aircraft

Summary:

A series of safety recommendations address the runway incursion problem. The safety recommendations came from a 1986 safety study on the issue, and three major runway incursion accidents between 1990 and 1992.

Addressee: Federal Aviation Administration

Date of Issue and Recommendation(s) Text:

May 13, 1986; June 12, 1991; July 23, 1991; December 3, 1991

A-86-33

Require controllers to obtain a read back for all hold, takeoff, or crossing clearances and the clearances onto an active runway.

A-91-54

Improve standards for airport marking and lighting during low-visibility conditions, such as standards for more conspicuous marking and lighting; evaluation of unidirectional taxi lines for use on acute angle taxiways; and requirements for stop bars or position-hold lights at all taxiways that intersect active runways.

A-91-55

Identify all 14 CFR 139 certificated airports, complex intersections, where a potential for pilot confusion exists. Where needed, require additional lighting and signs.

A-91-56

Require that CFR 139 certificated airports use reflectorized paint for airport surface markings.

A-91-57

Require that CFR 139 certificated airports install semiflush runway edge lights in accordance with Advisory Circular 150/5340-24.

A-91-58

Include directions, in the forthcoming Advisory Circular for Surface Movement Control Guidance Systems, that 14 CFR 139 certificated airports, which operate at runway visual ranges of 1,200 feet or less, follow ICAO Annex 14 standards.

A-91-29

Expedite efforts to fund the development and implementation of an operational system analogous to the airborne conflict alert system to alert controllers to pending runway incursions at all terminal facilities that are scheduled to receive Airport Surface Detection Equipment (ASDE-3).

A-91-30

Conduct research and development efforts to provide airports that are not scheduled to receive Airport Surface Detection Equipment with an alternate, cost effective, system to bring controller and pilot attention to pending runway incursions in time to prevent ground collisions.

A-91-110

Conduct a one-time examination of the airport lighting at all U.S. tower-controlled airports to eliminate or reduce restrictions to visibility from the control tower to the runways and other traffic movement areas.

A-91-111

Redefine the airplane certification coverage compliance standards for anticollision light installations to ensure that the anticollision light(s) of an aircraft in position on a runway are clearly visible to the pilot of another aircraft preparing to land or take off on that runway.

A-91-112

Evaluate and implement, as appropriate, suitable means for enhancing the conspicuity of aircraft on airport surfaces during night or periods of reduced visibility. Include in this effort, measures such as the displacement of an aircraft away from the runway centerline, where applicable, and the use of conspicuity enhancements, such as high-intensity strobe lighting and logo lighting by aircraft on active runways, and encourage operators of airplanes certificated prior to September 1, 1977, to upgrade their airplanes to the present higher intensity standards for anticollision light installations.

A-91-113

Direct the general aviation community and the airlines to take steps to ensure that pilot training programs, including cockpit resource management training and flight operations procedures, place sufficient emphasis on the need for pilots to maintain vigilance in monitoring air traffic control radio communication frequencies for potential traffic conflicts with their aircraft, especially when on active runways and/or when conducting a final approach to a landing.

A-91-114

Incorporate into the Airman's Information Manual language that will alert pilots to the need for vigilance in monitoring air traffic frequencies for traffic conflict situations which may affect the safety of their flight.

A-91-115

Develop for inclusion in the Airman's Information Manual and the Air Traffic Control Handbook (7110.65F) specific phraseology to be used by pilots when requesting an intersection departure and specific phraseology to be used by controllers when issuing a position-and-hold clearance for an intersection departure.

Status:

Of the remaining 14 safety recommendations, 8 are awaiting further action by the FAA; and 6 are pending the Board's evaluation of the FAA response. Also, in 1991, the FAA established a number of Runway Incursion Action Teams that were to inspect airports for compliance with ground control standards. These teams inspected 18 airports in 1991 and 20 in 1992. Additional inspections are expected to be conducted during 1993.

Positive Train Separation

Summary:

The Safety Board is a strong advocate of systems which provide backup control when an engineer fails to properly control a train. The Board has made several safety recommendations to the Federal Railroad Administration (FRA) that it require systems to ensure that trains are equipped with alerting devices.

Addressee: Federal Railroad Administration

Date of Issue and Recommendation(s):

May 19, 1987 and September 16, 1991

R-87-16

Promulgate Federal standards to require the installation and operation of a train control system on mainline tracks which will provide for positive separation of all trains.

R-91-25

In conjunction with the Association of American Railroads and the Railway Progress Institute, expand the effort now being made to develop and install advanced train control systems for the purpose of positive train separation.

Status:

The Board is aware of ongoing efforts between the Association of American Railroads, the FRA and the industry to arrive at a satisfactory solution in the development of positive train control systems. It was learned at a meeting with Amtrak staff in January 1993, that the industry had decided to merge the best points of the 2 competing systems under the lead of a ground based system.

Commercial Fishing Vessel Safety

Summary:

The Safety Board has investigated numerous commercial fishing vessel accidents and recommendations have been issued covering a variety of safety issues including licensing of fishing vessel masters, requirements for emergency position indicating radio-beacons, carriage of basic lifesaving equipment and crew training.

Addressee: United States Coast Guard

Date of Issue & Recommendation(s):

August 12, 1985 and September 22, 1987

M-85-68

Seek legislative authority to require the licensing of captains of commercial fishing vessels, including a requirement that they demonstrate minimum qualifications in vessel safety including rules of the road, vessel stability, firefighting, watertight integrity, and the use of lifesaving equipment.

M-86-11

Seek legislative authority to require that stability tests

be conducted and that complete stability information be provided to the masters of commercial fishing vessels.

M-87-52

Seek legislative authority to require uninspected commercial fishing vessel captain/owners to provide safety training to all crewmembers.

M-87-54

Seek legislative authority to require basic lifesaving equipment for uninspected commercial fishing vessels including but not limited to: flooding detection alarms and automatic dewatering system.

M-87-56

Seek legislative authority to require basic lifesaving equipment for uninspected commercial fishing vessels including but not limited to: Coast Guard-approved lifeboats or liferafts sufficient to carry all persons onboard.

M-87-64

Seek legislative authority to require that all uninspected commercial fishing vessels be certified and periodically inspected by the Coast Guard or its recognized representative to ensure that the vessels meet all applicable Federal Safety standards.

M-88-31

Require a placard with donning instructions for exposure (immersion) suits to be posted in a conspicuous place on all fishing vessels that carry such suits.

M-92-25

Seek legislation that bases the requirement for load lines for fishing, fish tender, and fish processing vessels on the hazards and risks involved rather than on such unrelated parameters as the fish processing methods.

Status:

The Coast Guard has steadfastly maintained that voluntary guidance and education for captains should suffice to enhance fishing vessel safety and as such, it objects to M-85-68. Work continues on the other recommendations.

Mode C Intruder Conflict Alert

Summary:

The Safety Board has recommended that an airborne collision avoidance system be developed since 1969.

Addressee: Federal Aviation Administration

Date of Issue and Recommendation(s):

July 27, 1987

Take expedited action to add visual flight rules conflict alert (Mode C Intruder) logic to automated radar terminal system (ARTS) computers as an interim measure to the ultimate implementation of the advanced automation system (AAS).

Status:

The FAA's most recent letter (February 1992) commits to an operational Mode C intruder alert system by the end of fiscal year 1995. Installation of the New York Tracon system was complete as of July 3, 1991 and ultimately there will be 63 sites with the Mode C system installed. The FAA continues to hold to a projected schedule that will complete all sites by the end of fiscal year 1995.

Railroad Tank Cars Carrying Hazardous Materials

Summary:

The need to provide protection for hazardous materials being carried in railroad tank cars is the central point of this item.

Addressee: U.S. Department of Transportation

Date of Issue and Recommendation(s) Text:

February 12, 1990

Evaluate present safety standards for tank cars transporting hazardous materials by using safety analysis methods to identify the unacceptable levels of risk and the degree of risk from the release of a hazardous material, and then modify existing regulations to achieve an acceptable level of safety for each product/tank car combination

Status:

Near the end of 1991, the DOT issued a contract to study the risk/safety relationships of different hazardous materials being carried in cars with different kinds of protection. Staff is monitoring the progress in this area and will review the study when it is released.

Fatigue of Transportation System Operators

Summary:

In its investigations of numerous accidents in all transportation modes, the Safety Board has identified serious and continuing problems concerning the far-reaching effects of fatigue, sleepiness, sleep disorders, and circadian factors in transportation system safety. It has become apparent to the Board that neither management or labor in transportation properly considers the adverse effects of irregular and unpredictable cycles of work and rest on vehicle operating personnel. The Safety Board supports a systemic approach to the problem.

Addressee: Secretary, Department of Transportation

Date of Issue and Recommendation(s):

May 12, 1989

I-89-1

Expedite a coordinated research program on the effects of fatigue, sleepiness, sleep disorders, and circadian factors on transportation system safety.

I-89-2

Develop and disseminate educational material for transportation industry personnel and management regarding shift work; work and rest schedules; and proper regimens of health, diet, and rest.

I-89-3

Review and upgrade regulations governing hours of service for all transportation modes to assure that they are consistent and that they incorporate the results of the latest research on fatigue and sleep issues.

Status:

The Board recognized that this effort would be a continuing activity for a long period of time when the recommendations were adopted and when they were placed on the "Most Wanted" list. The Office of the Secretary of Transportation has provided the Board with two briefings on the efforts being made in the various administration in DOT. We have requested a third briefing for 1993.

School Bus Safety

Summary:

The Safety Board places special emphasis on school bus safety matters and particular attention is placed on the flammability of school bus interior materials, emergency egress, and fuel tank protection.

Addressee: National Highway Traffic Safety Administration

Date of Issue and Recommendation(s) Text:

June 5, 1989 and August 22, 1990

H-89-4

Incorporate in Federal Motor Vehicle Safety Standard 302 the recommendations of the National Institute of Standards on technology concerning the new material acceptance criteria to reduce the rate of fire spread in all buses.

H-89-5

Revise Federal Motor Vehicle Safety Standard 217 to require that school bus egress be based on vehicle occupant capacity and be no lower than those currently required for nonschool buses.

H-89-6

Revise Federal Motor Vehicle Safety Standard 301 to provide additional protection for school buses in severe crash situations based on an evaluation of the merits of relocating fuel tanks, providing additional structure to protect fuel system components, and frangible valves in critical locations.

H-90-74

Revise Federal Motor Vehicle Safety Standard 217, Bus Window Retention and Release, to include a requirement that floor level emergency exits should be designed so that once opened they remain open during emergencies and schoolbus evacuation.

Status:

A final rule implementing NHTSA rules that the number of school bus emergency exits be based on the seating capacity of school buses, and that floor level emergency exits should remain open during emergencies was published November 2, 1992. The Board continues to work on gaining acceptance of its recommendations on material flammability.

Aircraft Structural Fatigue Testing

Summary:

The airworthiness of the aging U.S. aircraft fleet is an issue that requires constant attention by operators, airframe and engine manufacturers, and the FAA. Despite the delivery of new airplanes, the average age of the airplanes in use in the U.S. continues to increase, and more planes than ever have exceeded their economic design life limit.

Addressee: Federal Aviation Administration

Date of Issue and Recommendation(s) Text:

July 21, 1989

A-89-67

Require that all turbojet transport category airplanes certificated in the future receive full scale structural fatigue testing to a minimum of two times the projected economic service life. Also require that all currently certificated turbojet transport category airplanes that have not been fatigue tested to two lifetimes, be subjected to such testing. As a result of this testing and subsequent inspection and analysis, require manufacturers to identify structures susceptible to multiple site damage and adopt inspection programs appropriate for the detection of such damage.

Status:

Structural integrity rules for new aircraft are completed and at the Office of Management and Budget for review. The Aviation

Regulatory Action Committee is in the process of drafting a suggested special regulation to cover existing aircraft structural testing. The committee's report is expected to be out during the summer of 1993.

Passenger Vessel Safety

Summary:

The Safety Board's main areas of concern in this area concerns the common language requirements and the authority for accident investigation in situations involving foreign flag vessels carrying U.S. citizens as passengers. Key problem areas concern fire detection and control; heat/smoke detector systems; sprinkler systems; hose ports in fire doors; lined linen fire hoses; and common language requirements for the crew.

Addressee: United States Coast Guard

Date of Issue and Recommendation(s) Text:

December 5, 1989

M-89-124

A centralized automatic/manual fire control system on the navigating bridge that integrates the fire detector, automatic fire door controls, the ventilation system controls, and general alarm into unified system.

M-89-125

Integrated heat and/or smoke detectors with automatic fire door release switches so that the doors will close automatically when the detectors are activated.

M-89-126

A sprinkler system installed in accommodation areas regardless of the method of fireproof construction used.

M-89-127

Hose ports in all fire doors so that these doors may be fully closed when fire hoses to be led through the doors.

M-89-128

Lined linen fire hoses or equivalent that replace unlined linen fire hoses.

M-89-129

A crew composition in each passenger vessel department such that at least 75 percent of the crew responsible for emergency, firefighting, and lifesaving service be able to understand and communicate in a common language with the officers and to understand and communicate in English with passengers.

Status:

With Coast Guard support, the International Maritime Organization (IMO) has taken action on most of the fire detection

and control recommendations. The IMO considered various reforms at a December 1992 meeting and staff is reviewing the actions taken. Some advisory material on requiring a common language as recommended may be developed at the IMO, but it does not appear that the Coast Guard or the IMO is going to move to require a common language.

**Uniform Policy on Collection; Handling; Processing and
Testing of Results of Specimens for Alcohol and other
Drug Detection**

Summary:

Investigators of transportation accidents have created concern about the prevalence of drug and alcohol use and its effect on the safety of the traveling public. Substantial differences exist among the post-accident/incident sampling and testing requirements for the various transportation modes and between the drug testing policies for DOT employees in safety sensitive positions and for private sector employees. The Board supports the adoption of uniform regulations for all drug and alcohol testing in all transportation modes.

Addressee: Secretary, Department of Transportation

Date of Issue and Recommendation(s) Text:

December 5, 1989

I-89-4

Develop postaccident and postincident testing regulations that are separate from the pre-employment, random, and reasonable suspicion testing regulations in all modal agencies.

I-89-5

Adopt uniform regulations for all drug and alcohol testing, other than postaccident and postincident testing, in all transportation modes, including U.S. Department of Transportation employees in safety sensitive positions.

Adopt uniform regulations on postaccident testing of private sector employees for alcohol and drugs in all transportation modes. Use the Federal Railroad Administration's (FRA) current regulation as a model regulation for all transportation modes except for the permissible blood alcohol level of less than 0.04 percent. Using the FRA regulation as a model for other transportation modes refers only to the collection of blood and urine and the screening and confirmation of positives in blood. As a minimum, the drugs identified in FRA screen should be used in the other modes. Reference to the FRA model does not refer to the administration or implementation of the regulation. The Safety Board recognizes that the implementation of the regulation may be different in the various transportation modes. The regulations for all modes should provide:

I-89-6

for the collection of blood and urine within 4 hours following a qualifying incident or accident. When collection within 4 hours is not accomplished, blood and

urine specimens should be collected as soon as possible and an explanation for such delay shall be submitted in writing to the administrator.

I-89-7

testing requirements that include alcohol and drugs beyond the five drugs or classes specified in the Department of Health and Human Services (HHS) guidelines and that are not limited to the cutoff thresholds specified in the HHS guidelines. Provisions should be made to test for illicit and licit drugs as information becomes available during an accident investigation.

Adopt uniform regulations in postaccident and postincident testing of U.S. Department of Transportation employees in safety sensitive positions. The regulations should provide:

I-89-8

for the collection of blood and urine within 4 hours following a qualifying incident or accident. When collection within 4 hours is not accomplished, blood and urine should be collected as soon as possible and an explanation for such delay shall be submitted in writing to the administrator by the local official making the decision to test.

I-89-9

testing requirements that include alcohol and drugs beyond the five drugs or classes specified in the Department of Health and Human Services (HHS) guidelines and that are not limited to the cutoff thresholds specified in the HHS guidelines. Provisions should be made to test for illicit and licit drugs as information becomes available during an accident investigation.

I-89-11

procedures by which Federal employees are sent to the nearest hospital or medical facility for obtaining blood and urine specimens for toxicological testing following a qualifying incident or accident.

I-89-12

Issue rules specifying zero (no alcohol) as the blood alcohol concentrations for private sector employees in safety sensitive positions in all transportation modes and for Federal employees in safety sensitive positions.

Status:

On December 15, 1992, the DOT published an Notice of Proposed Rulemaking (NPRM) on the testing of transportation industry employees for alcohol and other drugs. The Safety Board provided extensive comments on the NPRM, a copy of which is attached.

LETTER FROM CARL W. VOGT, CHAIRMAN, NATIONAL
TRANSPORTATION SAFETY BOARD

April 14, 1993

Department of Transportation
Office of the Secretary
Docket Clerk
Attn: Docket No. 48513
400 7th Street, S.W., Room 4107
Washington, D.C. 20590

Dear Sir:

The National Transportation Safety Board has reviewed the Department of Transportation's (DOT) proposed rules "Limitation on Alcohol use by Transportation Workers" and "Procedures for Transportation Workplace Drug and Alcohol Testing Programs." Similarly, we have reviewed the following companion notices of proposed rulemaking: Federal Aviation Administration (FAA), "Alcohol Misuse Prevention Program for Personnel Engaged in Specified Aviation Activities;" Federal Highway Administration (FHWA), "Federal Motor Carrier Safety Regulations; Commercial Motor Carrier Safety Assistance Program; Controlled Substances and Alcohol Use and Testing; Commercial Driver's License Standards; Driving of Motor Vehicles; Hours of Service of Drivers;" Federal Railroad Administration (FRA), "Alcohol Testing; Amendments to Alcohol/Drug Regulations;" Federal Transit Administration (FTA), "Prevention of Alcohol Misuse in Transit Operations;" Research and Special Programs Administration (RSPA), "Alcohol Misuse Prevention Program;" and, United States Coast Guard (USCG), "Chemical Drug and Alcohol Testing of Commercial Vessel Personnel; Collection of Drug and Alcohol Testing Information." The National Transportation Safety Board offers the following comments on the proposed rules and companion notices of proposed rulemaking.

The Department of Transportation requested comments on less costly alternatives to the current random drug testing programs for aviation, motor carrier, rail, mass transit, pipeline and maritime industries. The Safety Board believes the testing rate should be set at the lowest rate that will provide deterrence. Any change in the current testing rate should be based on credible, peer-reviewed research in the transportation industry or in comparable workplace settings. Pending evaluation of such research, we believe the current random testing rate should not be changed.

Regarding drug testing in motor carrier operations, the National Transportation Safety Board has recommended in Safety Recommendation H-90-22 that the Federal Highway Administration:

Establish a demonstration project(s) to deter the use of alcohol and other drugs by drivers of medium and heavy trucks that includes alcohol and other drug testing at special roadside sobriety check-points, truck inspection lanes, and truck weigh stations.

The purpose of this recommendation was to encourage the FHWA to explore a low cost alternative to the current motor carrier random testing program and to conduct the testing where it should have the greatest deterrent effect. The FHWA is in the process of evaluating roadside testing in four States. Therefore, we recommend that no changes in motor carrier testing programs occur until the demonstration projects are complete and fully evaluated. If the results are positive, a roadside drug testing program should be developed.

Other Safety Board recommendations regarding drug testing are included in Safety Recommendations I-89-4 through -12 that have been proposed to the Department, a copy of which is enclosed. Safety Recommendation I-89-10 has been closed as no longer applicable because of Congressional action.

The National Transportation Safety Board is pleased that the Department and its operating administrations are proposing rules for transportation workplace alcohol testing. We support the DOT proposal to use breath as the primary specimen and breath testing as the primary method for all categories of employer alcohol testing (pre-employment, random, reasonable suspicion, and postaccident). The Safety Board believes that breath testing, when used, should include a second test; and the second confirmatory breath test device should produce hard copy results of the tests.

The Safety Board believes that the alcohol testing rules proposed by the Department and its operating administrations specified above are very complex and may be difficult for transportation industries and their workers to understand. Further, the proposed rules lack uniformity across transportation modes. Therefore, we believe they will be difficult to apply.

The proposed DOT and modal regulations provide for a prohibition against using alcohol before reporting for duty. The FRA proposed rules prohibit alcohol use 4 hours before reporting for duty or during the period after receiving a notice to report for duty. The FAA rules require an 8 hour abstinence period for flight crewmembers, but proposed a 4 hour rule for others performing safety sensitive functions. The FTA proposes to prohibit alcohol use 4 hours before reporting for duty.

Studies suggest that a 4 hour abstinence period may be too short. The mean blood alcohol concentration (BAC) of alcohol positive persons in fatal accidents is in the 0.15 percent to 0.17 percent range, depending on transportation mode. This suggests that an abstinence period longer than 8 hours before reporting for duty may enhance safety. While we would prefer a longer abstinence period, the Safety Board supports an 8 hour rule if it is consistently applied across all modes of transportation.

The proposed rules set a blood alcohol concentration of 0.04 percent or greater as the rule violation level. The rules also prohibit a person from performing a safety sensitive function until the BAC is less than 0.02 percent. Permitting a person with any positive BAC to perform a safety sensitive function in any mode of transportation is inconsistent with the results of research in many transportation modes that indicate "that there is no lower threshold level below which impairment does not exist for alcohol." (DOT HS 807 280) Further, there is evidence, in aviation and highway research, of a "hangover effect" on performance many hours after a person's BAC has returned to zero. The Safety Board believes that the proposed rules setting 0.04 percent BAC as the offense level sends the wrong message about the permissibility of alcohol use in all modes of transportation. We believe that the only safe BAC is a zero (0.00 percent) BAC. All the proposed rules should specify a zero BAC when reporting for duty to perform safety sensitive functions.

DOT and its operating administrations should propose a uniform system of sanctions for violations of the alcohol rules. The proposed rules provide for different sanctions for the same violations in different transportation modes. For example, work suspension periods for a positive alcohol test vary substantially among the modes of transportation. Persons with a BAC of 0.04 percent and below cannot perform a safety sensitive function in aviation for 8 hours, until the next duty period, or until the BAC is less than 0.02 percent. The FTA proposes similar regulations. In commercial motor carrier operations, under current regulations, a driver with any measurable alcohol can be placed out of service for 24 hours. Under one option of the proposed FHWA rules, a driver with any measurable alcohol is prohibited from safety sensitive functions until the driver's BAC

is below 0.02 percent; a driver with a 0.02 percent BAC or greater, but less than 0.04 percent, is prohibited from safety sensitive functions for 24 hours. The Safety Board believes that any alcohol is impairing and that there may be a residual adverse effect after the BAC returns to zero. The proposed rules should be consistent among all modes. The Board suggests that all DOT administrations adopt the current FHWA rule that removes a driver with a positive BAC from service for 24 hours. Under no circumstances should a person with a positive BAC perform a safety sensitive function.

Similarly, the proposed rules carry vastly different sanctions for refusal to submit to a test. For example, the USCG considers refusal as reason for a suspension hearing, the FHWA considers it grounds for a 1 year suspension, and the FTA considers refusal a grounds to prohibit a person from duty. The different sanctions for refusal to submit to a test could result in inequitable treatment of persons engaging in the same behavior (refusing a test) in the different modes. The Safety Board believes the penalty for test refusal should be consistent. We recommend that the FHWA suspension period be used.

The proposed postaccident testing rules are inconsistent among the modes of transportation. The Safety Board has recommended that specimen collection take place "within four hours following a qualifying incident or accident." We hope that specimen collection can be completed within 2 hours in all transportation modes as proposed by DOT. The Safety Board believes that all modes should require a notification to the modal Administrator when a postaccident test specimen is not collected within 2 hours of the accident. Notification requirements should not be further delegated by the Administrator and the notification should include reasons for the delay. Further, there should be no limit on the time for testing if 2 hours has elapsed. Testing should be completed as quickly as possible after the accident with the objective of obtaining specimens within either the 2 hours proposed or the 4 hours recommended by the Safety Board in Safety Recommendation I-89-8 (see enclosure).

The Safety Board is concerned about the proposed postaccident prohibitions on alcohol use for an 8 hour period unless the person has been tested. We suggest that all proposed rules be revised to prohibit any alcohol use by any person performing a safety sensitive function for 24 hours after an accident unless they have been tested. In all modes, an uninjured person who leaves the accident scene without submitting to an alcohol test should be considered to have refused the test. Leaving the accident scene without submitting to a test should carry the same sanctions as test refusal carries.

Postaccident specimen collection for alcohol testing varies across the modes of transportation. The Safety Board has recommended changes in postaccident specimen collection for drug testing that can also apply to alcohol. These changes are included in Safety Recommendations I-89-4 through -12 (see enclosure). The Safety Board continues to believe that postaccident and postincident testing for both alcohol and other drugs should be separate from other testing (pre-employment, random, and reasonable suspicion testing) in all modes of transportation. With regard to postaccident alcohol testing, the Safety Board encourages alcohol breath testing for persons who survive the accident. This should not preclude the Department from rewriting the postaccident drug testing regulations to require blood specimen collection. In that manner, investigators would have the most reliable test specimens for both alcohol and other drug use.

The proposed regulations also vary regarding return to duty testing. The Safety Board believes that all persons who test positive, refuse to submit to testing, or who return from rehabilitation should be subject to return to duty testing in all modes of transportation. Persons with an identified alcohol abuse problem should be subject to close supervision, including frequent, unannounced tests, for an appropriate period. This is consistent with Safety Recommendation H-90-20 that the Safety Board issued to the FHWA (see enclosure).

In conclusion, the Safety Board suggests that alcohol testing policy be consistent among all modes of transportation. The Department should strive for a uniform alcohol testing policy in critical areas such as blood alcohol concentration (BAC), abstinence prior to duty, sanctions, and postaccident abstinence. Implementation and enforcement should be tailored to the specific mode of transportation.

The FAA requested comments on employee training and on the population performing safety sensitive functions that should be covered by the proposed rules. The Safety Board believes that training or information and education programs on the effects of alcohol and other drugs on operations are essential. We have recommended such programs in Safety Recommendations H-90-21 issued to the FHWA and A-92-110 issued to the FAA (see enclosures). Such information and education efforts are a necessary part of an accident prevention program. With regard to persons performing safety sensitive functions, the Safety Board believes that any person whose performance has the potential to affect operational safety should be covered. In the aviation area, for example, covered functions should include persons performing maintenance and fueling operations.

The National Transportation Safety Board believes that the proposed rules should be revised and implemented as quickly as possible. Where the modal administrations such as FAA and FHWA rely on State laws for additional enforcement, States should be encouraged to enact laws that are consistent with the final rules. Further, the Department and appropriate modal administrations may need to draft model legislation to assist States in enacting laws that support the Federal regulations.

The National Transportation Safety Board appreciates the opportunity to comment on these proposed rules.

Sincerely,



Carl W. Vogt
Chairman

Airplane Wheel Brake Wear Limits

Summary:

As a result of investigations and a special investigation report, the Safety Board issued safety recommendations addressing inadequacies in transport airplane brake certification requirements, rejected takeoff (RTO) safety margin requirements, and DC-10-30/40 brakes.

Addressee: Federal Aviation Administration

Date of Issue and Recommendation(s) Text:

March 21, 1990

A-90-30

Require the appropriate airplane and brake manufacturers to verify, by conducting tests and analyses, that all turbojet transport category airplanes meet the maximum

energy requirement of 14 CRF 25.735(f) for wheel brake assemblies at the "maximum brake wear" limits; if the requirement is not met, reduce the maximum kinetic energy takeoff limit. In conducting this verification, use dynamometer brake test curves for demonstrating energy capacity that are consistent with runway-demonstrated braking forces during a maximum kinetic energy rejected takeoff. The test curves should replicate the brake's high energy absorption rate that occurs at the initiation of a maximum kinetic energy rejected takeoff. Note: this recommendation supersedes Safety Recommendation A-88-76.

A-90-31

Require airplane manufacturers to conduct tests and analyses to determine the increase in the stopping distance for all turbojet transport category airplanes currently in service attributed to the difference between the use of new brakes and the use of brakes worn to replacement limits without credit for the use of reverse thrust.

A-90-32

Require the appropriate airplane manufacturers to determine by tests, simulation, and/or analyses the accelerate-stop distances for all turbojet transport category airplanes currently in service as required by 14 CRF 25.109 (pre amendment 42) using demonstrated certification stopping performance data from worn brakes and current procedures prescribed for rejected takeoff. Account for demonstrated pilot reaction times and for deceleration device reaction times, such as engine spool-down time and brake force ramp-up time in the determination of accelerate-stop distances and add a distance safety margin for in-service variations as described in advisory circular 25-7 (Chapter 2, Paragraphs 11.C.12.IV and VII) to be equivalent to at least a distance traveled in 2 seconds at an appropriate brake-on speed or V1 speed.

A-90-33

Revise, as appropriate, the accelerate-stop data in the approved flight manuals of all turbojet transport category airplanes currently in service to include the increase in stopping distance attributed to worn brakes (determined in accordance with Safety Recommendation A-90-31) and to include the proper application of safety margins for in-service variation (determined in accordance with Safety Recommendation A-90-32).

A-90-34

Require that the operators of large turbojet transport category airplanes add the distance required for runway turn-on and takeoff alignment to the field length distances as determined from data in the approved flight manuals.

A-90-35

Revise 14 CFR 25.109 to require that the stopping distance capabilities of brake assemblies at the allowable "maximum brake wear" limit are included in the requirement for determining the accelerate-stop distances for certification of new airplanes without credit for the use of reverse thrust.

Status:

During the summer of 1991, the FAA issued a number of Airworthiness Directives related to brake wear limits. Further, NPRMs were issued for turbojet models L-1011, the DC-9, the B-727, -37, -47, -57, and -67. The FAA has dropped plans to pursue further rulemaking action on aircraft performance related to RTOs and related safety margins. The Safety Board will continue to address the certification and operational aspects of takeoff performance and safety as these issues relate to runway overrun accidents and incidents.

Pipeline Excess Flow Valves

Summary:

Since 1971, the Safety Board has advocated the use of excess flow valves to minimize the consequences of major gas leaks on service lines.

Addressee: American Gas Association, American Public Gas Association, and the Research and Special Programs Administration

Date of Issue and Recommendation(s) Text:

April 20, 1990

P-90-6

Encourage members to advise their gas customers of the safety benefits of excess flow valves when installed in gas service lines and offer their customers the opportunity to purchase and have installed at cost an excess flow valve when installing new, renewing, or replacing gas service lines.

P-90-12

Require the installation of excess flow valves on new and renewed single-family residential high pressure service lines which have operating conditions compatible with the rated performance parameters of at least one model of commercial available excess flow valve.

Status:

The Department of Transportation is under Congressional directive to take some action on this issue. The Pipeline Safety Act of 1992 requires the Secretary of DOT to issue regulations specifying the circumstances under which operators must install

excess flow valves in new or rebuilt natural gas distribution systems. We are awaiting final action by DOT on the issue.

Adjustable Upper Anchorage Points for Shoulder Belts of Automobiles

Summary:

The Safety Board believes that increasing the level of occupant protection in passenger cars is one of the most effective ways to lower the number of transportation casualties. One way of accomplishing that goal is to increase both the number of passenger vehicle occupants who use lap/shoulder belts and the number of them who use them properly.

Addressee: Automobile Manufacturers

Date of Issue and Recommendation:

December 19, 1990

H-90-111

Provide all newly manufactured passenger vehicles an adjustable upper anchorage for the shoulder portion of the seatbelt.

Status:

Progress continues in bringing about the provision for adjustable upper anchorage points for shoulder harness seat belts. A group of letters to the manufacturers that have not fully complied with this action were sent on January 11, 1993. The Safety Board letters asked for reports on the status of the issue within the various companies.

Mandatory Seat Belt Laws in States

Summary:

The Safety Board believes that lap/shoulder belts clearly offer occupants of motor vehicles substantial protection in a wide variety of crashes and further contends that mandatory use laws (MULs) are an effective way to increase the use of lap/shoulder belts systems.

Addressee: 12 States: Alabama, Delaware, Kentucky, Maine, Massachusetts, Nebraska, New Hampshire, North Dakota, Rhode Island, South Dakota, Vermont, and West Virginia.

Date of Issue and Recommendation(s) Text:

April 10, 1991

Enact legislation that requires occupants of all passenger automobiles, vans, and light trucks to use lap/shoulder belt systems at seating positions equipped with such belt systems.

Status:

Legislation signed into law redirects a portion of Federal highway construction funds in states which do not enact MULs by 1993 to highway safety programs. Bills have passed the legislature in three of the eight states remaining without MULs, North Dakota and West Virginia, and Vermont. The New Hampshire Senate has cleared a measure. Maine, Massachusetts, South Dakota and Kentucky have not enacted MULs.

Heavy Truck Safety

Summary:

As a result of a one-year Safety Board investigation, it found that 33 percent of the fatally injured truck drivers tested positive for alcohol and other drugs of abuse. The most frequently cited probable causes in the fatal accidents were fatigue and alcohol and other drug impairment. The Safety Board made 46 recommendations calling for improvements in national data bases on commercial truck accidents; improved and standardized post-accident toxicological specimen collection, testing, and reporting; improvements in truck driver alcohol and other drug screening and medical testing procedures; automated devices to document hours of service violations; toxicological testing of all drivers in fatal truck accidents; and a variety of state laws including a functional zero blood alcohol content for commercial drivers.

Addressee: The Department of Transportation, the Federal Highway Administration, American Trucking Association, and the 50 States.

Date of Issue and Recommendation(s) Text:

April 4, 1990

H-90-17

Require pre-employment alcohol and other drug tests on all drivers of commercial trucks with a gross vehicle weight rating of 10,000 pounds and above as a condition of employment.

H-90-18

Amend 49 CFR 391.21 "Application for Employment" and 391.23 "Investigations and Inquiries" to include a complete review of alcohol and other drug abuse treatment history prior to employment as a commercial truck driver.

H-90-19

Require commercial truck driver applicants with a prior history of drug and/or alcohol abuse to complete a certified treatment program and obtain a physician's evaluation of substance abuse and dependency.

H-90-20

Require close supervision, including frequent, unannounced drug testing, for an appropriate period, of commercial truck drivers with an identified alcohol and other drug

abuse problem. Such testing should be sufficiently frequent to create the likelihood of detection if the person uses drugs of abuse.

H-90-21

Disseminate safety information to national, state, and local police agencies, public service and safety agencies, professional truck driver groups, and individual truck drivers, regarding: The effects of fatigue, alcohol and other drug use; the interaction of alcohol, drugs and fatigue; the prevalence of drug and alcohol abuse among professional commercial vehicle operators; and, methods of minimizing conditions that lead to commercial vehicle operators driving while fatigued.

H-90-22

Establish a demonstration project(s) to deter the use of alcohol and other drugs by drivers of medium and heavy trucks that includes alcohol and other drug testing at special roadside sobriety checkpoints, truck inspection lanes, and truck weigh stations.

H-90-23

Establish and fund a program to train instructors to provide drug recognition expert training to Federal agency inspectors/investigators, police, and other public service personnel with commercial truck and truck driver oversight responsibilities.

H-90-24

Amend 49 CFR 391.43 to require more extensive and frequent state of the art cardiac screening tests and examinations of older commercial truck drivers (age 40 and above) and for all commercial drivers with cardiac conditions. Commercial drivers with a cardiac history or condition should be disqualified until cleared by a competent medical authority.

H-90-25

Develop a clear set of medical standards for cardiac risk assessment and require physicians to use them in qualifying older commercial truck drivers and for commercial drivers with cardiac conditions. Medical certification should include medical state of the art cardiac risk factors.

H-90-26

Provide for criminal penalties for physicians who deliberately qualify commercial truck drivers with serious medical conditions in spite of contradictory medical evidence and for physicians, commercial drivers, and others who falsify the medical examiner's certificate.

H-90-27

Improve the medical examination form in 49 CFR 391.43 to ensure that the examining physician is aware of truck operation risk factors and of the physical and other stress producing requirements of commercial truck

operation. Provide for a means for physicians to acknowledge that they understand the rigors of commercial truck operation and that the driver being examined is qualified for such commercial truck operations. The physician should also certify that he understands the penalties for deliberate and/or false statements on the medical certificate and for medical certificate falsification.

H-90-28

Require automated/tamper-proof on-board recording devices such as tachographs or computerized logs to identify commercial truck drivers who exceed hours of service regulations.

H-90-29

As part of the FHWA on-going study of fatigue and loss of alertness among commercial vehicle operators, investigate the interactions of fatigue and drug usage.

H-90-30

Revise 49 CFR Parts 391 and 395 to establish driver hours of service violations, logbook irregularities, or the presence of multiple logbooks as a reasonable cause requiring a drug test of the driver. Amend the regulations and provide notice to drivers of these revised regulations.

H-90-31

Revise 49 CFR Parts 391 and 392 to establish violation of the commercial vehicle operation alcohol offense (49 CFR 392.4, 392.5) as a reasonable cause requiring a drug test of the driver. Amend the regulations and provide notice to drivers of these revised regulations.

H-90-32

Amend 49 CFR Parts 392 and 395 to prohibit employers, shippers, receivers, brokers, or drivers from accepting and scheduling a shipment which would require that the driver exceed the hours of service regulations in order to meet the delivery deadline (similar to current regulations regarding schedules which would require the driver to exceed the speed limit (49 CFR 392.6).) In conjunction with the Interstate Commerce Commission, provide for operating certificate and financial penalties appropriate to the offense.

To the states:

H-90-42

Enact legislation or issue regulations to require the collection of blood samples and other drug toxicological testing from all vehicle operators involved in fatal commercial truck accidents.

H-90-43

Report alcohol and other drug toxicological tests requested and results obtained in fatal accidents to the

fatal accident reporting system operated by the National Highway Traffic Safety Administration.

H-90-44

Require intrastate motor carriers in your State to: Perform pre-employment alcohol and other drug tests for all applicants seeking to work as drivers of commercial trucks weighing over 10,000 pounds.

H-90-45

Require intrastate motor carriers in your State to: Review the alcohol/drug abuse treatment history of all applicants seeking work as commercial truck drivers.

H-90-46

Require intrastate motor carriers in your State to: Obtain proof that applicants seeking work as commercial truck drivers, who have had a history of alcohol/drug abuse, have successfully completed a certified treatment program and obtained a physician's evaluation of substance abuse and dependency.

H-90-47

Require intrastate motor carriers in your State to: Require close supervision, including frequent unannounced drug testing, for an appropriate period, of commercial truck drivers with an identified alcohol or other drug abuse problem. Such testing should be sufficiently frequent to create the likelihood of detection if the person uses drugs of abuse.

H-90-48

Require intrastate motor carriers in your State to: Require automated/tamper-proof on-board recording devices such as tachographs or computerized logs to identify commercial truck drivers who exceed hours of service regulations.

H-90-49

Disseminate safety information to commercial truck drivers in your State regarding the effects of fatigue, alcohol and other drug use, and the interaction of drugs and fatigue.

H-90-50

Provide drug recognition training to personnel in State and local police agencies and in other public safety/law enforcement agencies who have commercial truck and truck driver enforcement and oversight responsibilities.

H-90-51

Develop a coordinated Statewide program to conduct selective alcohol and other drug enforcement operations at times and locations of high levels of truck accidents--specifically at times of high incidence of commercial truck accidents involving alcohol and/or other drugs.

H-90-52

Adopt revised Federal regulations or establish State regulations requiring medical certification of commercial truck drivers and for more extensive and frequent, state of the art cardiac screening tests and examinations of older commercial truck drivers (age 40 and older) and for commercial drivers with cardiac conditions.

H-90-53

Enact legislation or adopt regulations, as appropriate, to define the alcohol concentration level that constitutes driving a commercial motor vehicle "under the influence" at the lowest possible level consistent with the capability of testing equipment to measure any ingested alcohol.

H-90-54

Enact legislation to establish 0.01 percent (the practical scientific level which allows for instrument sensitivity and individual differences) as the per se offense blood alcohol concentration for operators of commercial vehicles in your State.

Status:

Portions of the Notice of Proposed Rulemaking related to alcohol and other drug use and detection issued by the Department of Transportation on December 15, 1992, will cover what the Board has asked for in some of the recommendations. There is still a difference of opinion regarding the required use of tachographs. The Federal Highway Administration believes that there is no need for a regulation as a large percentage of the operators are installing the devices on their trucks. The Board believes that an enforceable rule is needed to achieve the highest use possible. The issues covered by the medical certification process are being worked on by the Federal Highway Administration.

SENATOR LAUTENBERG: Please update the information on the status of your recommendations by modal administration within DOT and by travel mode. This information is found on pp. 110-102 of Sen. Hrg. 102-725, pt. 2.

ANSWER: The information is below.

Average Days to Closed--Acceptable and to First Response for
Recommendations Issued Since 1 January 1963

Mode	Recommendations Closed as Acceptable	Average Days to Closeout	Average Days to First Response
Aviation	1999	753	70
Highway	756	1457	352
Intermodal	76	1434	272
Marine	821	1370	320
Pipeline	640	1322	589
Railroad	892	1035	197

Rate of Acceptance of Closed Safety Recommendations
(CAA + CAAA + CEX /Total Closed)

Mode	Rate of Acceptance for Closed Recommendations
Aviation	77.7%
Highway	76.2%
Intermodal	75.0%
Marine	64.3%
Pipeline	79.0%
Railroad	69.6%
Overall	73.7%

National Transportation Safety Board

Status of Safety Recommendations by DOT Administration March 1993

MODE	CEX	CAA	CAAA	CJA	CUAS	CR	CS	CNLA	Total Closed		OAA	OAAAR	OUR	ORR	OAR	Total Open	Total Issued	Acceptance Rate
									17	160								
SEC DOT	0	99	16	11	0	12	5	17	160	23	1	10	0	3	37	197	86.88%	
FAA	0	1571	337	397	9	94	44	27	2479	187	22	45	73	39	366	2845	82.44%	
FHWA	0	216	43	33	0	19	17	8	336	55	4	9	3	1	72	408	88.33%	
NHTSA	0	96	38	29	0	21	7	13	204	34	3	1	0	2	40	244	85.07%	
FRA	1	180	36	77	8	22	15	24	363	29	1	10	1	9	50	413	72.22%	
RSPA	1	39	5	16	0	3	5	5	74	46	2	9	1	5	63	137	78.81%	
FTA	0	32	6	11	0	1	0	3	53	5	0	0	0	0	5	58	79.63%	
USCG	1	367	63	164	10	47	14	25	691	205	31	40	12	22	310	1001	75.71%	
MARAD	0	11	1	0	0	0	0	5	17	0	0	0	0	0	0	17	100.00%	
TOTALS	3	2611	545	738	27	219	107	127	4377	584	64	124	90	81	943	5320	81.07%	

Definition of Status Assignments:

CEX:	Closed—Exceeds Recommended Action	OAA:	Open—Acceptable Response
CAA:	Closed—Acceptable Action	OAAAR:	Open—Acceptable Alternate Response
CAAA:	Closed—Acceptable Alternate Action	OUR:	Open—Unacceptable Response
CUA:	Closed—Unacceptable Action	ORR:	Open—Response Received
CUAS:	Closed—Unacceptable Action/Superseded	OAR:	Open—Await Response
CR:	Closed—Reconsidered		
CS:	Closed—Superseded		
CNLA:	Closed—No Longer Applicable		

National Transportation Safety Board

Status of Safety Recommendations by Mode

March 1993

MODE	CEX	CAA	CAAA	CUA	CUAS	CR	CS	CNLA	Total Closed	OAA	OAAAR	OUR	ORR	OAR	Total Open	Total Issued	Acceptance Rate
Aviation	0	1689	354	404	9	98	44	33	2631	219	25	50	104	74	472	3103	83.16%
Highway	2	674	108	112	0	53	31	49	1029	287	8	29	41	110	475	1504	88.44%
Intermodal	1	69	7	12	1	1	0	12	103	43	2	14	2	15	76	179	81.88%
Marine	3	749	104	297	10	77	15	66	1321	247	32	68	21	87	455	1776	75.17%
Pipeline	0	603	49	104	0	20	15	35	826	106	3	11	20	19	159	985	86.87%
Railroad	2	803	98	232	10	43	16	93	1297	139	4	32	16	61	252	1549	79.24%
TOTALS	8	4587	720	1161	30	292	121	288	7207	1041	74	204	204	366	1889	9096	82.17%

Definition of Status Assignments:

CEX:	Closed—Exceeds Recommended Action	OAA:	Open—Acceptable Response
CAA:	Closed—Acceptable Action	OAAAR:	Open—Acceptable Alternate Response
CAAA:	Closed—Acceptable Alternate Action	OUR:	Open—Unacceptable Response
CUA:	Closed—Unacceptable Action	ORR:	Open—Response Received
CUAS:	Closed—Unacceptable Action/Superseded	OAR:	Open—Await Response
CR:	Closed—Reconsidered		
CS:	Closed—Superseded		
CNLA:	Closed—No Longer Applicable		

AVIATION ISSUES

FAA Inspections

SENATOR LAUTENBERG: In 1991, FAA announced a new program to assess foreign countries' compliance with international safety standards. To date, FAA has found that 11 of 20 countries assessed did not meet those standards. In addition, the Safety Board's statistics show that commuter airline accidents increased about 50 percent between 1990 and 1991. Finally, we note that the GAO testified last year that FAA's routine inspections of commuter airlines were not effective in discovering safety violations that led to emergency revocation orders.

Has NTSB analyzed foreign carrier accident causes based on its investigations? If so, what were the results? If not, does NTSB plan to do so?

ANSWER: The Safety Board continues to be deeply involved in overseas accident circumstances by sending investigators to the scenes of selected accidents and by monitoring the progress of other countries' investigations closely. Our staff maintains a close liaison with the investigation authorities of many countries, even for cases not involving U.S. airlines or U.S.-manufactured aircraft. For example, if a foreign-registered aircraft manufactured in France, Britain, or Holland, etc. crashes in another country, our staff monitor the accident findings to develop corrective actions for U.S. operators.

The causes of overseas accidents do not vary substantially from the causes of U.S. accidents. That is, the majority of the causes involve some combination of human error, mechanical failures, design deficiencies, maintenance problems, adverse weather, etc. The lessons learned from virtually any airline accident can be applied to improve the safety of U.S. operators. The Safety Board staff also maintain close communications with the Air Transport Association member airlines' safety officials, airframe and engine manufacturers, the Federal Aviation Administration pilot and flight attendant unions, etc. to ensure dissemination of safety information that emerges from overseas investigations.

The Safety Board normally sends a U.S. Accredited Representative, and occasionally an investigative team, per the provisions of Annex 13 to the ICAO treaty, to assist in the investigation of major foreign aviation accidents involving U.S. manufactured airplanes. Additionally, the Safety Board normally receives copies of the final reports of foreign accident and incident investigations concerning both U.S. and foreign-manufactured airplanes from our colleagues overseas. The Safety Board reviews these accident reports to determine if there are airworthiness problems that would affect airplanes operating in the United States and operational procedures of other countries that could affect the safety of U.S. airlines operating into those countries. Additionally, the Safety Board reviews foreign accident reports for areas to improve the safety of the traveling public.

The Safety Board has issued numerous recommendations to the FAA concerning airworthiness and operational problems that were discovered as a result of the investigation of foreign accidents.

Additionally, as a result of foreign accidents, the Safety Board has worked with the airlines and manufacturers on serious incidents to correct practices that did not cause or result in an accident, but were believed not to be in the best interests of aviation safety.

SENATOR LAUTENBERG: NTSB's report on the 1989 Suriname Airlines accident recommended that FAA perform more in-depth inspections of foreign air carriers. What did NTSB envision as more in-depth inspections?

ANSWER: As a result of the Safety Board's participation in the investigation of the accident involving the Suriname Airways DC-8 that was registered in the U.S., the Safety Board recommended that the FAA conduct periodic ramp and en route inspections of U.S. registered airplanes operated by airlines operating under 14 CFR Part 129. The purpose of this recommendation was to increase the two types of FAA inspections most likely to result in an increase in compliance with applicable regulations. These are ramp inspections, in which an inspector boards and inspects the status of a parked aircraft but does not observe that aircraft in flight, and en route inspections, in which an inspector observes a flight of that aircraft. Since the recommendation was issued the FAA has increased its activities in the oversight of foreign air carriers operating under 14 CFR Part 129. Recent FAA action has resulted in several foreign air carriers being denied access to U.S. airports. The majority of these are based in Central and South America.

SENATOR LAUTENBERG: Has NTSB analyzed commuter airline accident causes to determine trends that need to be addressed? If so, please discuss the results of such analysis.

ANSWER: In 1992, the total accident rate and the fatal accident rate for scheduled commuter or regional airline aircraft, when cited in terms of accidents per 100,000 departures, was nearly equal to the annual accident rate when averaged over the last 10 years. However, one must note that these statistics refer to operations conducted under 14 CFR Part 135, smaller aircraft, many with 19 seats or less. When examined with the larger airplanes that regional airlines have operated under 14 CFR Part 121, the accident record has improved over the last 10 years, a trend that we at the Safety Board have been quite pleased with. We believe that the decrease is due to several factors.

Because the major airlines have encountered financial circumstances, they have hired few new pilots over the past several years, causing a reduced turnover among regional airline pilots, a major source of new pilots for the airlines. Consequently, the experience level among regional airline pilots has increased.

In addition, the regional airlines have upgraded their fleets with bigger, more sophisticated aircraft. Unlike earlier designed aircraft, flight simulators have been developed as training devices for many of these aircraft. Generally, economic factors had prevented the development of flight simulators for the smaller aircraft that had been used as regional aircraft. Flight simulators enable better training in emergency scenarios than aircraft because more realistic situations can be presented to pilots than can be presented in aircraft.

We expect that the accident rate could continue to improve with the requirement for installation of ground proximity warning systems (GPWS) that the Federal Aviation Administration has mandated for regional airline aircraft beginning in 1994. Had GPWS been installed previously, it is possible that at least two of the regional airline accidents that occurred in 1992 could have been avoided.

SENATOR LAUTENBERG: How many commuter airline accidents can be attributed to inadequate FAA inspection surveillance?

ANSWER: Safety Board records indicate that since 1983, there have been 11 accidents involving scheduled commuter airlines in which inadequate FAA surveillance of the carrier's operation was cited as causal or contributory to the accident. Only four of these accidents occurred after 1985.

SENATOR LAUTENBERG: To what extent do pilots exceeding flight and duty time limits contribute to commuter accidents?

ANSWER: Although the Safety Board has found in several commuter accidents that the pilots might have been deprived of sleep as a result of their schedule, the effect of fatigue could not be proven as a factor in the accidents. In these cases, the pilots were within the existing flight and duty time requirements. Although the Board has not evaluated the adequacy of the present rule, it is aware of the Air Line Pilots Association's concern and would like to support a further review of this issue.

SENATOR LAUTENBERG: What should NTSB and FAA do to reduce commuter accident trends?

ANSWER: In the past few years the Safety Board has issued several safety recommendations to the FAA as a result of accidents involving airplanes operated under 14 CFR Part 135. The FAA has accepted most of these recommendations and has taken positive actions to increase its surveillance and oversight of commuter airlines.

The FAA's actions to encourage the use of state-of-the-art simulators and other modern training aids and techniques by commuter airlines is a positive step to preventing accidents. The Safety Board is aware that the commuter air carrier segment of the aviation industry is growing quickly, and that the complexity of operations and the types of airplanes used by the commuter fleets is increasing. Compounding this problem is the fact that the commuter airlines are often staffed with managers, pilots, and mechanics with much less experience than the major airlines. The Safety Board believes that the FAA must sustain its increased surveillance of expanding commuter air carriers to prevent unsafe trends from developing. Moreover, the commuter airlines' management personnel must face the challenges associated with their type of operation which contain elements that are unique and often differ from the major airlines' operations.

Lastly, the installation of ground proximity warning systems (GPWS) in commuter model aircraft will go a long way to preventing many of the controlled flight into terrain (CFIT) accidents. The FAA is making progress on addressing this issue that stemmed from

previous Safety Board recommendations. GPWS installations in large aircraft in the 1970s made tremendous strides in preventing many CFIT accidents.

Aircraft Certification

SENATOR LAUTENBERG: Several recent aircraft accidents have raised serious questions about the FAA's certification and regulatory activities. FAA uses designated representatives employed by manufacturers to conduct many of these activities. In 1980 the National Academy of Sciences raised concerns about FAA's ability to oversee designee activities.

In January 1992, an Airbus A-320 crashed in France. This was the third fatal A-320 crash since this model was introduced into service in 1988. Have these accidents been design related? If so, what steps should be taken to ensure the safety of those A-320 aircraft now in service in the United States?

ANSWER: The first two accidents involving the Airbus A-320 were the result of the pilots not properly monitoring the total energy of the airplane and they allowed the airplanes' airspeed to go below the reference approach speed while at a low altitude with the engines at an idle power setting. The Safety Board participated in both investigations. Those investigations found that when the pilots realized that they needed to add power in order to gain airspeed and climb, there was insufficient time for the engines to accelerate to full power prior to the airplane striking the ground. As a result of those accidents, Airbus has since reprogrammed the A-320's flight performance system to monitor the engine power setting, altitude, and airspeed to not let the total energy of the airplane decrease to the extent that a successful "go-around" maneuver or landing is not possible. The investigations determined that neither accident was directly the result of the design features of this advanced technology airplane. Rather, they were more related to human factors and pilot training issues. It is important to add that the A-320 is incapable of stalling, a factor that may have prevented additional fatalities. A conventionally designed airplane would have stalled in both accidents and most likely cartwheeled at impact, causing many more fatalities.

The most recent accident at Strasbourg is under investigation by the French authorities and a report is expected to be published by the end of May. The investigation determined that during the approach to landing the flightcrew commanded a high rate of descent when they departed the initial approach point. They may have mistakenly selected a rate of descent rather than the intended angle of descent. The French DGAC ordered Airbus to immediately inform operators of the risk of confusion between the "vertical speed" and "flight path modes." This action was accomplished within 30 days of the accident. Provisions to redesign and recertify the system are still under study and will be addressed in the final report. In addition, Airbus airplanes operated outside France are protected by an additional "Ground Proximity Warning System," recently mandated in France.

During the course of these investigations, the Safety Board staff continually kept the U.S. operators of the A-320 fully ap-

prised of the facts and findings, so that they could ensure that their procedures and training are adequate.

SENATOR LAUTENBERG: The new generation of commercial aircraft -- the Airbus A320, Boeing 747-400, and Douglas MD-11 -- employ extremely sophisticated control systems. In the Safety Board's opinion, does FAA have the technical competence to certify these systems? If not, what do you believe can be done to improve FAA's technical competency in the certification field?

ANSWER: We believe that the safety record of the newer modern airplane indicates that the design engineers and the Federal Aviation Administration (FAA) certification staff are doing a good job. In 1980, following the DC 10 accident that occurred in Chicago in May 1979, the National Research Council convened a committee of government and industry experts to assess the adequacy of the FAA certification process. The committee concluded that the technical competence and state of the art currency originated within the aviation industry and that the FAA generally relied on industry to catch up. This seems to work, however, because the FAA certification staff became involved with the manufacturer during the early stages of a new airplane design and the systematic education and briefing by company engineers provide the FAA staff with the background needed to assure that the airplane meets the regulatory standards. The Safety Board staff believes that the FAA certification staff are technically competent and dedicated to their mission.

At the same time, the Safety Board recognizes that most of the FAA regulations concerning aircraft certification were written during an era when airplane designs were more basic and do not address some of the technological advances that come along with each new generation of airplanes. Thus the FAA has to issue special conditions to address these new features leaving open the possibility that something will be overlooked. Fortunately, if an airplane is introduced into line operations with undetected problems, they usually are identified through the airplane's service history and corrected before they cause accidents.

One area of concern to the Safety Board is the emphasis placed on human factors during the certification process. While the FAA several years ago increased its attention to human factors by staff increases and the development of a national human factors plan, the Board is not aware of any tangible application of the plan to the certification process, specification, or the interaction of human performance with new technology.

SENATOR LAUTENBERG: As you know, FAA depends heavily on designated engineering representatives employed by manufacturers to certify new aircraft designs. In your opinion, is there a point where FAA can delegate too many certification duties, resulting in a lack of understanding on FAA's part of critical systems? Does the Board believe that FAA currently delegates too many critical tests and analyses to these designees?

ANSWER: The Safety Board has not found that Federal Aviation Administration (FAA) delegation of certification duties to designated engineering representatives (DERs) has resulted in inadequate FAA knowledge of critical systems. The FAA's DER program

allows the FAA to make effective use of manufacturer engineering talent at little or no cost to the taxpayer. The Safety Board often works with the DERs during our major air carrier accident investigations, and we have found them to be honest and conscientious. Our experience is that DERs take their responsibilities seriously and they provide an invaluable resource to the FAA.

For example, we were very favorably impressed with the powerplant/thrust reverser system DER at Boeing during our investigation of the Lauda Airlines Boeing 767 accident in Thailand in 1991. He provided invaluable assistance in our investigation of the accident, with his in-depth knowledge of the system design and knowledge of system service problems. His participation facilitated our identification of the most likely accident problem and played a significant role in the problem resolution.

The delegation of critical testing and analysis to DERs provides the airplane manufacturer the flexibility to meet rigorous development schedules. Further, the use of DERs provides the FAA with individuals trained to a greater depth than would be possible through conventional FAA training. While it would be desirable to have highly knowledgeable and skilled FAA engineering staff involved at all levels of the certification process, the DER program, if appropriately monitored, extends the FAA's engineering certification capability.

Effective monitoring of the DER program by FAA Aircraft Certification Office (ACO) staff is essential to the success of this program. With several new technology aircraft currently involved in the certification process, this would seem like the appropriate time to evaluate the adequacy of the FAA's staffing in their ACOs to assure adequate oversight the DER program in the future.

SENATOR LAUTENBERG: In October 1992, a Boeing 747-200 cargo aircraft crashed in Amsterdam resulting in at least 55 fatalities. In 1991, a similar crash occurred with a Boeing 747-200 cargo aircraft in China. Press reports indicate that (1) during takeoff under full power, the right inboard engine fell off and struck the right outboard engine, and (2) FAA did not test the 747-200 design for this possibility as part of its certification activities. If these reports are accurate, was FAA remiss in overlooking this when certifying the aircraft?

ANSWER: To our knowledge, the pylon to the wing attachments for the Boeing 747 were designed as a fail-safe structure. Four fuse pins support the pylon. In the event of a failure of a fuse pin, the remaining pins are supposed to support the structure until the failed pin is detected. The purpose of the fuse pins is to permit the pylons to separate from the wing during loads imposed in a crash landing so that the wing structure and integral fuel tanks remain intact. There apparently was no consideration given to an inflight separation of an engine or trajectory that the engine would follow as a result of thrust loads and gyroscopic loads at the time of separation. Had the Federal Aviation Administration (FAA) considered the failure of the pylon attachments as a possibility during flight, the propensity for the right inboard engine to swing outboard might have been identified. However, it is not likely that

the FAA would have regarded the separation of the pylon-to-wing structure as an acceptable failure mode as a certification basis.

SENATOR LAUTENBERG: In May 1991, due to an in-flight thrust reverser deployment, a Lauda Air Boeing 767-300 crashed in Thailand resulting in 223 fatalities. Neither Boeing nor FAA ever analyzed the system during the certification process for such a deployment at full power. In NTSB's opinion, should FAA have identified this possibility during the certification process?

ANSWER: The thrust reverse system of the Boeing 767, like most other large transport airplanes, is intended for ground use only. The certification process included testing for inadvertent deployment in the air. Flight tests were conducted in what was thought to be the most critical phase of flight, i.e., the approach and landing. Supporting data for other phases of flight were derived by interpolating related flight test data. In retrospect, it is now known that there was a time required for an engine to slow to idle thrust while in reverse. During this time, a loss of lift on the affected wing, and resultant severe roll and yaw will be present. Flight control effectiveness is not sufficient to counter the roll and yaw which results in the loss of airplane attitude control. The FAA's certification process and the manufacturer's airplane performance predications were proven to be deficient by the accident involving the Lauda Air Boeing 767. However, it is not the Safety Board's position that the certification process is flawed or that the certification process should have identified this possibility. Regrettably, the certification process and associated flight testing did not consider and verify the effects of all the failure modes at all flight conditions.

SENATOR LAUTENBERG: In February 1989, A Boeing 747-100 cargo door blew open over Honolulu resulting in nine fatalities. The Safety Board's accident report recommended that FAA's certification staff receive training on the interaction of aircraft designs and human performance. Has FAA adequately responded to this recommendation? How many of FAA's certification staff have received such training?

ANSWER: We believe the FAA has adequately responded to this recommendation. They developed a prototype course for the certification staff and scheduled four sessions of 30 students per session, in fiscal year 1990. However, the exact number who actually attended the course was not immediately available.

SENATOR LAUTENBERG: In March 1987, a Spanish CASA C-212 aircraft crashed in Detroit resulting in nine fatalities. The Safety Board's accident report criticized FAA's oversight of its bilateral airworthiness program with foreign certification authorities. FAA responded that it was conducting a full review of its bilateral program and would forward the final report to the Board. Did FAA ever issue the report? What did it find? Are you satisfied with FAA's actions in this area?

ANSWER: In March 1988 the FAA published its report "Review of the Construcciones Aeronauticas S.A. CASA-212 Certification Program and the U.S. Import Type Certification Process." In September 1989, the FAA provided a copy to the Safety Board in response to the Board's safety recommendation A-88-100. The report recognized that

"the import type certification of the CASA-212 could have been done better" and "the follow-on certification issues could have been performed more efficiently and effectively." The reasons listed for the poor performance were: (1) a lack of continuity of staffing and resultant loss of "corporate memory," (2) a lack of sufficient management control mechanisms, and (3) ineffective communication. Seventeen safety recommendations were issued for policy and procedural changes intended to improve the import type certification process. The FAA provided the Safety Board with a copy of its action plan for implementing those recommendations. On that basis, the Board classified safety recommendation A-88-100 as "Closed--Acceptable Action."

Mountain Airport Safety

SENATOR LAUTENBERG: FAA's Airman's Information Manual states that flying in mountainous terrain presents a much higher risk than other general aviation operations. Nevertheless, FAA has no regulations aimed at reducing the risks of mountain flying for general aviation pilots.

On the basis of the Safety Board's investigations of general aviation accidents, do you agree that mountain flying presents a higher risk than other types of general aviation operations? If so, what steps can be taken to minimize this risk? Have you made any recommendations to FAA in this area?

ANSWER: To our knowledge, the Federal Aviation Administration (FAA) does not provide flying time estimates for mountain flying activity so there is no statistical evidence to support the statement that mountain flying poses a higher risk. However, we continue to investigate accidents with causes that are unique to mountain flying which leads us to believe that it does, in fact, pose a special hazard. While we have not conducted any studies in this area, our staff has been sensitive to the situation for several years and it appears the mitigation of the hazard lies in educating pilots through FAA and civilian safety publications and forums.

The Safety Board is aware that the Government Accounting Office currently has a study underway concerning flying in mountainous terrain.

The Federal Aviation Administration should continue providing pilots with additional information and educational materials covering flying in mountainous areas through their accident prevention program meetings and publications.

SENATOR LAUTENBERG: Over the last few years, the general aviation accident rate has been declining. Has the accident rate for general aviation operations in mountainous areas been declining as well? If not, what can FAA do, in your opinion, to help prevent such accidents?

ANSWER: The computerized aviation accident data does not allow a single question inquiry when trying to address mountain flying. A variety of inquiries into the accident data, such as high density altitudes at airports, in-flight collision with terrain and airports with a high elevation, must be examined to arrive at a general indication of the accident data trend. This inquiry indicated a

general downward trend similar to the overall general aviation accident trend.

Mountain wave, updrafts and downdrafts, isolated canyon fog, blind canyons and effects of density altitude are just a few of the hazards associated with mountain flying. There should be continued education of the pilots on the hazards associated with mountain flying. There are a group of flying schools located in the southern Appalachian Mountain area that offer this type of training. An evaluation of the school curriculum and application of the more recognized techniques could be publicized in an Advisory Circular and/or through safety meetings.

Aircraft Leasing

SENATOR LAUTENBERG: Airlines are increasingly financing their fleets through leasing arrangements rather than directly purchasing aircraft. Industry sources estimate that nearly 75 percent of the world's fleet will be leased by the year 2000.

Does the increasing number of aircraft transfers as a result of leasing have safety implications in terms of deferred maintenance and accurate record keeping?

ANSWER: The Safety Board has not noted any reduction in the safety of airline operations or an increase in maintenance-related problems as a result of the increasing number of leased airplanes. The FAA airworthiness standards are applicable to all U.S. registered airplanes no matter whether or not the airplane is leased by the operator. Therefore, the Safety Board would not anticipate an increase in maintenance related problems. It has been noted that often the lessor will require more stringent maintenance schedules and recordkeeping than the FAA in order to protect the value of its investment. The Safety Board has investigated several accidents where the lessor had installed quick access maintenance recorders to keep accurate accounting of flight hours, the number of takeoff and landings, and various engine and airplane performance parameters. These recorders, which are not required by the FAA, are a valuable asset for monitoring the condition of the airplane and as a backup to the flight data recorder in the event of an accident.

Additionally, ICAO has taken steps to ensure adequate international standards in connection with leasing arrangements. In general, the State of the Operator/Registry is responsible for maintenance of the continuing airworthiness of a leased aircraft under ICAO guidance, in addition to the provisions levied on the operators by the lessors.

SENATOR LAUTENBERG: In July 1992, a TWA L-1011 aircraft crashed during takeoff at JFK airport in New York. The L-1011 was a 20-year-old leased aircraft. Did the Safety Board's investigation identify leasing as a potential factor in this accident? Have there been any accidents in the last 5 years or so in which the Board has identified leasing as a potential factor?

ANSWER: The investigation of this accident did not identify leasing of the airplane as a factor in the accident. The Safety Board determined that the probable causes of the accident were design deficiencies in the stall warning system that permitted a

defect to go undetected, the failure of TWA's maintenance program to correct a repetitive malfunction of the stall warning system, and inadequate crew coordination between the captain and the first officer that resulted in their inappropriate response to a false stall warning.

The Safety Board has investigated numerous incidents and accidents involving leased airplanes and on occasion has found maintenance-related problems. However, the Safety Board has not identified the fact that an airplane was leased as being a contributing factor in an accident or incident or that the maintenance of an airplane had been reduced because the airplane was leased.

HIGHWAY SAFETY ISSUES

Improvements in Commercial Vehicle Safety

SENATOR LAUTENBERG: In 1990, the Safety Board completed a study of 182 commercial vehicle accidents that were fatal to the truck driver. In determining the probable cause, fatigue was cited in 31 percent of the drivers, followed by alcohol and other drug impairment in 29 percent of the drivers. In addition, the driver's medical condition caused or contributed to 10 percent of the accidents. The Board also cited a high frequency of occupant protection issues and deficiencies in management oversight of vehicles and drivers. As a result of the study, the Board issued 46 safety recommendations for improvements in commercial vehicle safety at all levels of government and industry.

What is the status of action on the recommendations resulting from the study?

ANSWER: Of the 40 safety recommendations issued as a result of the Safety Board's 1990 truck study, six recommendations are classified as "Open--Unacceptable Action." The remaining 34 recommendations are classified as "Open--Acceptable Action" or "Open--Acceptable Alternate Action." The six recommendations classified as "Open--Unacceptable Action" were issued to the Federal Highway Administration (FHWA) and asked FHWA to:

- establish a demonstration project to deter use of alcohol and other drugs by drivers of medium and heavy trucks;
- establish and fund a program to train instructors to provide drug recognition expert training to federal agency inspectors/investigators, police and other with oversight responsibility;
- require automated/tamper-proof on-board recording devices such as tachographs or computerized logs to identify drivers who exceed Hours of Service regulations;
- investigate the interaction of fatigue and drug abuse as part of the FHWA on-going study of

fatigue and loss of alertness among commercial truck operators;

- establish driver hours of service violations, logbook irregularities, or the presence of multiple logbooks as a reasonable cause requiring a drug test of the driver; and
- establish the violation of the commercial vehicle operation alcohol offense as a reasonable cause requiring a drug test of the driver.

We await responses to follow-up letters we sent to the American Trucking Association (ATA) regarding the safety recommendations asking ATA to actively promote and encourage its members to use or support preemployment tests for alcohol and other drugs, driver violation history checks, and alcohol or other drug abuse treatment history checks.

The Safety Board is continuing to work with the States, the Commonwealth of Puerto Rico, the Virgin Islands, and the Territories, on the enactment of legislation or issuance of regulations to require the collection of blood samples for alcohol and other drug toxicological testing from all vehicle operators involved in fatal truck accidents.

GAS AND PIPELINE ISSUES

Excess Flow Valves

SENATOR LAUTENBERG: For the last 10 years, the Safety Board has recommended that the DOT require excess flow valves on newly installed or renewed single family high pressure gas service lines to prevent or minimize the consequences of gas leaks. The Pipeline Safety Act of 1992 requires the Secretary to issue regulations prescribing the circumstances, if any, under which operators of natural gas distribution systems must install excess flow valves.

Do you see any problems with DOT's implementation of this requirement and/or with the gas distribution companies' compliance with the requirement and resulting regulations?

ANSWER: The Safety Board believes that Congress has provided adequate flexibility for the Research and Special Programs Administration (RSPA) to develop cost-beneficial requirements for the placement of excess flow valves. The Safety Board anticipates minimal change to the pipeline industry's construction process as a result of the rules that RSPA is developing. Many companies are now using these valves and have not expressed problems with their use.

SENATOR LAUTENBERG: Since this item has been on the Board's "Most Wanted Transportation Safety Improvements" list, will you continue to monitor DOT's and the gas industry's efforts to implement and carry out this requirement, particularly since the Secretary has the flexibility to determine that there are no circumstances under which operators must install excess flow valves?

ANSWER: The Safety Board will continue to monitor the Department of Transportation's and the gas industry's efforts to implement and carry out the excess flow valve requirements. Currently, the Safety Board is working with the Gas Piping Standard Committee to publish guidance applicable to the industry and the use of excess flow valves. The Committee is currently developing information to help operators in selecting and using excess flow valves appropriate for their operating conditions.

SENATOR LAUTENBERG: What is the cost of an excess flow valve installed on a service line?

ANSWER: When an excess flow valve is included during initial installation or as part of a renewal of a pipeline, the Safety Board has seen costs of \$10 to \$25 per installation. The Safety Board expects with mass installations of excess flow valves that the cost will be reduced to an average cost of about \$15 per installation.

Yard Lines

SENATOR LAUTENBERG: Customer-owned pipelines that carry natural gas from the outlet side of a curb valve -- usually at the property line -- to the inlet side of the customer's residence or farm are called yard lines (or, in rural areas, farm taps). Numerous yard line accidents causing fatalities and property damage have occurred. For example, in a 7-month period beginning September 16, 1988, the Safety Board investigated five yard line accidents in the Kansas City-Topeka area. The accidents killed 4 persons, injured 12, and destroyed several homes and automobiles. Among the reasons for yard line accidents are:

- questionable design and construction methods used by local contractors (plumbers),
- improper maintenance of lines against corrosion damage, and
- lack of gas leak surveys by the yard line owners.

In addition, a majority of states do not have jurisdiction over yard lines. For one state, a state pipeline official has estimated that 40 to 50 percent of the 2,200 farm taps do not meet pipeline safety standards.

How many yard line accidents/incidents has the Board investigated in the last 5 years? What causes has the Board cited for the accidents/incidents?

ANSWER: Since the Kansas Power and Light Company accidents, the Safety Board has not investigated a yard line accident.

SENATOR LAUTENBERG: What trends, if any, has the Board noticed in terms of yard line fatalities, injuries, and property damage?

ANSWER: The Safety Board has not observed any trends that involved yard lines or customer owned portions of service lines because there is no requirement for accidents of this type to be reported to the Office of Pipeline Safety. Thus, data is not available.

SENATOR LAUTENBERG: What recommendations have you made regarding yard lines?

ANSWER: As part of the Pipeline Accident Report -- Kansas Power and Light Company Natural Gas Pipeline Accidents September 16, 1988 to March 29, 1989 the Safety Board issued the following recommendations regarding yard lines:

-- to the Kansas Power and Light Company:

Extend, as applicable, the current programs for leak surveys, renewal of customer-owned portions of service lines and yard lines, and replacement of cast-iron pipe to its gas systems in the State of Oklahoma. (P-90-08)

-- to the Research and Special Programs Administration:

Amend 49 CFR 192 to make buried lines used to transport natural gas from the outlet of a meter to a customer's building fuel lines subject to the Federal minimum pipeline safety requirements. (P-90-19)

Require, by a certain time, that existing buried, unprotected gas piping be protected against damage from corrosion or be replaced with piping resistant to corrosion damage. (P-90-20)

SENATOR LAUTENBERG: In your opinion, are federal and/or state regulations needed governing the design, construction, maintenance, inspection, and safety of yard lines.

ANSWER: In the Safety Board's opinion, yard lines and customer-owned portions of service lines should be subject to 49 CFR Part 192 - Minimum Standards for Natural Gas Pipelines. This was the intent of the Safety Board recommendation P-90-19 which stated:

Amend 49 CFR 192 to make buried lines used to transport natural gas from the outlet of a meter to a customer's building fuel lines subject to the Federal minimum pipeline safety requirements.

Public Law 102-508 Section 115 requires the Secretary of Transportation to conduct a review of customer-owned natural gas service lines and to make recommendations for legislative or regulatory action. The Safety Board believes that this Congressional requirement will encourage the Research and Special Programs Administration to implement recommendation P-90-19.

Instrumented Internal Pipeline Inspection Devices

SENATOR LAUTENBERG: In September 1992, GAO reported that the safety of the nation's aging natural gas pipelines could be improved by greater use of instrumented internal inspection devices, called "smart pigs." According to the report, Natural Gas Pipelines: Greater Use of Instrumented Inspection Technology Can Improve Safety (GAO/RCED-92-237), a Safety Board official said that federal regulations on smart pig inspection were needed and that, if developed and used by pipeline operators, such regulations would reduce the number of pipeline incidents.

In the Board's experience, how do hazardous liquid pipelines compare with natural gas pipelines in terms of susceptibility to ruptures and leakages and in terms of number of incidents and resulting fatalities, injuries, and property damage?

ANSWER: RSPA data from 1991, the last full year for which data was available, indicates the following number of incidents:

	<u>natural</u> <u>gas transmission</u>	<u>hazardous liquids</u>
incidents/failures	71	210
fatalities	0	0
injuries	12	8

The three leading causes for each type of transmission are (these are the only comparable categories for which data is available):

	<u>natural</u> <u>gas transmission</u>	<u>hazardous liquids</u>
Outside damage	37	46
External corrosion	6	43
Internal corrosion	10	19

The data would tend to indicate that hazardous liquids have more incidents/failures than natural gas transmission lines, but this data should be normalized against the miles of each type of line, or the amount of material transported. RSPA could provide calculations for that type of analysis.

SENATOR LAUTENBERG: In your opinion, would the safety of hazardous liquid pipelines also benefit from the increased use of instrumented internal inspection devices?

ANSWER: Certainly hazardous liquid pipelines could benefit from increased use of instrumented internal inspection devices. These devices can be used in pipes regardless of the types of service, and are especially useful for hazardous liquids.

RAIL SAFETY ISSUES

Track Safety Standards

SENATOR LAUTENBERG: In 1990, the Safety Board recommended that the Federal Railroad Administration (FRA) review its track safety standards, including procedures for installing and maintaining continuous welded rail. A requirement for such a study was included in the 1992 Rail Safety Enforcement and Review Act. FRA is currently holding workshops to carry out the requirement. Safety Board representatives have been involved in this process, observing and participating in the workshops.

What is your view of the progress being made?

ANSWER: During the workshops, it was confirmed that the Association of American Railroads is continuing research at its Pueblo, Colorado test facility to develop a means to determine

methods to evaluate the lateral resistance of continuous welded rail. Also, private industry rail testing firms, are working to develop testing devices to measure the longitudinal stress in continuous welded rail.

The Safety Board is satisfied that progress is being made to address the in-situ stresses of continuous welded rail and the development of minimum Federal standards.

SENATOR LAUTENBERG: Do the issues being addressed in the workshops adequately address the Board's concerns stated in previous recommendations and testimony?

ANSWER: The Safety Board's staff believes that the issues being addressed in the workshops are a positive step toward updating the current Federal Railroad Administration track safety standards, and do address Board safety recommendations.

SENATOR LAUTENBERG: Has the Board completed its investigation of the Camden, South Carolina, Amtrak derailment?: What has the Safety Board concluded in this investigation? What recommendations are being made to FRA concerning its enforcement of the track safety standards?

ANSWER: At this time, the Camden, South Carolina investigation is about to be completed and the final report will be presented to the Board in the next few months. We cannot comment on any conclusions or recommendations the Board may make until the final report is adopted.

TRANSPORTATION SAFETY STATISTICS

SENATOR LAUTENBERG: The Intermodal Surface Transportation Efficiency Act of 1991 established a Bureau of Transportation Statistics and authorized an advisory council on transportation statistics.

Does the Safety Board have an interest, or has it had a role, in the establishment of the Bureau of Transportation Statistics? Will or can the Bureau serve your needs for safety-related data?

ANSWER: The Safety Board has been represented on the Federal Interagency Transportation Statistics Committee since that body was established two years ago. This committee has been kept informed of progress in the development of the Bureau of Transportation Statistics and has been active in its discussions of appropriate statistical assessments of transportation system performance and capacity.

The Safety Board has a particular interest in measures of the rates of use and exposure to risk in all modes of transportation. We depend on these exposure measures to develop estimates of accident rates (e.g., commercial air transport accidents per 100,000 departures flown, etc.) Current exposure and rates of use data are extremely limited in all of the transportation modes, and we look forward to improvements as a result of the efforts of the Bureau of Transportation Statistics. We are optimistic that the Bureau's development, collection and dissemination of data on the use and capacity of the various transportation systems will benefit the

Board's review and analysis of accident trends and patterns and its conduct of safety studies.

SENATOR LAUTENBERG: Has DOT consulted or coordinated with the Safety Board in planning for the new Bureau and in determining the types of statistics that will be collected, compiled, analyzed, and published? What types of statistics would be of most use to you?

ANSWER: The Safety Board has been advised of and consulted in the planning of the new Bureau and its functions, principally through membership on the Federal Interagency Transportation Statistics Committee. The measures and statistics of greatest interest to the Board are assessments of rates of use and capacity of each transportation system. We depend upon such measures to develop indices of exposure to risk in each transportation mode. The exposure measures, in turn, allow us to develop estimates of accident rates (e.g., commercial air transport accidents per 100,000 departures flown, etc.) Current exposure data are very limited in all transportation modes, and we look forward to improvements as a result of the efforts of the Bureau.

SENATOR LAUTENBERG: Could any of the Safety Board's current data collection and analysis efforts be assumed by the new Bureau?

ANSWER: The Safety Board's data collection activities are restricted mainly to accident data collection based on accident investigation activities and thus do not overlap with the data collection responsibilities of the Bureau of Transportation Statistics. Similarly, the Board's data analysis efforts (associated with safety studies, individual accident investigations and statistical reviews of accidents) are focused on mechanisms of accident causation, rather than the overall functioning of transportation systems. We view the missions of the Safety Board and the Bureau of Transportation Statistics to be very much complementary and not duplicative.

STAFFING PATTERN

SENATOR LAUTENBERG: Your staffing pattern over the past few years has remained relatively constant. Your personnel are assigned to one of six distinct categories, as follows:

	<u>Number of staff</u>	<u>Percent</u>	<u>Budget Auth</u>
Policy and Direction	44	12	\$ 4,800,000
Aviation Safety	131	36	13,290,000
Surface Transportation Safety	94	26	9,200,000
Research and Engineering	49	14	4,565,000
Administration	29	8	2,580,000
Administrative Law Judges	13	4	1,565,000
<u>Total</u>	<u>360</u>	<u>100</u>	<u>\$36,000,000</u>

The above staffing pattern shows to some degree how NTSB prioritizes its work. Most of its staff resources are dedicated to aviation safety (36 percent) and the second most to surface transportation safety (26 percent).

In view of the "aviation safety" category consuming over one-third of your total staff resources, could you provide some back-

ground describing how this staffing allocation was established and how you justify the priorities we see in the table?

ANSWER: Unlike in the surface transportation modes in which the Safety Board's investigation activities are limited by some definitive selective criteria, the Board must, by law, investigate and determine the probable cause for all U.S. civil aviation accidents. This means that our staff must determine the facts and circumstances for over 2000 accidents annually. Although about 95 percent of these involve general aviation accidents, approximately 25 percent of these investigations require the travel and on-scene activities of one or more of our staff. On those accidents that involve air carrier, commuter, or complex corporate type airplanes, our investigation team can consist of up to 12 persons, each having very specialized expertise in disciplines such as operations, engineering, air traffic control, meteorology, human factors, cabin safety, airports, and emergency response. Thus, we must maintain a cadre of persons with such backgrounds.

Furthermore, unlike the surface modes, the aviation accident investigations and safety oversight requirements are not limited to the U.S. By both international agreement and necessity in so far that U.S.-manufactured products and air carriers operate worldwide and that foreign products operate in the U.S., our aviation staff becomes heavily involved in foreign aviation activities. Our current staffing allocation and budget resources reflect the needs of our safety mandate.

SENATOR LAUTENBERG: Why do you see aviation as needing oversight? Is it because of the difficulty in investigating an aviation accident, the importance of safety to air commerce, or some other reason?

ANSWER: The occurrence of a major accident involving a large air carrier aircraft has the potential for catastrophic in terms of both lives and economics. While no one questions the excellent/overall safety record of air commerce, every major accident brings worldwide media attention and arouses public concern. The continued growth of commercial aviation and the continual introduction of new technology requires that the safety of the industry receive constant attention. If we look back at some of the accidents involving hazards such as windshear, midair collision, controlled flight into terrain, runway incursions and mechanical failures on specific aircraft, and review the lessons learned and resulting corrective actions, we can see the benefits of the oversight in these areas.

SENATOR LAUTENBERG: In the various subsets of surface transportation safety, such as rail, truck, etc., what are the Safety Board's criteria for investigating accidents or incidents?

ANSWER: Under its accident selection criteria, the Board's investigative response will depend primarily on the following factors: 1) the need for independent investigative oversight of certain specified areas to ensure public confidence in the transportation system; 2) the need to concentrate attention and resources on the most significant and life-threatening safety issues; and 3) the need to maintain an adequate data base on which trends can be identified and projected.

Railroad

1. Oversight/public confidence:
 - a. Commercial passenger services, including rail rapid transit accidents, which result in:
 - a passenger fatality or serious injury to two or more persons;
 - an onboard fire with evacuation of passengers;
 - property damage of \$50,000 or more; or
 - collisions with on-track equipment.
 - b. All accidents which involve an employee fatality or serious injury to two or more persons or result in damage of \$500,000 or more to railroad and non-railroad property.
2. Selected emphasis areas:
 - a. Advanced Train Control Systems.
 - b. Train Air Brake Testing/Defects/Inspection.
 - c. Rail Rapid Transit Systems.
 - d. Locomotive Crashworthiness.
 - e. Continuous Welded Rail installation/inspection/performance.
 - f. Fatigue/Work/Rest Cycle of employees in safety sensitive positions.
 - g. Rail/Highway Grade Crossing Active/Passive Warning systems.
 - h. Commuter Cab Control Car Crashworthiness.

Highway

1. Oversight/public confidence:
 - a. Highway bridge safety (structurally deficient and functionally obsolete bridges).
 - b. Motor carrier oversight by Federal and State agencies.
 - c. Transportation of school children.
 - d. Intercity bus safety.
2. Selected emphasis areas:
 - a. Adequacy of passive restraints.
 - b. Air brake performance of heavy trucks
 - c. Training and licensing of intercity bus drivers.
 - d. Highway/Railroad grade crossing accidents involving commercial, school, or public transportation vehicles.
 - e. Limited visibility accidents.
 - f. Driver fatigue in commercial vehicle accidents.
 - g. Elderly driver safety.

Marine

1. Oversight/public confidence:
 - a. Loss of six or more lives.
 - b. Loss of a self-propelled vessel of over 100 gross tons or damage to any vessel exceeding \$500,000.

- c. Serious hazardous materials threat to life, property, and environment.
- s. Coast Guard safety functions (e.g., Vessel Traffic Services, search and rescue operations, vessel inspections, aid to navigation positioning/lighting, etc.)
- e. A public and non-public vessel collision or other accident with one or more fatalities or \$75,000 or more in property damage.

2. Selected emphasis areas:

- a. Large passenger vessels including ocean cruise ships and excursion vessels, ferries, and harbor excursion boats.
- b. Small passenger vessels carrying more than six passengers.
- c. Liftboats.
- d. Tankships and tank barges.
- e. Fatigue and hours of service on all vessels.
- f. Bridge Resource Management.
- g. Ship maneuvering capabilities in restricted waters.
- h. Collisions and groundings involving oceangoing vessels.

Pipeline

1. Oversight/public confidence:

- a. One or more fatalities.
- b. Damage exceeding \$500,000.
- c. Extensive release of highly volatile liquids.

2. Selected emphasis areas:

- a. Accidents where consequences could have been reduced by use of an excess flow valve.
- b. Failure of aging pipe systems.
- c. Accidents involving human performance issues.
- d. Accidents involving recognition or response delays.
- e. Major environmental damages resulting from product release.

Hazardous Materials

1. Oversight/public confidence:

- a. Fatalities or serious injuries by the release of hazardous materials.
- b. Major evacuations of the public or major disruptions to a community's normal functioning due to the threats caused by a release of hazardous materials.

2. Selected emphasis areas:

- a. Non-collision container failures.
- b. Failure of containers under accident conditions in which the containers reasonably should have been expected to survive.
- c. Cargo transfer operations.
- d. Unusual or unexpected behavior of hazardous materials.
- e. Mis-identified or non-identified hazardous materials.
- f. Emergency response difficulties because of the unexpected

behavior of hazardous materials involved in an accident or the lack of adequate information about cargo or containers involved in an accident.

SENATOR LAUTENBERG: How many safety inspectors do you have assigned to each of these subset areas of surface transportation. Is this staffing sufficient, considering the number of accidents that occur in these areas?

ANSWER: The numbers of accident investigators assigned to the modal disciplines is as follows:

Railroad	8 investigators for major accidents 9 investigators for regional accidents
Highway	9 investigators for major accidents 14 investigators for regional accidents
Marine	11 investigators
Pipeline	3 investigators

The above staffing is sufficient to investigate our current surface accident workload, but additional resources would expand our investigative capabilities.

SENATOR LAUTENBERG: Please provide us with a breakdown of the activities that the staff assigned to aviation safety engage in over the course of a year.

ANSWER: The primary activity of our aviation staff is the investigation of accidents and the determination of cause. The most important product of this effort is the preparation and issuance of safety recommendations to correct the deficiencies that are identified in the aircraft, the operation and maintenance of the aircraft, or the National Airspace System. Most of these recommendations are sent to the FAA, although some go to air carriers, manufacturers, and other organizations. We also conduct special studies and special investigations of specific safety issues. For example, we have conducted studies on the air traffic control system, runway incursions, rejected takeoffs, winter operations, pilot alcohol use, and so on. Currently we are looking into midair collisions near uncontrolled airports, the oversight of foreign carriers operating into the U.S., and the hazards of mountain flying. Depending on the preliminary findings we may prepare a report on one or more of these issues.

In addition, we maintain the official U.S. aviation accident database and respond to public inquiries. We also review aviation-related rulemaking and comment where appropriate. A significant portion of our resources is also devoted to the support of international aviation matters.

ALCOHOL TESTING OF TRANSPORTATION WORKERS

SENATOR LAUTENBERG: In December 1992, DOT issued proposed regulations for alcohol testing of safety-sensitive workers in the transportation industry. The types of tests required would include pre-employment (or pre-duty), reasonable suspicion, post accident,

return-to-duty, follow-up after rehabilitation, and random. Concerns have been expressed about random testing and about the uniformity of testing requirements across all modes of transportation.

Has the Safety Board provided, or does it intend to provide, comments on the proposed regulations?

ANSWER: The Safety Board provided comments on Department of Transportation proposed rules on April 14, 1993. A copy of our correspondence is below.

[CLERK'S NOTE.--The Safety Board's comments appear in an answer to one of Senator Lautenberg's previous questions.]

SENATOR LAUTENBERG: In the past, the Board has expressed its support for random testing of transportation employees? Has there been any change in NTSB's position?

ANSWER: The Board's position regarding random testing has not changed.

SENATOR LAUTENBERG: One matter on which DOT has specifically requested comment is what level of annual random testing -- from 10 to 50 percent -- is appropriate. What is your view on this matter?

ANSWER: In the Safety Board's April 14, 1993, comments to the Department of Transportation, we stated:

"The Safety Board believes the testing rate should be set at the lowest rate that will provide deterrence. Any change in the current testing rate should be based on credible, peer-reviewed research in the transportation industry or in comparable workplace settings. Pending evaluation of such research, we believe the current random testing rate should not be changed."

SENATOR LAUTENBERG: Do you have a stated position on uniform testing across all modes of transportation? What is it? Have your investigations shown differences among the modes of transportation in regard to alcohol being a contributing or causal factor in accidents?

ANSWER: The Safety Board's position on uniform testing is contained in safety recommendations I-89-4 through -12. We believe that postaccident and postincident testing are qualitatively different from more routine types of testing and should be separated from those types. Further, postaccident/postincident testing should not be limited to the drugs and cutoff concentrations in the Department of Health and Human Services guidelines. The Safety Board believes that the Department of Transportation and its operating administrations should adopt uniform postaccident/postincident testing for alcohol and other drugs.

Safety Board investigations have shown a large variation in alcohol positive tests among the modes of transportation. For example, no Part 121 pilot has tested positive for alcohol since

1964. From 1983 through 1988, no Part 135 scheduled pilot and 1.8 percent of Part 135 scheduled pilots tested positive for alcohol. About 6 percent of general aviation pilots tested positive during this period. In a Safety Board study, 29 percent of fatally injured truck drivers tested positive for alcohol or other drugs. In 1991, 48 percent of the highway traffic fatalities were alcohol-related. Further, up to 70 percent of boating fatalities may be alcohol-related. While postaccident drug testing in aviation and commercial operations is improving, we cannot make a comparison with drug testing in highway traffic crashes.

A copy of I-89-4 through -12 is below for your information.

LETTER FROM JAMES L. KOLSTAD, ACTING CHAIRMAN NATIONAL TRANSPORTATION SAFETY BOARD

Date: December 5, 1989

In reply to: I-89-4 through -12

Honorable Samuel K. Skinner
Secretary
U.S. Department of Transportation
400 Seventh Street, S.W.
Washington D.C. 20590

Investigations of transportation accidents conducted by the National Transportation Safety Board provide concern about the prevalence of drug and alcohol use and its effect on the safety of the traveling public. Substance abuse has been particularly evident in rail and highway accidents and, to a lesser extent, has also been evident in aviation and marine accidents. The Safety Board believes that the problems of drug and alcohol use in transportation should receive the highest level of attention by the U.S. Department of Transportation (DOT), specifically in regard to DOT's drug and alcohol testing regulations. The Safety Board commends the efforts by DOT to develop regulations to eliminate drug and alcohol use in transportation.

The Safety Board does, however, take exception to the inconsistent approach taken by the DOT in the formulation of those regulations that pertain to the drug and alcohol testing of persons involved in accidents or incidents. Substantial differences exist among the postaccident/incident sampling and testing requirements for the transportation modes and between the drug testing policies for DOT employees in safety sensitive positions and private sector employees. Furthermore, the testing requirements of many pertinent regulations are not sufficient to permit the Safety Board or the modal agencies to identify the extent to which drug and alcohol abuse contributes to transportation accidents.

Under the Federal Aviation Administration's (FAA) regulations for postaccident/incident testing of aviation personnel, Safety Board investigators may not be able to determine whether surviving air carrier crewmembers or FAA air traffic controllers caused or contributed to an accident because of drug or alcohol impairment. The DOT regulations for postaccident testing incorporate the guidelines developed by the Department of Health and Human Services (DHHS). The Safety Board has several concerns regarding the incorporation of these guidelines in postaccident/incident testing regulations. First, the guidelines specify the collection of urine only. Second, the guidelines specify the analysis for only five drugs or drug classes. These five drugs do not include alcohol, the substance of most frequent abuse, prescription medications, and other illicit drugs. Third, the presence of drugs or alcohol (if tests were required) cannot be related to a

level of performance impairment without the analysis on a blood sample; such a test is not required. Fourth, the drug level in the urine may be below the measurement threshold cutoffs specified in the DHHS guidelines due to the high thresholds in these guidelines and due to delays in collection of urine following an accident. Even though drugs may have been present at a level sufficient to cause performance impairment when an accident occurred, the level could decline below the high measurement threshold cutoff by the time of sampling; the presence of a drug and its contribution to an accident would thus go undetected. Finally, the DHHS guidelines were never intended to be used for forensic purposes--that is, to determine the causal relationship of drugs (or alcohol) to a transportation accident--yet the guidelines are being made to serve that purpose by their incorporation in postaccident/incident testing regulations.

In contrast to FAA requirements, the Federal Railroad Administration (FRA) requires the collection of both blood and urine as soon as practical after an accident involving railroad employees. The investigations of railroad accidents have shown the benefits of the FRA regulations. The extent of substance use and abuse includes illicit drugs, prescription medications, and alcohol, all of which can cause sufficient performance impairment to produce a serious or catastrophic accident. The Safety Board has advocated adoption of common rules similar to those used by the FRA in the Board's comments on notices of proposed rulemaking for drug testing regulations by various DOT agencies, even though the Safety Board considers the drugs identified in the FRA program as being minimal requirements. The Safety Board's comments were unheeded.

Investigation of the grounding of the EXXON VALDEZ in Prince William Sound on March 24, 1989, disclosed that the captain of the vessel had alcohol in his blood and urine some 10 hours after the grounding. However, because of the delay in obtaining specimens, there is an increased uncertainty regarding his condition at the time of the accident. In addition, a U.S. Coast Guard Vessel Traffic Service (VTS) employee (a DOT civilian in a safety sensitive position) on duty at the time of the grounding had gone off duty before being asked to provide blood and urine specimens for drug and alcohol testing. His blood and urine specimens were positive for alcohol, which he claimed was due to drinking after going off duty. The DOT determined that the VTS employee was not sampled and tested according to the DOT employee testing procedures, which call for urine testing only and do not provide for alcohol analysis. In addition, a Coast Guard employee collected the specimen, which was not in accordance with policy. The DOT employee testing policy calls for a contractor to collect the specimen; because the contractor could not get to Alaska within a reasonable time, a second urine sample of the VTS employee was obtained about 90 hours after the qualifying accident. The DOT policy establishes a guideline of 32 hours in which to collect a specimen from an employee after an accident or incident has occurred; this length of time is unreasonable. Certainly 90 hours far exceeds any reasonable time period for collection of specimens.

The manner in which DOT regulations do not address alcohol are of concern to the Safety Board. In addition to the regulatory confusion regarding whether or not alcohol determinations are to be made and in what body fluid, a number of the modal agencies (FAA, FHWA, FRA, and the Coast Guard) within DOT have set a threshold limit for blood alcohol (0.04 percent and above is prohibited) within the regulations even though a test for alcohol may or may not be required. Other agencies (UMTA, and Research and Special Programs Administration) have not defined a limit. The Safety Board addressed the concern of what blood alcohol content (BAC) constitutes impairment in Safety Recommendation A-84-45 in 1984 to the Federal Aviation Administration when the FAA first used the 0.04-percent BAC cutoff. The Safety Board classified this recommendation as "Closed-Unacceptable Action" on September 16, 1985, when the FAA established the 0.04-percent BAC as the impairment level.

On December 10, 1987, the Safety Board wrote to Secretary Burnley, encouraging him to reconsider the Department's position on the BAC definition of "under the influence" and to implement rules that would penalize any BAC greater than zero. On February 3, 1988, Assistant Secretary Matthew V. Scozza responded to the Safety Board:

I agree that we should reevaluate our position on what, if any, blood alcohol level is acceptable for those commercial operators within our purview.

I have directed my staff to work with the modal administrations to develop a department wide definition of "under the influence." You may be assured that I place a high priority on this issue and we will move expeditiously.

The Safety Board has not heard further from the Secretary's office regarding this issue. On October 4, 1988, the Federal Highway Administration (FHWA) published its final rule on permissible blood alcohol levels for operators of commercial motor vehicles. Drivers having any positive alcohol concentration are subject to 24-hour out-of-service sanctions; however, 0.04 percent was again established as the level at or above which a person operating a commercial motor vehicle would be subject to commercial driver license disqualification. This level was established in spite of a National Academy of Science conclusion that at any BAC level above zero, the driving performance of most commercial drivers would be degraded sufficiently to increase the risk of a crash.

In addition to the FAA and FHWA, the FRA and the Coast Guard have previously adopted policies prohibiting the operation of vehicles at a BAC of 0.04 percent and above. Other agencies, such as the Research and Special Programs Administration and the Urban Mass Transportation Administration (UMTA), have no policy at all. Defining "under the influence" as having a BAC of 0.04 percent or greater leaves the impression among transportation workers and the public that drinking is allowable so long as the BAC tests below 0.04 percent. The Safety Board does not believe this is the message the DOT wishes to send. It should be absolutely clear that no alcohol is acceptable in commercial transportation because research has demonstrated that low blood alcohol levels can produce impairment.

The recent drug and alcohol regulations of the various DOT administrations treat Federal employees and employees in the private sector differently. According to Public Law 101-71 (101 Stat. 471, July 11, 1987), disclosure of toxicological results obtained on Federal employees pursuant to Executive Order 12564 (September 15, 1989) can be released only (1) to the employee's medical review official, (2) the administrator of any employee assistance program in which the employee is receiving counseling, or (3) to any supervisory or management official within the employee's agency having authority to take adverse personnel action against such employee, or (4) pursuant to the order of a court of competent jurisdiction where required by the United States Government to defend against any challenge against any adverse action. Release of test results to anyone else requires the written consent from the employee. Thus, during an accident investigation, information on drug abuse by a government employee in a safety sensitive position will not be made available to the investigators unless the employee gives written authorization. In contrast, drug and alcohol testing results from individuals in the private sector is released without written consent.

One of the most (if not the most) important objectives of postaccident drug and alcohol testing is to determine whether such substances caused or contributed to the cause of an accident. The use of the results of such testing by the Safety Board has led and will continue to lead to the development and implementation of recommendations and procedures to prevent accidents. If DOT employees in safety sensitive positions are free to withhold the results of postaccident toxicological test results from the Safety Board, crucial factual information pertaining to the accident will be kept secret, and the Safety Board's mandate to determine the facts, circumstances, and probable cause of the accident and to develop safety recommendations will be defeated. Therefore, DOT must eliminate the double standard between the disclosure of toxicological test results on private persons who have a direct responsibility for transportation safety and DOT employees who occupy safety sensitive positions.

At the present time, blood and urine specimens collected during investigation of rail accidents and incidents are under the control of the FRA. The FRA contracts with and pays for a private laboratory to carry out the drug analysis of blood and urine specimens. Similarly, the FAA has an interagency agreement with the Armed Forces Institute of Pathology (AFIP) for testing fatally injured crewmembers in aviation accidents. In selected cases, a surviving pilot or crewmember has been tested under this program. However, postaccident testing under new regulations for the modal agencies (except the FRA) places the responsibility for analysis of urine specimens for drugs with the employer. Furthermore, the reporting of toxicological testing (including postaccident testing) results to the appropriate DOT regulatory agency--such as the FAA, FHWA, and the Coast Guard--is done on a 6-month basis. Thus, a DOT agency may not know the results of postaccident testing until months after an accident investigation has been completed.

With the exception of railroad and perhaps marine employees, alcohol- and drug-impaired persons involved in accidents may not be identified as a result of the current modal regulations and DOT's Drug-Free Departmental Workplace Drug Testing Guide for DOT employees in safety sensitive positions. The drug and alcohol regulations for the various transportation modes are inconsistent, confusing, and, in some modes, inappropriate.

Therefore, the National Transportation Safety Board recommends that the U.S. Department of Transportation:

Develop postaccident and postincident testing regulations that are separate from the pre-employment, random, and reasonable suspicion testing regulations in all modal agencies. (Class II, Priority Action) (I-89-4)

Adopt uniform regulations for all drug and alcohol testing, other than postaccident and postincident testing, in all transportation modes, including U.S. Department of Transportation employees who are in safety sensitive positions. (Class II, Priority Action) (I-89-5)

Adopt uniform regulations on postaccident and postincident testing of private sector employees for alcohol and drugs in all transportation modes. Use the Federal Railroad Administration's (FRA) current regulation as a model regulation for all transportation modes except for the permissible blood alcohol level of less than 0.04 percent. Using the FRA regulation as a model for other transportation modes refers only to the collection of blood and urine and the screening and confirmation of positives in blood. As a minimum, the drugs identified in FRA screen should be used in the other modes. Reference to the FRA model does not refer to the administration or implementation of the regulation. The Safety Board recognizes that the implementation of the regulation may be different in the various transportation modes. The regulations for all modes should provide:

- for the collection of blood and urine within 4 hours following a qualifying incident or accident. When collection within 4 hours is not accomplished, blood and urine specimens should be collected as soon as possible and an explanation for such delay shall be submitted in writing to the administrator. (Class II, Priority Action) (I-89-6);
- testing requirements that include alcohol and drugs beyond the five drugs or classes specified in the Department of Health and Human Services (DHHS) guidelines and that

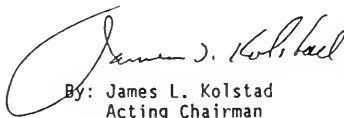
are not limited to the cutoff thresholds specified in the DHHS guidelines. Provisions should be made to test for illicit and licit drugs as information becomes available during an accident investigation (Class II, Priority Action) (I-89-7).

Adopt uniform regulations in postaccident and postincident testing of U.S. Department of Transportation employees in safety sensitive positions. The regulations should provide:

- for the collection of blood and urine within 4 hours following a qualifying incident or accident. When collection within 4 hours is not accomplished, blood and urine should be collected as soon as possible and an explanation for such delay shall be submitted in writing to the administrator by the local official making the decision to test. (Class II, Priority Action) (I-89-8);
- testing requirements that include alcohol and drugs beyond the five drugs or classes specified in the Department of Health and Human Services (DHHS) guidelines and that are not limited to the cutoff thresholds specified in the DHHS guidelines. Provisions should be made to test for illicit and licit drugs as information becomes available during an accident investigation (Class II, Priority Action) (I-89-9);
- that toxicological results from Federal employees be made available to investigators of the National Transportation Safety Board (Class II, Priority Action) (I-89-10);
- procedures by which Federal employees are sent to the nearest hospital or medical facility for obtaining blood and urine specimens for toxicological testing following a qualifying incident or accident (Class II, Priority Action) (I-89-11);

Issue rules specifying zero (no alcohol) as the blood alcohol concentration for private sector employees in safety sensitive positions in all transportation modes and for Federal employees in safety sensitive positions. (Class II, Priority Action) (I-89-12)

KOLSTAD, Acting Chairman, BURNETT, LAUBER, NALL, and DICKINSON, Members, concurred in these recommendations.


By: James L. Kolstad
Acting Chairman

QUESTIONS SUBMITTED BY SENATOR HARKIN

SENATOR HARKIN: Despite the improvements in procedures and equipment over the past ten years, I understand that the number of train collisions have remained fairly constant. Several of these have resulted in death and injury to crew and/or passengers. Is that an accurate perception?

ANSWER: Train collisions have remained at a fairly constant level over the past six years. The latest published statistics indicate that the accident rate for train collisions is about 0.5 accidents per million train miles. The number of fatalities associated with railroad collisions varies from year to year. For example, only five crew and no passengers were killed due to train collisions in 1991. Already in 1993, the NTSB has investigated collision accidents which have resulted in the death of two crew members and seven passengers. All seven passengers were killed in the Gary, Indiana accident which occurred on January 18, 1993.

SENATOR HARKIN: What new technologies exist today which could favorably impact human error, control system accidents. To what extent do they provide higher assurance that control commands are correctly and reliably placed on board the locomotive for the crew, that monitor the crews compliance of those instructions, and can predict when compliance is not going to occur, at which time such technologies would step in and would automatically reduce the trains speed, or even stop the trains involved?

ANSWER: Automatic Train Control System technology currently exists. A system which could monitor for human error and take over operation of the train in the event that a train was being operated in an unsafe manner is entirely feasible and has, in fact, been demonstrated on North American freight railroads by the Burlington Northern Railroad under the name Advanced Railroad Electronic System. Unfortunately, work on this system has been discontinued because of lack of support within the industry and government. The Association of American Railroads is sponsoring independent research into another form of Automatic Train Control, but progress has been very slow and continuation of this type of research is uncertain.

SENATOR HARKIN: If that is the case, has the technology been accepted by the railroad industry? Are there any plans for implementing such systems across the country?

ANSWER: Yes. Specification for the Advanced Train Control System (ATCS) has been completed and certain segments are being employed in the rail industry today. The NTSB has seen demonstrations of some of the major control system pieces of ATCS developed by Burlington Northern. Other railroads are currently using ATCS for a variety of tasks including work order reporting, locomotive performance monitoring and in some cases, track force equipment management.

Final decisions on implementing ATCS nationwide will be dependent on a variety of factors, including cost considerations and the difficulties of adopting a standardized procedure for all railroads. The Safety Board understands these factors will be

discussed at the April 16, 1993 Association of American Railroads (AAR) board meeting.

SENATOR HARKIN: What leadership role does the National Transportation Safety Board intend to play in this area?

ANSWER: The Safety Board will continue to follow-up on safety recommendations issued to the Federal Railroad Administration and the railroad industry to implement Positive Train Separation, and supporting measures to improve railroad safety.

SENATOR HARKIN: In 1992, Amtrak, in association with the Burlington Northern brought a high technology locomotive to Washington. At the time, they were discussing the testing of that technology on lines used by both Amtrak and Burlington Northern. Was that technology different from what you have described above?

ANSWER: Last year, the Chairman of Amtrak discussed a pilot program using the technologies (Advanced Railroad Electronic System, ARES) developed by Burlington Northern. Since that time, Burlington Northern has dropped ARES in favor of the standardized approach being developed through ATCS. A pilot program testing train control system advances would be beneficial.

SENATOR HARKIN: Does this ATCS technology have application to the high speed rail systems that are now being considered by Amtrak and various groups? To what extent would such technology improve the safety of high speed train operations?

ANSWER: The technologies associated with ATCS represent the latest strides in train control. Many of them have direct application to the high speed rail industry, particularly for high speed trains which operate along existing freight railroad tracks or other commuter rail service.

SENATOR HARKIN: Can this technology also be applied to the commuter and transit systems that serve major cities, such as Washington?

ANSWER: ATCS technology can be used in any type of rail operation. However, the requirements for transit and some commuter systems are less stringent under the Federal Transit Administration than they would be under the Federal Railroad Administration. Many transit systems already have systems that provide Positive Train Separation, such as the Washington Metropolitan Transit Authority. Many of the commuter systems cannot as yet employ ATCS because of the expense and the lack of technology to facilitate their electrical propulsion requirements.

QUESTIONS SUBMITTED BY SENATOR SASSER

SENATOR SASSER: One of my concerns during last year's hearing was the potential for life-threatening accidents in reduced visibility areas. I raised that concern, as you know, because of the 1990 multi-vehicle pileup on Interstate 75 near Calhoun, Tennessee.

In response to my questions concerning the I-75 incident, NTSB responded that "many states do not instruct or direct drivers on what to do during these hazardous situations."

Reduced visibility warning and detection devices provide one response. However, in situations of recurring reduced visibility, to what extent would NTSB recommend to state and local officials that reduced visibility examinations/simulations be incorporated in the vehicular licensing process?

ANSWER: As a result of its recent report on limited visibility accidents the Safety Board issued several national and local safety recommendations. The U.S. Department of Transportation was asked to incorporate fog and other limited-visibility condition countermeasures in demonstration projects of the Intelligent Vehicle Highway System program.

The Board recommended that the Federal Highway Administration, following the completion of the National Cooperative Highway Research Program Project 20-5, Topic 23-12, "Reduced Visibility on the Highway," ensure the continued development of effective fog and other limited-visibility countermeasures and make information available to States on a timely basis. It also recommended that the Federal Highway Administration cooperate with the National Highway Traffic Safety Administration, the American Association of Motor Vehicle Administration Automobile Association, and the American Driver and Traffic Safety Education Association, review and update driver license, educational, and remedial training materials to ensure that guidance for driving during limited-visibility conditions is uniform and complete, and is included in commercial driver license materials.

A recommendation was issued to the National Highway Traffic Safety Administration (NHTSA) in cooperation with other agencies to review and update driver license, educational, and remedial training materials to ensure that guidance for during limited-visibility conditions is uniform and complete. Also, the Board recommended that the NHTSA cooperate with the American Association of Motor Vehicle Administrators to develop model test questions for licensing examinations on during limited-visibility conditions.

The American Association of Motor Vehicle Administrators received a safety recommendation to notify its members of the circumstances of the Calhoun accident, develop limited-visibility inserts to be included with driver license renewal, motor vehicle registration renewals and other similar mailings. It was also asked to review and update driver license, educational, and remedial training materials to ensure that guidance for driving during limited-visibility conditions is uniform and complete. The Association was also requested to cooperate with the National

Highway Traffic Safety Administration in developing model test questions for driver license examinations.

The American Automobile Association received a safety recommendation to work in cooperation with other agencies to review and update driver license, educational (including Triptik maps), and remedial training materials to ensure that guidance for driving during limited-visibility conditions is uniform and complete.

The American Driver and Traffic Safety Education Association received a safety recommendation to work in cooperation with other agencies to review and update driver license, educational, and remedial training materials to ensure that guidance for driving limited-visibility conditions is uniform and complete.

SENATOR SASSER: Interstate 75 is also traveled extensively by commercial vehicles. In fact, 20 tractor-semitrailers were involved in the 1990 accident. I note that the NTSB places the safety of heavy commercial trucks on its "Most Wanted list of safety issues.

And, as your testimony indicates "although combination trucks account for only 1.8 percent of all U.S. highway accidents, they are involved in 6.7 percent of all fatal accidents." All totalled, over 5,000 persons a year are killed in accidents involving heavy trucks.

In the aftermath of your investigation of the I-75 pileup, what specific findings and recommendations did the NTSB make regarding instructions to commercial vehicle operators driving in reduced visibility situations?

ANSWER: The Safety Board found as a result of its investigation of the Calhoun, Tennessee multiple vehicle collision that motorists, including drivers of commercial vehicles, are not provided with sufficient specific behavioral guidance on responding to limited visibility situations.

As a result, the Safety Board issued safety recommendation H-92-88 to the Federal Highway Administration on October 28, 1992, that stated:

In cooperation with the National Highway Traffic Safety Administration, the American Association of Motor Vehicle Administrators, the American Automobile Association, and the American Driver and Traffic Safety Education Association, review and update driver license, educational, and remedial training materials to ensure that guidance for driving during limited-visibility conditions is uniform and complete and is included in commercial driver license materials.

The Federal Highway Administration's March 1993 response to this safety recommendation is presently being evaluated.

SENATOR SASSER: The Federal Highway Administration has an ongoing Intelligent Vehicle Highway System project involving commercial vehicles -- Advantage I-75.

To what extent, if any, has NTSB been briefed or provided input regarding commercial vehicle IVHS?

ANSWER: The Board Members and staff have been briefed by the FHWA and NHTSA on IVHS programs and projects funded by those agencies, and the Members and staff have also received a briefing from the executive director of IVHS America. Commercial vehicle projects have been referenced during these sessions. The Safety Board has had a staff member, designated as a focal point, attend all three of the annual meetings of IVHS America in order to remain familiar with IVHS programs. The Safety Board is assessing the feasibility of funding membership in IVHS America to receive their periodic publications and serve on committees involving such projects as Advantage I-75.

SENATOR SASSER: Your written testimony indicated that a significant amount of NTSB's work involves aviation incidents and accidents in other countries.

Can you provide the Subcommittee with a brief description of these investigations, including the affected airline, number of fatalities and injuries, if any, and the NTSB conclusion as to the cause?

ANSWER: In calendar year 1992, the Safety Board sent investigative teams to assist in the investigation of seven major aviation accidents overseas. These accidents resulted in 414 fatalities and 154 serious injuries. A brief summary of these major investigations follows.

On December 21, 1992, about 0830 local time, a Martinair DC-10 crashed on the runway at Faro, Portugal. The airplane was being operated on a charter flight from Amsterdam to Faro. The airplane was on its second approach to the airport, in heavy rain, when it struck the runway. The pilot reported getting a strong down gust of wind in the final moments of the approach. There were 327 passengers and 13 crew members on board. Two flight attendants and 52 passengers were fatally injured. The Portuguese investigators are in the process of completing a draft report on the accident.

On November 24, 1992, China Southern Airways flight CZ3943 impacted the face of a nearly vertical mountain while on approach to Guilin, China. All 141 persons on board the airplane were fatally injured. The U.S. investigative team was headed by the NTSB U.S. Accredited Representative and included technical experts from the FAA, Boeing and General Electric. This was the first ever U.S. investigative team to work in China on an ICAO Annex 13 investigation. Due to the impact and location of the wreckage in a falling rock area, only about 2 percent of the wreckage was recovered. The cockpit voice recorder and the flight data recorder were located and brought to the Safety Board's laboratory for inspection. The investigation is examining the extent to which possible problems with one engine and flightcrew procedures may have contributed to the accident.

On October 5, 1992, the Safety Board sent a team to Amsterdam, The Netherlands, to participate in the investigation of the accident involving El Al flight 1862, a Boeing 747 freighter, which crashed shortly after takeoff from Schiphol Airport. The five flightcrew members and 55 persons on the ground were fatally injured. Previously on December 29, 1991, Safety Board investigators traveled

to Taipei, Taiwan to investigate an accident involving China Airlines flight CI-358, a Boeing 747 freighter, that crashed shortly after takeoff. The five flightcrew members were fatally injured. The investigation determined that in both accidents the No. 3 engine had separated from the wing and subsequently struck the No. 4 engine which then also separated from the wing. As a result of the Safety Board's participation in these investigations, on November 3, 1992, four recommendations were issued to the FAA. The recommendations addressed the reduction in inspection times for the pylon-to-wing attachment fuse pins, the installation of a mid-spar fuse pin indicating stripe as a check for wing-to-eylon misalignment before each flight, performance of instrumented flight tests to validate the loads on the fuse pins, and to make available a newly designed fuse pin. The initial FAA response to these recommendations has been positive.

On June 7, 1992, the Government of Panama requested that the Safety Board assist in the investigation of an accident involving COPA Air Lines flight 201, a Boeing 737-200, which crashed near Tucuti, Panama on June 6, 1992. All 47 persons on board the airplane were fatally injured. The investigation of this accident involved Safety Board investigators spending several weeks in the Derian jungle of Panama searching for an examining wreckage. The cockpit voice recorder and flight data recorder were sent the NTSB laboratory for analysis. Additionally, many of the airplane's instruments, electronic packages, and hydraulic system components were returned to the United States for examination and testing under the supervision of Safety Board investigators. The Panamanian investigator-in-charge expects to have a draft report completed by the end of May 1993.

On February 9, 1992, a Gamcrest Convair 640 crashed near Kafoutine, Senegal. The airplane was a charter flight to the Club Med resort at Cap Shirring, Senegal. Of the 57 persons on board the airplane, 30 were fatally injured, 20 received serious injuries, and the remaining 7 had minor or no injuries. The Safety Board sent investigators to the scene to assist in the investigation. The investigation determined that the crash had occurred before dawn and that the flight crew had apparently mistaken a row of lights near the town to be the runway lights. The airplane descended into the trees before the pilots realized their mistake and initiated a climb.

On January 20, 1992, investigators traveled to Strasbourg, France to participate in the investigation of an Air-Inter A-320. The airplane crashed while on the landing approach. Of the 96 persons on board, 87 were fatally injured and 4 had serious injuries. The Safety Board has worked closely with the French investigative authorities and the manufacturer of the advanced technology airplane to determine the cause of the accident. A draft report on the accident is complete and a final report is expected to be completed by the end of May 1993.

Additionally, during 1992, the Safety Board provided the services of its laboratories and specialists to support about 50 foreign accident investigations. A considerable amount of these cases involved reading out and analyzing cockpit voice recorders and flight data recorders, and the examination and analysis of materials

failures in the Safety Board's laboratories. Additionally, the Safety Board sent specialists to U.S. facilities to attend the inspection and testing of U.S.-manufactured components sent to the U.S. by foreign investigation authorities.

SENATOR SASSER: The advent of high speed rail and maglev operations in this country will have a range of safety implications.

Based on the briefing provided last year by the Federal Railroad Administration, has the NTSB begun any preliminary assessment of potential staffing needs? Also, to what extent will retraining be a component in the NTSB involvement?

ANSWER: The NTSB staff is fully aware of the advent of high speed and maglev operations in this country. We are doing all that we can to keep abreast of the latest developments in this area. In the long term we will have to develop the expertise within our staff to handle new technology. New technology does not only involve high speed rail. New transit systems based on light rail vehicles and other modern rapid transit vehicles are using state of the art braking, propulsion, and vehicle control technology. Most of these new control systems are based on microprocessor control which utilizes computer programs to perform many safety critical functions. The NTSB must ensure that highly trained staff is in position to ensure the safety of these new technology systems--whether the application is high speed rail, maglev, or rapid transit.

SENATOR SASSER: The Administration's supplemental request contains significant increases in the area of highway construction. Your testimony notes the increased incidence of fatalities along highway zone sites.

To what extent, if any, has the Federal Highway Administration responded to the NTSB recommendation regarding the development of a national work zone safety program?

ANSWER: The Federal Highway Administration has not yet responded to the safety recommendations that were issued as a result of the Board's Safety Study on highway work zone construction safety.

SENATOR SASSER: The NTSB could not conclusively determine the cause of the United Airlines/Colorado Springs accident. Your testimony cites the aircraft's use of "old, 4-parameter flight data recorders" as hindering the NTSB investigation.

To what extent is the current U.S. airline fleet equipped with the 4-parameter flight data recorders? What has been the FAA's response regarding the NTSB's recommendation regarding use of "more state-of-the-art recorders"?

ANSWER: As of 1989, all of the U.S. airline fleet was required to have at least 5-parameter (or more, depending on airplane type certification date and configuration) digital flight data recorders. Estimating the extent of the U.S. airline fleet's 5-parameter flight data recorder equipage would require weeks or more, as the majority of them do not readily know what parameters their airplanes' flight

data recorders record; however, a conservative estimate would be twelve hundred in number. The FAA was asked to provide an estimate but said they were not able to do so. There is no FAA requirement for the carriers to keep documentation for such determination, despite the NTSB's recent recommendation to that effect. The NTSB has been actively polling the carriers for this information out of its own interest for the past several months in order to facilitate flight data recorder readouts after accidents, as it is sometimes a lengthy and investigation-hindering process to determine what parameters were being recorded and how to decode the recorded data. Since it is in the NTSB's interest to be able to quickly and accurately read out flight data recorders after accidents, the polling was independently undertaken by the NTSB instead of waiting for the FAA to require carriers to develop and keep the documentation.

The NTSB has, since 1974, issued numerous safety recommendations to the FAA requesting improved flight data recorder survivability and expanded parameter recording capabilities. After a considerable amount of Congressional pressure, the FAA issued a series of flight recorder rule changes in 1987, 1988, and 1992 that virtually fulfilled all of the NTSB's prior flight recorder recommendations, including the requirement to upgrade 5-parameter flight data recorders (what the United Airlines/Colorado Springs 737 had) to 11-parameters by May of 1994. However, on January 29, 1993, the FAA granted a petition of exemption to the Air Transport Association of American (ATA) that eliminates the required 5-parameter to 11-parameter flight data recorder upgrades on those Stage 2 noise-certified aircraft that ATA's member air carriers will be retiring before December of 1998. The NTSB's comments to the FAA regarding the ATA's Petition for Exemption opposed any exemption, arguing that 7 years (upgraded flight recorder rules were issued in 1987) was adequate time for 100% compliance considering the average upgrade cost per airplane would be under \$50,000 (including all parts and labor). The NTSB's comments resulted in a more strict, scheduled retirement plan than the ATA petitioned for (the exemption, as granted, requires complete retirement planning be submitted to the FAA by August of 1993, with 25% of those exempted aircraft to be retired by the end of 1994, 50% retired by the end of 1996, and the balance retired by the end of 1998), but the exemption granted nevertheless means that many jet transports (727s, 737s, DC-8s, DC-9s, and others) could still be operating with 5-parameter flight data recorders until December of 1998. Therefore, the potential for undetermined probable cause air carrier accidents like Colorado Springs where 5-parameter flight data recorders hinder the determination of probable cause will remain until December of 1998 unless something is done to require 11 or more parameter flight data recorders on those airplanes currently affected by the FAA-granted ATA exemption.

Additionally, as a result of a number of recent accidents in which vital flight recorder information was lost due to thermal damage to the tape recording media, the NTSB issued safety recommendation A-92-045 that called for the FAA to cancel the old Technical Standard Orders (TSOs) C51a and C84 which set inferior crash and fire survivability requirements for flight recorders. New TSOs exist that set improved survivability requirements for flight recorders built to their standards, but until the old TSOs are

canceled, recorders and parts for them can still be made to the old TSO standards. The FAA agreed to cancel the old TSOs C51a and C84 in their August 5, 1992, response to A-92-045; however, the FAA has not yet done so and recently told NTSB staff that it was a low priority item and that it would be some time before the cancellation notice would be issued. The Safety Board is concerned that the delayed cancellation will extend the service life of flight recorders that will not survive prolonged exposure to low intensity fires and, therefore, increase the risk of having an accident in which flight recorder data is destroyed in post-accident fire.

SENATOR SASSER: As a result of the NTSB recommendation in the Colorado Springs accident, the FAA did agree to take steps to measure meteorological threats to an airplane's operational safety.

What is the status of FAA's action in this area, particularly the development of a meteorological aircraft hazard program?

ANSWER: The Federal Aviation Administration stated that it agrees with the intent of the recommendation and that it plans to address this and a related recommendation through an interagency program with the National Oceanic and Atmospheric Administration/Forecast Systems Laboratory or the National Science Foundation/National Center for Atmospheric Research. However, the Safety Board is concerned that the FAA believes that due to budget constraints and program priorities, these projects cannot be started until fiscal year 1995. The Safety Board understands the difficulty in funding these projects in fiscal year 1993, but we believe that the FAA should reevaluate its priorities to include them in 1993. Pending further information concerning fiscal year 1993 funding, the Safety Board classified these safety recommendations as "Open--Unacceptable Response."

SENATOR SASSER: As you know, although the technology will be imported, there are various efforts underway to develop high speed rail operations in this country. The Federal Railroad Administration must develop safety guidelines to accommodate high speed rail and maglev trains.

What specific safety recommendations might NTSB offer the Federal Railroad Administration, particularly where there is some variance among systems technology, i.e., Japanese versus European technology?

ANSWER: The Safety Board believes that the Federal Railroad Administration's role in high speed rail should be to establish minimum safety performance standards. The FRA should not try to modify the multitude of current railroad regulations to adapt them for high speed rail. The technology used on high speed rail systems is based on the standards of the country that designed and developed the equipment. The standards are often more stringent than the standards used in the United States. The high speed rail networks used in Japan and Europe are proven technology based on years of research and experience.

SENATOR SASSER: Since NTSB anticipate personnel training/retraining with respect to advanced rail technologies, what specific recommendations might NTSB offer the Federal Railroad

Administration regarding anticipated technical and regulatory personnel needs with respect to the safety framework for advanced rail technologies?

ANSWER: The Federal Railroad Administration should take the opportunity to learn from the operators and manufacturers of the equipment. A good working relationship with these experts is vital in order to reach the understanding of high speed rail systems necessary to ensure the safety of any future U.S. high speed rail network.

QUESTIONS SUBMITTED BY SENATOR D'AMATO

SENATOR D'AMATO: NTSB has recommended that hard-wing aircraft, like the Fokker 28 involved in the LaGuardia crash, be physically inspected for adherence of ice prior to take offs in snow/ice conditions. Are you aware that FAA has granted an exception from physical inspection for the Fokker 28. Evidently, this exception is based on the new deicing programs created by airlines operating this jet.

These programs include: painting of a new type of indicator stripe on aircraft wings; pre-take off visual checks from outside the aircraft after hold over time has been exceeded (viewing to take place no more than 16 feet from the wing stripe); and visual check 5 minutes prior to take off.

Do you think that granting exceptions of this kind is appropriate? Should FAA have considered other alternatives?

ANSWER: We are aware of the procedure that the FAA has approved for the inspection of the Fokker 28 airplane during icing conditions. While the Safety Board advocated tactile inspections on these airplanes, we recognize the difficulties and even the potential dangers of deploying ground personnel to inspect airplanes while they are positioned in the takeoff queue. We understand that before it approved the visual inspection procedure, the FAA observed a controlled demonstration that showed that the painted stripe did effectively permit training personnel to observe contamination and that the training requirement was a part of the approval. Thus, the acceptance was probably appropriate although the Board has not evaluated the current procedure first hand.

SENATOR D'AMATO: On March 22, 1992, 27 people were killed in the crash of a USAir Fokker 28 jet at LaGuardia Airport during a snowstorm. This subcommittee held a hearing in New York City with respect to the Federal Aviation Administration's winter operations policies.

NTSB's report on this crash stated that the flight crew's decision to take off "without positive assurance" that the wings were free of ice caused the crash (ice on the wings caused aerodynamic stall and loss of control). NTSB also blamed the airline industry and the FAA for failing:

"... to provide flight crews with procedures, requirements and criteria compatible with departure delays in conditions conducive to icing."

This winter FAA has in place preliminary rules regarding de-icing procedures. How is the new program working? Do you see areas that need strengthening (e.g., including commuter flights, and concerns about exceeding hold-over times)?

ANSWER: The Safety Board is generally pleased with the FAA's interim rule as it applied to the Part 121 air carriers. To our knowledge, the program worked well during this winter season. We believe that the adherence to holdover times, along with airport and air traffic control cooperation to reduce takeoff delays, has been effective. We understand that pilots know that they have the support of their air carrier management and are thus less reluctant to delay flights and taxi back to the gate if they are not certain of the condition of their airplane.

The Safety Board believes that the commuter carriers should also be required to address their winter operation procedures even though the accident record does not indicate that they have had significant problems.

SENATOR D'AMATO: The February 26 bombing of the World Trade Center in New York City affected the PATH trains although it was not a "transportation accident." I understand that NTSB will not conduct an investigation; however, what involvement will NTSB have with respect to emergency response procedures?

ANSWER: The Safety Board does not consider the World Trade Center bombing to be a transportation accident. However, there is always the possibility that a transportation accident could occur involving a PATH train at the station located under the World Trade Center. Given that possibility, the Safety Board feels that a review of PATH's emergency procedures would benefit the public. Consequently, our staff is currently reviewing those procedures to learn of safety problems that may emerge and to study what corrective measures might be justified.

SENATOR D'AMATO: What were your findings with respect to New York City's emergency response capabilities following the August 28, 1991 derailment of a New York City Transit Authority subway train at Union Square Station? Are there areas requiring improvement?

ANSWER: The Safety Board's most recent experience with emergency response agencies of the City of New York was very positive. The Safety Board investigated the New York City Transit Authority derailment at Union Square Station on August 28, 1991. In the Board's report it stated that "Emergency response activation was optimal, with the first responders, security personnel, and medical units responding within 5 minutes of notification". At this time the Safety Board sees no need for improvement with respect to New York City's response capabilities.

SENATOR D'AMATO: What role does NTSB play with respect to making recommendations for schoolbus safety?

ANSWER: Present Federal motor vehicle safety standards (FMVSS) relating to school bus body joint strength, passenger seating, and occupant protection became effective in 1977, and were promulgated in large part because of Safety Board schoolbus accident investigation which addressed these issues.

More recently, the Safety Board issued a recommendation in 1989 to the NHTSA asking for revision of FMVSS 217 to require egress be based on vehicle occupant capacity. In 1990, the Safety Board issued recommendations to the NHTSA to require that floor level emergency exits be designed so that once opened they remain open, during emergencies and evacuations. Also in 1990, we issued recommendations for NHTSA to conduct research to determine the benefits and disadvantages of larger schoolbus side windows and amend FMVSS 217 to require larger side windows if research supports this. The Safety Board has reviewed the final amended rule on FMVSS 217 and responses to the four recommendations issued during 1989 and 1990 and they have been classified "Closed--Acceptable Action."

The Safety Board also issued recommendations in 1989 to the NHTSA regarding the crashworthiness and post-crash flammability of school buses. The work on-going at NHTSA in response to these recommendations has resulted in their classification as "Open--Acceptable Action."

The Safety Board also issued recommendations during 1992 requesting NHTSA require the use of automatic air brake slack adjusters on truck and bus chassis. The recent NHTSA requirement in this area has resulted in these recommendations being classified "Closed--Acceptable Action."

SENATOR D'AMATO: Does NTSB think that federal agencies have played an adequate role in schoolbus safety? How great a role do states play with respect to physical design issues affecting the safety of schoolbuses as well as their operation?

ANSWER: The NTSB and the NHTSA, throughout their existence, have placed school bus safety issues as a top priority. These efforts have been based on countermeasures derived from investigations of major school bus accidents, as well as input from state and local school transportation administrators and legislators to address occupant protection, vehicle structural integrity, and pupil pedestrian safety. Input from states has influenced federal regulations in areas such as emergency doors and roof hatches.

State and local governments have also instituted various regulations and policies on school bus seat belts and lighting and visibility requirements for buses.

SUBCOMMITTEE RECESS

Senator LAUTENBERG. With that we thank you. This hearing is now recessed. The subcommittee's next scheduled hearing is 2 weeks from today, Wednesday, March 31, 10 a.m., in SD-138. We will be discussing the implementation of ISTEA at that time with the Federal Highway Administration.

[Whereupon, at 11:09 a.m., Wednesday, March 17, the subcommittee was recessed, to reconvene at 9:32 a.m., Wednesday, March 31.]

DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1994

WEDNESDAY, MARCH 31, 1993

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 9:32 a.m., in room SD-138, Dirksen Senate Office Building, Hon. Frank R. Lautenberg (chairman) presiding.

Present: Senators Lautenberg, Domenici, Hatfield, and Stevens.

GENERAL ACCOUNTING OFFICE

STATEMENT OF KEN MEAD, DIRECTOR, TRANSPORTATION ISSUES,
RESOURCES, COMMUNITY AND ECONOMIC DEVELOPMENT

DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

STATEMENT OF E. DEAN CARLSON, ACTING ADMINISTRATOR

NONDEPARTMENTAL WITNESS

AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION
OFFICIALS

STATEMENT OF FRANK FRANCOIS, EXECUTIVE DIRECTOR

OPENING REMARKS OF SENATOR LAUTENBERG

Senator LAUTENBERG. I would like to call the subcommittee to order. This hearing of the Subcommittee on Transportation is starting off today with a review of the Intermodal Surface Transportation Efficiency Act [ISTEA] and exactly what has happened since that law has been put into effect.

Just about 2 years ago, Senator Moynihan introduced legislation that was the basic blueprint for what was to become the Intermodal Surface Transportation Efficiency Act. I am proud that I was an original cosponsor of that creative and forward looking bill that described a surface transportation policy that sought greater flexibility, efficiency, and balance among the various modes.

In passing a budget resolution this week, the Senate has gone on record in support of a plan to significantly increase transportation funding over the next 5 years to try to meet the goals that were

established in ISTEA. And today we are going to hear about several issues that will determine if those funds will be spent as we planned.

As we implement ISTEA through the appropriations process, we must continue to be careful to ensure that we are supporting sound investment decisions. We must safeguard our existing infrastructure investments and we must make sure to provide and encourage new technologies that will provide a sound investment that is cost effective while meeting our congestion, air quality, energy consumption, and mobility problems.

ISTEA was created to do just those things. That law created four new programs, the Surface Transportation Program, the Congestion Mitigation and the Air Quality Relief Program, the Intelligent Vehicle and Highway System [IVHS], and the National Highway System Program.

These were created in recognition that we could not continue to proceed as we had, that our surface transportation problems could no longer be addressed by simply pouring more concrete, by building our way out of them as it were. These programs recognized that we had to provide creative solutions to the congestion problems that we faced, the problem of deteriorating air quality, and other environmental concerns such as wetlands mitigation.

As author of the IVHS Program, it was my intent to make sure that we got as much productivity and use out of existing highways as possible. We had to use them more efficiently. We could no longer build, build, build. Clean air was not limitless, nor was the land.

Our decisions to build had to be made in the context of alternatives, alternatives such as to provide for other modes of transportation, and the alternative no build by relying on transportation systems management.

Now, I am anxious to hear from our witnesses today about how the new ISTEA programs are working. And if they are not, what are the problems? Is there something more we can do at the Federal level, or do we need to realize that because these programs are new? It is going to be some time before they are fully implemented at the State and local levels.

PREPARED STATEMENTS

Senator LAUTENBERG. At this point in the record, I will submit opening statements from my colleagues, Senators D'Amato and Sasser, who are unable to join us today.

[The statements follow:]

STATEMENT OF SENATOR D'AMATO

Mr. Chairman, today's hearing will cover many issues concerning the implementation of the Intermodal Surface Transportation Assistance Act of 1991 (ISTEA). However, since the fiscal year 1994 budget for the Federal Highway Administration has not yet been provided to Congress we will not be able to discuss it at this hearing. However, I look forward to hearing from today's witnesses on the progress of the new ISTEA programs.

The ISTEA is a remarkable statute that addresses our transportation needs from an intermodal perspective. It combines sensible transportation policy with the funding needed to address federal clean air and handicapped accessibility mandates.

Prior to ISTEA, the selection of transportation projects by states was too often predetermined by the categories of available federal funds, rather than by the ap-

propriateness of the transportation solution to be implemented. ISTEA emphasized the importance of local metropolitan planning organizations (MPO's). Projects included by the MPO's in their transportation improvement programs (TIP's) would provide a solid basis for states to select the most meritorious projects.

I am looking forward to hearing from today's witnesses. I am especially interested in the testimony concerning the Intelligent Vehicle Highway System program and the new Congestion Mitigation and Air Quality Improvement programs.

Thank you, Mr. Chairman.

STATEMENT OF SENATOR SASSER

Good morning. I thank the Chairman, and join in welcoming all of the witnesses.

The Subcommittee considers the implementation of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) at the same time that the nation continues to struggle towards economic recovery. Although widely reported, the economic recovery has been sluggish or virtually non-existent in many communities throughout the nation. Despite optimistic economic indicators, the fact remains that far too few good, high quality jobs are being created.

And, there can be no meaningful discussion of jobs, unless there is an increased investment in the nation's physical infrastructure. Numerous studies all indicate that an investment in infrastructure is an investment in people, and in jobs, and in the nation's immediate and long-term economic productivity.

In this context, ISTEA represented the need for change and a new direction to meet the transportation and economic needs of an ever mobile society. The old way of transporting people and goods could no longer serve the nation's economic and transportation demands. And, with ISTEA came a heightened sense of urgency regarding the future of the nation's transportation system. For far too long, previous Administrations had failed to make the critical link between infrastructure investments and the nation's overall economic health.

Today, in 1993, the nation stands at an economic crossroad created, in part, by the over decade long disinvestment in America's physical infrastructure. Our people are today out of work, in part, because the nation's transportation network does not work efficiently to meet the demands of a changing, mobile, and competitive world.

Yet, the enactment of ISTEA provided merely the roadmap towards making the nation's transportation network work for people. The hard part, the essence of the challenge lies ahead. And, in many respects, the real promise of ISTEA did not begin in earnest until the election of 1992.

The nation finally has a President in the White House who understands that the road to economic recovery and growth cannot be realized unless there is a significant, sustained, and shared commitment to the nation's physical infrastructure. All levels of government and the private sector must do their part. Most importantly, the Administration has demonstrated its commitment to the infrastructure by stepping up to the plate and offering focused, forthright leadership in this area.

Unlike the previous Administration, the Clinton Administration has kept faith with the goals and challenges of ISTEA. The Clinton Administration has demonstrated its commitment by making increased infrastructure investment a cornerstone of both its economic stimulus package and its long-term "Vision for America".

As a result, millions of Americans, in communities throughout the nation, will benefit enormously from the Clinton Administration pledge to fully fund ISTEA. In Tennessee, for example, the Clinton plan will mean an additional \$57.8 million in obligation authority. The end result for Tennessee and the nation will be jobs today and jobs tomorrow.

Let me close by saying I wholeheartedly support the Administration's infrastructure investment strategy. The Administration is to be applauded for "putting people first" through increased investments in infrastructure.

I thank the Chairman, and look forward to hearing the testimony.

INTRODUCTION OF FIRST PANEL

Senator LAUTENBERG. In our first panel we will hear from Ken Mead from GAO; Dean Carlson, the Acting Administrator of the Federal Highway Administration; and Frank Francois of the Association of American State and Highway Transportation Officials [AASHTO]. These folks are going to discuss the flexibility provi-

sions that are contained in ISTEA and how the States are making decisions with their sometimes limited resources.

So with that, I welcome the first panel. And, Ken, I will ask you to start the hearing for us and present your testimony. You know the rules of the committee. This is like the real thing, I think we had a dress rehearsal a couple of weeks ago, and you understand the clock and the interest in moving things along. Your full testimony will be included in the record as if presented and I would ask you to present your summary statement now. Thank you.

STATEMENT OF KEN MEAD

Mr. MEAD. Thank you, Mr. Chairman. I would like to cover three issues today: highway finance, demonstration projects, and funding flexibility.

HIGHWAY FINANCE

On highway finance, DOT's January 1993 projections show that over the life of ISTEA, income to the highway account of the highway trust fund will fall about \$12 billion short of the \$122 billion highway commitment to the States. If the revenue outlook does not brighten, by law DOT will have to cut State highway apportionments.

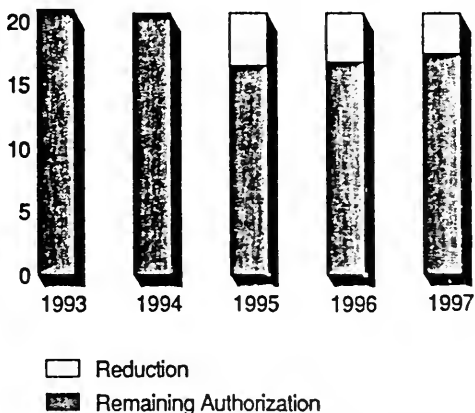
Now, we have a chart here. I hope it does not cut into my time unduly.

Senator LAUTENBERG. We have to allow a little time for handling.

[The chart follows:]

GAO Projected Required Reductions in Apportionments, FY 1993-1997

25 Dollars in Billions



Source: GAO analysis of FHWA data. Projections are based on January 1993 revenue estimates.

Mr. MEAD. What the chart is showing is that unless the outlook brightens, DOT will have to make about \$4 billion in cuts in each of fiscal years 1995, 1996, and 1997. A number of strategies could be used to cope with the shortfall. I do not want to go through all of them because most would simply mask the problem.

The most viable way to put this account on a sound footing would be, in fact, to extend the current 2.5-cent fuel tax that currently supports deficit reduction and put the money instead in the trust fund. The tax is due to expire in September 1995. If the full 2.5 cents were continued and credited to the highway account starting in October 1995, the account would close out the authorization period with an uncommitted balance of about \$1.8 billion. That is \$800 million over the minimum \$1 billion safety cushion DOT officials recommend.

HIGHWAY DEMONSTRATION PROJECTS

Turning to demonstration projects, ISTEA's demonstration project authorization was unprecedented, about \$6 billion for 539 projects. In 1987, it was \$1.3 billion for 152 projects and in 1982 it was only \$386 million.

The trust fund, Mr. Chairman, cannot afford to support this trend, and extreme caution needs to be exercised in authorizing new projects for several reasons. First, the demonstration projects are often only authorized at a fraction of their cost. For example, ISTEA's authorizations for demos will probably cover only about 25

percent of total costs. Instead of \$6 billion, you are probably looking at something in the neighborhood of \$25 billion.

Second, the projects tie up funds that States could use for other purposes. While there are clearly exceptions, our work is showing that demos can languish in early development stages or not get under way at all. Of 66 projects reviewed in 1991, one-third of them had not been started 4 years after they were authorized, and nearly one-half of a billion dollars was tied up in the trust fund reserved for these projects.

Third, and again there are exceptions, demos are frequently not aligned with the State transportation plans. Less than one-half of the demos appeared in State or regional plans in 1987 and only one-half of the ISTEA demos showed up in State plans. So we think the time has come to develop a framework to guide how demos are selected.

[The chart follows:]

GAO Actions to Improve Demo Project Selection and Funding

- Restrict Selection to Projects
Appearing on State Plans
- Change Project Funding Policy By:
 - Eliminating Project-Specific
Authorizations
 - Instituting "Use It or Lose It"
Provision

Mr. MEAD. Some of the suggestions we would offer are shown in this chart. One way to improve the process would be to authorize only those projects that appear in existing plans. Second, future demos might be authorized without specific project funding. And third, current law allowing project funds to remain available in perpetuity could be changed, such as through creating a use-it-or-lose-it provision. And if you did that, that would put demonstration projects on the same footing as most other highway projects.

FUNDING FLEXIBILITY

The terms of funding flexibility under ISTEA, as you know, Mr. Chairman, allow States to use funds flexibly to finance highway and mass transit and nontraditional projects like HOV lanes. While the first year of implementation is probably not the best barometer of the future, our work is indicating that there has been limited initial use of funding flexibility. In 1992, less than 3 percent of the flexible funds, or about \$350 million, were used to finance mass transit and nontraditional projects like HOV lanes. The majority of transfers were concentrated in New York, New Jersey, Massachusetts, Illinois, and Virginia, all air quality nonattainment areas.

Looking to the future, Mr. Chairman, making investment trade-offs among projects within a mode, as well as between modes, will become increasingly important in the transportation community, but the state of the art in comparing transportation alternatives is not well advanced. Most travel demand models were developed about 20 or 30 years ago and they are not well suited for today's transportation environment. We think development of a cross-modal investment framework and improved analytic tools under DOT's leadership would help decisionmakers identify the right mix of projects to address transportation priorities.

And that concludes our summary statement.

PREPARED STATEMENT

Senator LAUTENBERG. That is a timely presentation. I hope we did not deprive you of the opportunity to hit some of the highlights, but as I indicated the full statement is in the record.

Mr. MEAD. Thank you.

[The statement follows:]

STATEMENT OF KENNETH M. MEAD

I am pleased to have this opportunity to testify on key issues affecting the implementation of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the results of some of our past and ongoing work in the area of surface transportation infrastructure. Making surface transportation investment decisions has become increasingly complex because decision makers need to address deterioration of the nations roads, bridges, and transit systems; traffic congestion; air quality; energy efficiency; and mobility for the elderly and disabled.

ISTEA authorized an unprecedented level of funding to help meet transportation needs, and also gave state and local governments more flexibility to determine how funds should be distributed between highway and transit projects. My testimony today will address (1) the current fiscal realities that may threaten to limit investment opportunities, (2) the potential ramifications of authorizing new demonstration projects, (3) the use of funding flexibility, and (4) the need for improved analytic tools for making intermodal investment choices. In summary:

- The financial outlook for the highway account of the Highway Trust Fund is worsening. Revenues to the account are expected to fall \$12.5 billion short of ISTEA's funding commitment to the states, according to January 1993 projections developed by the Federal Highway Administration (FHWA). If the revenue outlook does not improve and no remedial action is taken, the consequence will be that FHWA will be required to cut state highway apportionments by approximately \$4 billion in each of fiscal years 1995 through 1997, the end of the ISTEA authorization period.
- ISTEA authorized 539 demonstration projects which accounted for over \$6.2 billion of the total authorization. While some demonstration projects address critical transportation problems and can be considered nationally significant, authorizing a large number of new demonstration projects will both worsen the financial outlook for the highway account and reduce states' opportunities to maximize the payoff from their highway investments. The financial problems of

the highway account would be exacerbated because demonstration projects often cost more than expected. Frequently, they are authorized at a level below their full cost, which may necessitate the authorization of additional federal funds. Moreover, demonstration projects can yield a low payoff for a variety of reasons, including the fact that they often languish in early project development stages and indeed may never be started at all. In addition, they are often not aligned with transportation priorities and thus fail to respond to states' and regions' critical transportation needs.

- In the context of limited resources, identifying and selecting transportation investments that promise to provide the greatest return on investment is especially important. ISTEA includes provisions permitting states increased opportunities to use highway funds for mass transit and nontraditional projects such as high-occupancy vehicle (HOV) lanes and vice-versa. This funding flexibility in turn allows state and local decision makers to target funds to the areas of greatest need. However, in our ongoing work we have found that few funds have been used flexibly to date. In fiscal year 1992, less than 3 percent of flexible highway funds were used to finance mass transit and nontraditional projects and about 3 percent of flexible mass transit capital funds were used to finance nontraditional projects. A variety of barriers stand in the way of states and localities thinking and acting cross-modally. These include restrictions on the use of state fuel tax revenue and the fact that highway and mass transit infrastructure needs exceed available resources.
- While ISTEA encouraged a total systems approach to select among transportation alternatives, state and local decision makers may need help in meeting this goal. For example, the state of the art in comparing transportation alternatives is not well advanced. Development of cross-modal criteria and improved analytic tools under the leadership of the Department of Transportation's (DOT) Office of Intermodalism and Bureau of Transportation Statistics could assist decision makers in making trade-offs between projects both within a mode and across modes. Such assistance will be critical as states and localities identify the right mix of projects, regardless of mode, that address the myriad objectives facing transportation decision makers.

I will now address these points in greater detail.

FINANCING CONCERNS DOMINATE THE HIGHWAY SPENDING HORIZON

Of ISTEA's total \$155 billion authorization through fiscal year 1997, over \$122 billion was targeted to federal-aid highway projects. It was initially expected that revenues derived from the federal fuel tax and other highway-related taxes would be adequate to support this level of funding.¹ However, subsequent revenue forecasts prepared by the Department of the Treasury and released in July 1992 projected that tax receipts would grow more modestly than previously expected. On the basis of the July 1992 revenue estimates and the assumption that ISTEA would be less than fully funded, we reported in September 1992 that the highway account faced a shortfall.² Total revenues to the account were expected to fall about \$6 billion short of meeting outstanding authorized funding by the end of the ISTEA authorization period.

HIGHWAY ACCOUNT'S FINANCIAL OUTLOOK IS WORSENING

Since our report was issued, the outlook for the highway account has become worse for two reasons. First, as of January 1993 projected fuel and other highway-related tax receipts through fiscal year 1999 were expected to be a total of \$3.2 billion lower than amounts projected in July 1992. The declining rate of revenue growth is largely due to revised national economic forecasts, as fuel tax receipts fluctuate with the number of miles driven each month, which in turn varies with the level of national economic activity and other key factors. Second, the balance of the highway account will be drawn down earlier than previously anticipated if the administration's economic stimulus package and long-term investment strategy,

¹The federal fuel tax is the primary component of all federal highway excise taxes. The federal gas and diesel taxes currently credited to the Highway Trust Fund are 11.5 cents and 17.5 cents per gallon, respectively. Note that these tax rates exclude an additional 2.5 cents per gallon for both fuels that is credited to the General Fund for deficit reduction, and an additional 0.1 cent per gallon that supports the Leaking Underground Storage Trust Fund.

²*Highway Trust Fund: Strategies for Safeguarding Highway Financing* (GAO/RCED-92-245, Sept. 15, 1992). The estimated shortfall was based on the assumption that obligation levels associated with Congressionally enacted obligation ceilings would on average be held to levels about \$1.5 billion lower than the full authorization from the highway account each year.

which support full funding of ISTEA from fiscal year 1993 through fiscal year 1997, are enacted. For the current year, for example, states may have the opportunity to obligate nearly \$3 billion more than earlier expected. Under these revised assumptions, the shortfall will total \$12.5 billion through the end of the authorization period, according to official administration projections developed by FHWA in January 1993.

The shortfall is calculated using a financial safeguard known as the Byrd Amendment, which serves as a safety mechanism to ensure that revenues to be credited to the highway account will be sufficient to meet all outstanding authorizations. In brief, the Byrd Amendment requires that in any given fiscal year, the highway account's cash balance plus 2 additional years' revenues be sufficient to honor outstanding authorizations through that fiscal year.³ Consideration of 2 future years' revenues is in keeping with the fact that existing highway law provides for the collection of fuel and other highway-related taxes for 2 years beyond authorizations.

The Byrd Amendment not only establishes a means of measuring the overall financial condition of the highway account, but also mandates FHWA to reduce states' apportioned funding if a shortfall is predicted. As shown on Attachment 1, under January 1993 projections, FHWA would be required to cut about \$4 billion annually from states' apportionments in fiscal years 1995 through 1997.

INCREASED REVENUE STREAM WOULD SAFEGUARD HIGHWAY FINANCING

Our September 1992 report presented a number of strategies that the Congress could employ to prevent the apportionment reductions. Since that time, however, the magnitude of the shortfall has approximately doubled. Furthermore, the President's long-range investment proposal advocates the extension of a 2.5-cent portion of the fuel tax currently scheduled to expire at the end of fiscal year 1995. In recognition of these significant changes, we would like to focus on two specific approaches for dealing with the shortfall.

First, the threatened shortfall could be eliminated if the Congress extended and credited to the highway account the 2.5-cent portion of the fuel tax currently targeted to deficit reduction and scheduled to expire at the end of fiscal year 1995. While the administration advocates the continued collection of the 2.5 cents beyond 1995, it remains an open question whether these funds will be applied to uses other than the Highway Trust Fund. If all the receipts from the 2.5 cent portion of the tax were credited to the highway account, FHWA's January 1993 estimates show that the accounts uncommitted balance at the end of the ISTEA authorization period would total about \$1.8 billion. This is \$800 million more than the minimum \$1 billion safety cushion FHWA officials have recommended to guard against unforeseen decreases in revenues.

A second approach would be to collect fuel and other highway-related taxes currently credited to the highway account for 3 years beyond the authorization period (through fiscal year 2000), instead of the current 2 years. Similarly, the Byrd Amendment would be changed to consider 3 instead of 2 future years' revenues. These actions would increase the amount of revenue available to offset outstanding authorizations. While this approach has the apparent advantage of satisfying the Byrd Amendment, it has some serious disadvantages as well. First, while extending the revenue stream would satisfy the Byrd Amendment, this action would have no effect on the sufficiency of current revenues to sustain a positive cash balance in the highway account. This would mean that the highway account would be unable to support reimbursing states for their expenditures. A second concern with extending the revenue stream is that by relying even more heavily on future revenues, uncertainty about anticipated revenue levels would be increased. This is because the further revenue projections stretch into the future, the greater the potential margin for error in the estimate.

SELECTION AND FUNDING OF DEMONSTRATION PROJECTS COULD BE IMPROVED

Recent surface transportation legislative actions have generated a proliferation in funds authorized for highway demonstration projects and the number of these projects. Highway demonstration, or special, projects fall into several distinct categories, but are generally specific construction projects identified by name in legislation. They can range in scope from paving a gravel road to building a multilane highway. ISTEA included 539 demonstration projects with an accompanying author-

³ Although the calculation associated with the Byrd Amendment does not directly consider obligation levels, obligation levels can have an indirect effect on the outcome of the calculation. This is because obligations have a bearing on the highway account's cash balance, which is a direct input to the calculation.

ization of \$6.2 billion. This amount represents almost a five-fold funding increase compared to the 1987 reauthorization, which included \$1.3 billion for 152 highway demonstration projects.

Some demonstration projects address critical transportation needs, but their high costs can preclude a state's capacity to fund them in the near term. Thus, the authorization of federal demonstration funds for such projects can prove essential to spurring their development. However, authorizing a large number of new demonstration projects could be problematic for a variety of reasons. First, authorized federal funds combined with the required state match are often not sufficient to complete the projects. Second, demonstration projects are often not aligned with state and regional transportation priorities. Third, the purchasing power of demonstration project funds is often limited by a slow rate of obligation.

DEMONSTRATION PROJECTS EXACERBATE FINANCIAL OUTLOOK

The financial problems of the highway account will be exacerbated if more demonstration projects are authorized through supplemental appropriations, or if additional funds are authorized for already approved demonstration projects that are underfunded. This is because new demonstration projects increase total authorized funding, and thus increase total potential liabilities to be met from the highway account.

Demonstration projects will compound the financial difficulties facing the highway account because these projects frequently cost more than initially expected. In our 1991 review of 66 highway demonstration projects in 8 states, we found that the cost to complete these projects frequently exceeds authorized funding levels.⁴ We reported, for example, that across all the projects reviewed, the federal funding and state match together comprised only 37 percent of total anticipated project costs. States therefore planned to use other federal, state, and local funds to cover about half of the additional \$1.2 billion needed to complete the projects. State officials, however, were uncertain how they could cover the remaining needs. The tendency of the projects to cost more than originally expected will present an additional drain on the highway account if extra funds must be authorized and appropriated in future years to cover the cost of project completion.

PROJECTS TYPICALLY DO NOT MEET TOP PRIORITIES AND HAVE LIMITED PAYOFF

In addition to worsening the financial status of the highway account, demonstration projects often provide limited benefits. One reason is that these projects frequently are not aligned with key transportation priorities. For example, in 1991 we found that a majority of the demonstration projects we reviewed did not appear on state or regional transportation plans before they were authorized. Thus, these projects did not receive the same degree of scrutiny as do projects undertaken through established federal-aid highway plans and programs.

A second reason why the payoff from demonstration projects is limited is that they often have problems causing them to languish in an early project development stage long after authorization. In our review, we found that these problems ranged from threatened intrusion on wetlands to citizen opposition. For example, one proposed highway construction project we reviewed would have cut through a low-income housing project undergoing renovation with federal funds. We also found that demonstration projects tend to have a slow rate of obligation; in 1991, only 36 percent of funding authorized for demonstration projects 4 years earlier had been obligated. Indeed, funds for demonstration projects may never get obligated; for 22 of the 66 projects we reviewed, none of the authorized funds (\$92 million) had yet been obligated, even though the projects had been authorized 4 years earlier. There is no provision for recapturing or redistributing the demonstration projects' budget authority to other programs, and thus there is no guarantee that the authority will ever be used for either demonstration projects or other transportation needs.

A final concern with demonstration projects is that in addition to being costly and offering little return on investment, the projects tend to draw funds away from major federal-aid highway programs such as Interstate Maintenance, the National Highway System, and the Surface Transportation Program. Because demonstration projects are exempt from obligation limitations, the annual obligation limitation must be lower than it would be otherwise. Moreover, when the obligation limitation is applied to states' apportionments, demonstration projects emerge unscathed. If demonstration projects were similarly subject to the obligation limitation, states

⁴Highway Demonstration Projects: Improved Selection and Funding Controls Are Needed (GAO/RCED-91-146, May 28, 1991).

would have more flexibility to target obligational authority to their core federal-aid programs.

In our 1991 report, we raised a series of possibilities for improving the current approach to selecting and funding demonstration projects. As you will see on Attachment 2, we would like to outline a few of them today. One possibility for improving project selection would be to authorize only those projects that are already incorporated in existing transportation plans. Turning to funding policy, we noted that one possibility would be to finance demonstration projects through existing federal-aid highway program categories. In addition, we recommended that the Congress consider instituting a "use-it-or-lose-it" demonstration project provision requiring the cancellation or redistribution of federal funds for any demonstration projects that remain inactive 4 years after their authorization.

LITTLE INITIAL USE OF ISTEA FUNDING FLEXIBILITY

ISTEA provided unprecedented opportunities for states and local governments to use federal funds flexibly for highway, mass transit, or nontraditional projects, such as HOV lanes and ridesharing programs. An estimated \$80 billion of ISTEA's total \$155 billion authorization may be used flexibly. To date, however, our ongoing work has found that states and local governments have made limited use of ISTEA's funding flexibility provisions. In fiscal year 1992, less than 3 percent of flexible federal-aid highway funds (\$319 million) were used to finance mass transit and nontraditional projects and about 3 percent of flexible mass transit capital funds (\$31 million) were used to finance nontraditional projects.

USE OF FUNDING FLEXIBILITY SPURRED BY AIR QUALITY CONCERNS

Where funding flexibility has been exercised, it has largely been concentrated in the Congestion Mitigation and Air Quality Improvement (CMAQ) program—an FHWA program designed to address air quality problems. Approximately 50 percent of CMAQ's \$340 million in total obligations has financed mass transit and nontraditional projects. Even within the CMAQ program, the greatest use of funding flexibility was concentrated in five states that accounted for about 75 percent of the CMAQ cross-modal investments.⁵

Traffic congestion and air quality seem to be playing an important role in funding flexibility decisions. For example, CMAQ funds have financed mass transit and nontraditional projects in areas experiencing severe congestion and air quality problems, such as the Northeast. The funds are being used to finance such projects as HOV lanes, bus purchases, and transit passenger facilities such as bus shelters, each of which qualifies as a transportation control measure under the Clean Air Act Amendments of 1990. There are a number of reasons why congestion and air quality will likely continue to exert a major influence over decision makers' choices to use funds flexibly. First, 70 percent of peak hour urban Interstate travel in 1991 was under congested conditions. Second, 38 states have nonattainment areas—that is, areas that do not meet national air quality standards for at least one pollutant. Finally, in 1991, 6 out of 10 people in the U.S. lived in nonattainment areas.

HINDRANCES TO FUNDING FLEXIBILITY

Although congestion and air quality are key considerations in the decision-making process, a variety of other factors may hinder states and localities from thinking and acting cross-modally. For example, some state departments of transportation have not historically had a large involvement with mass transit programs and therefore may be reluctant to transfer funds for nonhighway uses. Local as well as state officials we talked to agreed that adapting to ISTEA's changes would not occur overnight. In addition, not all state and local funds can be used flexibly for matching fund purposes. In 1991, 35 states restricted the use of their motor fuel tax revenues to highway or bridge use only; therefore, about \$13.5 billion out of total state motor fuel tax collections of \$19.3 billion could not be considered for mass transit projects. Finally, highway and mass transit infrastructure needs continue to exceed available resources. Officials from all five states we visited expressed concern about their ability to meet infrastructure needs. As an official from one state we visited noted, any new money received from ISTEA was not enough to cover the tremendous backlog of projects in the pipeline. As a result, this state official believed use of funding flexibility would be discouraged.

⁵ New York, New Jersey, Massachusetts, Illinois, and Virginia.

IMPROVED TOOLS NEEDED TO SUPPORT CROSS-MODAL INVESTMENT DECISIONS

Rather than focusing on only one form of transportation at a time, ISTEA encourages an intermodal approach to dealing with transportation issues. States and localities are expected to consider all modes of transportation in developing transportation plans. However, they may need help in accomplishing these goals. We reported in April 1992 that DOT could better assist state and local governments by developing a common basis for comparing and evaluating projects in various transportation modes—highway, mass transit, or some combination.⁶ Such criteria would provide a common basis for quantifying a projects ability to meet mobility, environmental quality, cost-effectiveness, safety, and social and economic objectives. Current highway and mass transit selection criteria do not facilitate such comparisons and choices. We recommended that DOT develop cross-modal comparison criteria to better assist state and local decision makers in identifying those projects, regardless of mode, that most effectively deal with congestion and air quality problems. Such criteria have not yet been developed even though state and local officials we talked to continue to believe that such criteria are necessary for making investment decisions.

As we reported in December 1992, DOT could also better assist state and local decision makers by supporting the development of methodologies for data collection and analysis to compare projects.⁷ Our ongoing work focuses on that need in one area—the capacity of existing analytic tools to determine the air quality impacts of transportation projects. Although methods and models exist for forecasting travel demand in urban areas and for identifying emissions rates of various vehicle types, the state of the art in evaluating air quality impacts of transportation projects is not well advanced. In general, travel demand models were originally developed some 20 to 30 years ago to analyze the need for new or modified highway facilities. Because these models often do not incorporate or fully recognize such factors as vehicle speed or type, they are now ill-suited to be used to analyze the air quality impacts of transportation projects. Officials from all 10 states and 9 metropolitan planning organizations (MPO) we contacted cited problems in evaluating the air quality impacts of transportation projects with existing information and models. In fact, one MPO we visited expressed such concerns over existing techniques and tools that it had deferred use of CMAQ funds until it had' more confidence in determining the emission reduction benefits of CMAQ proposals.

A mechanism to collect data and develop methodologies to help states and localities address the above problems exists through DOT's Office of Intermodalism and Bureau of Transportation Statistics. These offices were created to develop and disseminate transportation data and provide technical assistance to states and localities. The development and dissemination of criteria, methods, and models under the leadership of these offices could assist state and local decision makers not only in comparing projects in different transportation modes but also in evaluating the projects' impact on such objectives as air quality. As we reported in December 1992, depending on the success these new offices have in fostering an intermodal approach, DOT may also need to consider other organizational changes such as creation of a Surface Transportation Administration to encompass the missions currently performed by separate rail, highway, and transit agencies. Assistance to states and localities will be critical as they identify the mix of projects, regardless of mode, that address problems such as congestion and poor air quality, while developing an intermodal transportation system.

CONCLUSIONS

Cuts of the magnitude needed to eliminate the shortfall in the Highway Trust Fund will work counter to efforts to stimulate the economy and spur long-term infrastructure investment. A number of strategies could be employed to deal with the shortfall, but many of these approaches would do nothing more than mask the imminent problem. On the basis of January 1993 assumptions and expectations, the solvency of the highway account could be ensured and apportionment cuts prevented by extending the 2.5-cent fuel tax currently supporting deficit reduction and applying a substantial portion of it to the highway account starting in fiscal year 1996 and continuing through fiscal year 1999.

Since transportation needs far outstrip available resources, federal funds should be targeted to the most significant transportation problems facing the nation. While

⁶ *Transportation Infrastructure: Urban Transportation Planning Can Better Address Modal Tradeoffs* (GAO/RCED-92-112, Apr. 2, 1992)

⁷ *Transportation Issues* (GAO/OCG-93-14TR, Dec. 1992).

some existing demonstration projects could be classified as nationally significant, others do not even appear on a state transportation plan. Therefore, improvements in processes for selecting and funding such projects could better target limited resources. For example, selection criteria might require that the projects' significance be demonstrated through their inclusion in existing transportation plans. In the area of funding, if a demonstration project remains inactive 4 years after its authorization, cancelling it or redirecting its authorized funds will help to ensure that the funds are effectively spent.

ISTEA changed the environment in which surface transportation choices are made by providing states and local governments with an unprecedented opportunity to use federal funds flexibly for highway, mass transit, and nontraditional projects. To date, however, the use of highway and mass transit funding flexibility has been limited. At the federal level, DOT can help to address some of the barriers to the use of flexible funding. For example, it can assist states and local governments both by developing cross-modal comparison criteria and by fostering development of improved analytic tools for assessing the impacts of transportation investment choices.

Mr. Chairman, that concludes my testimony. I would be happy to respond to any questions that you or other members of the subcommittee might have.

WELCOMING SENATOR HATFIELD

Senator LAUTENBERG. I am delighted to welcome Senator Hatfield. Senator, we have just started with the first of the witnesses. Is there anything that you want to say?

Senator HATFIELD. No, thank you.

Senator LAUTENBERG. Next, Mr. Carlson, we would like to hear from you.

STATEMENT OF DEAN CARLSON

Mr. CARLSON. Thank you, Mr. Chairman, members of the committee. Thanks for the opportunity to testify on the status of our efforts to implement the ISTEA and the other related issues. It is a pleasure to have this opportunity to do this. I have brought with me some copies of a FHWA stewardship report titled "Putting ISTEA into Motion." I think maybe that is apt because I believe ISTEA stirred up the industry a little bit.

GENERAL IMPLEMENTATION

Overall, FHWA and our partners have obligated more than \$17.8 billion in Federal-aid highway funds in fiscal year 1992, including such exempt programs as the minimum allocation apportionment and demonstration projects, and the rest of the money made available to us. I could say that the old money was used the fastest, since the rules for that money were well known, but the congestion mitigation and air quality money and other new categories also went out quite well, which tells us that the philosophy of ISTEA is being accepted by the people that are going to put these projects into effect.

NATIONAL HIGHWAY SYSTEM

For FHWA's purposes, we believe the National Highway System [NHS] is a vitally important element of ISTEA and expect it to be the major focus of the Federal-aid program into the 21st century. This 155,000-mile system will consist of about 4 percent of total rural and urban road and street mileage, but will carry over 40 percent of vehicle travel and more than 70 percent of heavy truck travel. The NHS will serve most cities over 25,000, in addition to

strategic military needs, major ports, airports, public transit facilities, and international border crossings.

We are expecting the States to submit their proposals for the NHS by April 30, 1993, to ensure that we meet the ISTEA-established date of December 18 for submitting the proposed NHS to Congress and implementing this critically important program. This will be a complete package to Congress in December that hopefully will have information that will help us sell this program across the country. The NHS package will include such things as design standards, possible options for funding, and possibilities for specific marking or identification.

FUNDING FLEXIBILITY

One of the fundamental concepts that ISTEA seeks to foster is funding flexibility and transferability. Taking advantage of these provisions, States transferred nearly \$1.1 billion of their apportionments for certain highway programs to other highway categories. In fiscal year 1992 and the first 5 months of fiscal year 1993, \$331 million of fiscal year 1992 funds from STP and CMAQ programs were used for transit projects. In fact, a majority of the CMAQ funds were not spent for traditional highway projects, but included such things as carpools, and bicycle and pedestrian facilities.

INTELLIGENT VEHICLE/HIGHWAY SYSTEMS (IVHS)

Mr. Chairman, you particularly have been instrumental in helping us advance the IVHS Program. For that we thank you very much. A solid foundation has been laid through the completion of IVHS America's strategic plan for intelligent vehicle/highway systems in the United States and the Department of Transportation's strategic plan report to Congress.

Over the spring and summer, we hope to develop a program plan for IVHS which will become the critical path to get to where we want to go with this program. The R&D program has grown from about \$5 million in 1991 to about \$40 million in 1993, and this we expect to continue and hope it will give us the information we need to have a very effective program.

The President has proposed, in his rebuild American initiative, an increase from \$70 million per year starting in fiscal year 1994 up to \$100 million in fiscal year 1998 for the IVHS Program. A portion of the additional funding would be used for defense technology conversion to support the development of IVHS applications of advanced technologies created by defense firms and the national labs.

I have a current IVHS status report, which I can also supply to the committee, that gives a good outline of where we are at the moment. If anybody would like one, we could provide one.

STATEWIDE AND METROPOLITAN PLANNING

Additional implementation activities have been, in my view, a real challenge, because this bill is different. I have outlined our efforts in a written statement for implementing ISTEA in the areas of statewide and metropolitan planning, management systems, and highway and motor carrier safety.

As an example, we are conducting a series of workshops jointly with the surface transportation policy project, a representative of which will testify on the second panel. We also have worked very hard to disseminate information on ISTEA through an electronic bulletin board and we issued Federal Register notices on April 23, 1992, and January 4, 1993, with complete information for our partners on how they should use the provisions of ISTEA.

ECONOMIC STIMULUS PROGRAM

Mr. Chairman, the President has proposed an economic stimulus package, which has been passed by the House as H.R. 1335, that would let us move forward with this program at a faster rate. It would also give us additional ability to induce employment and increase funding available for maintaining the conditions and performance of our Nation's highways. The increase in the obligation limitation would result in job growth in the near term because it would be used for highway projects that are ready to go.

ISTEA OUTLOOK FOR FISCAL YEAR 1994

And the good news, I believe, is that our 1994 budget will include a long-term investment program that basically is full funding for ISTEA. In order to do that, as Mr. Mead said, we need the 2.5-cent motor fuel tax currently being paid into the general fund to be extended after October 1995 and put into the highway trust fund.

The administration's message, I believe, is that increased highway investment means smarter spending of dollars, not only spending more dollars. Because if we are to take advantage of the flexibility provisions of ISTEA, we cannot be scrapping over the money on the table. It will be much easier to use those flexibility provisions if we have full funding. We are also doing things which make the best use of current surface transportation dollars, such as the National Quality Initiative which holds tremendous potential for improved planning, design, and construction at the least annual cost.

In conclusion, I want to express my appreciation to the members of this subcommittee, all of whom have been very supportive of the objectives of ISTEA, and to share with you my pride in the accomplishments of the FHWA's employees during the first year of ISTEA's implementation. I can assure you that under the leadership that has been announced for our agency, this dedication and outstanding level of effort is going to continue.

I would be happy to answer questions later.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much, Mr. Carlson. We have your complete statement and it will be made part of the record.

[The statement follows:]

STATEMENT OF E. DEAN CARLSON

Mr. Chairman, Members of the Subcommittee, thank you for the opportunity to testify before the Subcommittee on the status of our efforts to implement the Intermodal Surface Transportation Efficiency Act (ISTEA) and related issues.

As you know, the Federal Highway Administration (FHWA) values its positive relationship with this Subcommittee. We look forward to working with you as we chart the progress of this landmark surface transportation legislation.

GENERAL IMPLEMENTATION

By enacting the ISTEA, Congress set into motion an array of surface transportation programs, policies, and increased resources for surface transportation. In the first year of the Act, 1992, the FHWA, along with other Department of Transportation modal administrations and our many other partners, began to implement the Act's provisions.

In this regard, I would like to provide the Subcommittee with a pamphlet the FHWA prepared describing our implementation activities. The pamphlet is entitled "FHWA Stewardship Putting ISTEA into Motion" and it highlights our major accomplishments during the first fiscal year of the legislation.

Overall, the FHWA obligated more than \$17.8 billion in Federal-aid highway funds in fiscal year 1992, including exempt programs such as the minimum allocation apportionment and demonstration projects. Fiscal year 1992 obligations include more than \$4.4 billion for Interstate programs, \$3 billion each for the National Highway System and Surface Transportation Program (STP), \$1.8 billion for the Bridge Program; and \$340 million for the new Congestion Mitigation and Air Quality Improvement (CMAQ) Program.

NATIONAL HIGHWAY SYSTEM

The National Highway System (NHS) is a vitally important element of the ISTEA and is expected to be the major focus for the Federal-aid highway program into the 21st century. The 155,000 mile system will consist of about 4 percent of total rural and urban road mileage but will carry over 40 percent of vehicle travel and more than 70 percent of heavy truck travel. The NHS is expected to serve nearly all urban areas with a population of at least 25,000, in addition to meeting strategic military needs, and serving major ports, airports, public transit facilities and international border crossings.

To ensure that the national objectives of the NHS are achieved, the FHWA has played a strong leadership role in working with the States and Metropolitan Planning Organizations (MPO's) in our combined effort to develop the proposed NHS. Although some routes must be included in the NHS (i.e., the Interstate System, the Strategic Highway Network (STRAHNET), major STRAHNET connectors and high priority corridors) the States have considerable flexibility to propose additional routes.

The required functional reclassification of all public roads and streets is essentially complete and the States, in cooperation with local officials, are now identifying proposed routes for the NHS. States must submit these routes by April 30, 1993, to ensure that we meet the ISTEA-established date of December 18, 1993, for submitting the proposed NHS to Congress and implementing this critically important program.

FUNDING FLEXIBILITY/TRANSFERABILITY

One of the fundamental concepts that the ISTEA seeks to foster is funding flexibility and transferability. The Department and the FHWA have encouraged State and local governments to utilize the ISTEA funding flexibility and broad project eligibility provisions. Taking advantage of these provisions, States transferred almost \$1.1 billion of their apportionments for certain highway programs to other highway categories.

Similarly, during fiscal year 1992 and the first 5 months of fiscal year 1993, \$331 million of fiscal year 1992 funds from the STP and CMAQ Programs were made available for transit projects. In fact, the majority (60 percent) of CMAQ funds have been obligated for projects other than traditional highway projects, including car-pools and bicycle and pedestrian facilities, that improve air quality.

The CMAQ and STP enhancement programs have shown rather slow rates of obligation, in part because States are uncertain about project eligibility and program structure in these new areas. The FHWA has therefore issued guidance to the States to address these uncertainties and ensure the successful implementation of the CMAQ and transportation enhancement provisions. In October, the FHWA and the Environmental Protection Agency issued a three-phase schedule for implementing the CMAQ program, and in January the FHWA published detailed guidance listing eligible transportation enhancement activities, which include historic preservation, scenic enhancement, and wetland mitigation projects. We anticipate that this

guidance will serve as a catalyst for increased use of ISTEA's flexible funding provisions.

Under certain conditions, the ISTEA also permits a State to use toll revenues as a credit (soft match) toward the non-Federal share of all programs authorized by title 23 and the ISTEA. The credit is based on the amount of a toll authority's revenue used on projects it funds itself to build or improve public highways. This use of toll revenues as "soft-match" is another example of enhanced ISTEA flexibility.

In fiscal year 1992, five States established "soft-match" credits totalling about \$676 million. In New Jersey, for example, a credit amount of over \$192 million was approved for fiscal year 1992. Although New Jersey has not yet submitted a credit amount for fiscal year 1993, it can continue to use the fiscal year 1992 credit. New Jersey's soft match credit will permit it to run its entire Federal-aid highway and Federal transit programs with a 100 percent Federal share in 1993.

INTELLIGENT VEHICLE-HIGHWAY SYSTEMS

The FHWA stressed the promise for greater innovation that the ISTEA provides for Intelligent Vehicle-Highway Systems (IVHS) and other research and technology programs. We continue to aggressively implement the national IVHS program.

A solid foundation has been established through the completion of IVHS AMERICA's "Strategic Plan for Intelligent Vehicle-Highway Systems in the United States" and the Department of Transportation's "IVHS Strategic Plan Report to Congress." Over the course of this spring and summer, we will be working cooperatively with IVHS AMERICA, our federal advisory committee, to further develop these strategic plans into a National IVHS Program Plan which will describe the research, development, testing, and deployment guideline activities needed to reach the point of deployment of IVHS user services.

We are currently developing the system architecture for an integrated, nationwide IVHS deployment. This involves a far reaching, consensus building effort. A series of regional briefings are being considered as we go through the process.

A full range of priority IVHS research and development (R&D) activities are now underway with projects sponsored by the FHWA, the Federal Transit Administration (FTA), and the National Highway Traffic Safety Administration (NHTSA). The IVHS R&D funding has grown from about \$5 million in fiscal year 1991, to about \$25 million in fiscal year 1992, and to \$40 million in fiscal year 1993. This is expected to continue to increase.

Under the IVHS Corridors Program created by the ISTEA, we are examining six priority corridors for operational tests which will be negotiated each year; in the northeast, a priority corridor runs along I-95 from just north of Washington to Connecticut.

In the Rebuild America initiative, the President proposed IVHS increases ranging from \$70 million per year starting in fiscal year 1994 up to \$100 million in fiscal year 1998. A portion of this additional funding would be used for defense technology conversion to support the development of IVHS applications of advanced technologies created by defense firms and the national labs. This funding would be used in cooperative IVHS partnerships with the Department of Defense's Advanced Research Projects Agency programs and with the private sector.

We have also initiated an ambitious automated highway systems (AHS) prototype program which will be funded under the proposed Rebuild America program. By eliminating human error, an automated highway could provide a nearly accident-free driving environment. Automated vehicle control could increase by 2 or 3 times the capacity of present day facilities. Thus, the AHS presents an exciting opportunity to gain dramatic congestion and safety benefits from IVHS technology. As a first step for AHS, we expect to use current IVHS R&D funds to let contracts in May and June 1993 to conduct studies aimed at examination of critical technical and systems issues. We also plan to work with one or more consortia to meet the ISTEA requirement to demonstrate a prototype AHS in 1997 and to further develop and test other promising concepts.

OUTREACH ACTIVITIES

We have taken the partnering aspects of ISTEA very seriously by creating and improving ties with our partners at every level, both within and outside of Federal, State, and local governments; helping the MPO's; giving a voice and vision to the diverse public and private interests affected by the ISTEA; encouraging minority and women business enterprise; and working with our long-established partners like the American Association of State Highway and Transportation Officials. In addition, we have held hundreds of outreach and informational meetings with many diverse groups throughout the country since the ISTEA was enacted.

This outreach will continue. In order to ensure their widespread distribution, interim ISTEA guidance memoranda were compiled and published in two Federal Register notices issued on April 23, 1992, and January 4, 1993, and we intend to issue additional ISTEA implementation publications in the future. Early in 1992, we established a conference on the FHWA Electronic Bulletin Board System (FEBBS) to help disseminate guidance on implementing the ISTEA. The ISTEA conference includes nearly 300 questions and answers and 50 policy memoranda on ISTEA implementation, with information from both the FHWA and NHTSA. When the ISTEA conference was opened to the public, the number of calls to FEBBS each month doubled from 2,500 to 5,000. Thus, FEBBS has been an essential component in our efforts to disseminate information and assist State and local officials and MPOs in implementing the ISTEA.

STATEWIDE AND METROPOLITAN PLANNING

ISTEA's new planning processes were initiated on March 2, 1993, under proposed rules for both statewide and metropolitan planning. In the next several weeks, the FHWA and FTA will hold 4 meetings in Atlanta, Kansas City, Philadelphia, and San Francisco to obtain public input on the planning and management systems rulemakings. These ISTEA-fostered changes will result in better transportation investment decisions based on improved processes, approval mechanisms, project prioritization, and life-cycle costing.

MANAGEMENT SYSTEMS

We have also been actively assisting the States in developing the management systems provided for in the ISTEA in the areas of highway pavement of Federal-aid highways, bridges on and off Federal-aid highways, highway safety, traffic congestion, public transportation facilities and equipment, and intermodal transportation facilities and systems. These six systems will guide the States in making prudent decisions when using their limited resources to improve the efficiency of the nation's transportation system. Rather than imposing overly prescriptive Federal requirements, the proposed regulations will designate the desired end goals of the systems, thus granting the States and other affected groups greater flexibility in developing systems which are tailored to their specific needs.

In addition to holding public meetings on the traffic congestion, public transportation, and intermodal management systems, we published a proposed rule on the systems on March 2, 1993, seeking additional information from the public. Because no final regulations have yet been issued, progress by the States in implementing these management systems has been varied. Several States have appointed committees to oversee the development of the systems and some have already budgeted funds for this development, in anticipation of the issuance of the regulations.

MOTOR CARRIER SAFETY ACTIVITIES

The FHWA implemented the reauthorization of the Motor Carrier Safety Assistance Program (MCSAP), and we continue to work closely with the States through the Commercial Vehicle Safety Alliance to expand the truck safety inspection programs at increased funding levels and to take advantage of innovative features that were included in ISTEA. During fiscal year 1992, all but 2 States and 2 Territories participated in the MCSAP. The program supports approximately 2,800 State personnel nationwide who perform 1.6 million commercial motor vehicle inspections annually.

The FHWA also made progress toward improving uniformity in motor carrier vehicle registration and fuel tax reporting through the International Registration Plan (IRP) and the International Fuel Tax Agreement (IFTA), respectively. To date, all of the contiguous 48 States except for Delaware, New Jersey, and Rhode Island are members of the IRP, and 21 States belong to IFTA. Five additional States (Georgia, Illinois, Mississippi, New Mexico, and Tennessee) are planning to join IFTA. Those States participating in the Regional Fuel Tax Agreement (RFTA) as of January 1, 1991, (Maine, New Hampshire, and Vermont) are not required to join the IFTA. As mandated by the ISTEA, the FHWA has established a working group to assist the States in complying with the September 30, 1996, deadline for membership in the IRP and IFTA. This working group is charged with providing technical assistance to the States and resolving disputes among the States participating in the plan. Full participation in the IRP and IFTA will save industry \$1 billion annually in the administrative costs of complying with varying State registration requirements and fuel taxes.

ECONOMIC STIMULUS

House-passed H.R. 1335, the fiscal year 1993 Emergency Supplemental Appropriations bill, contains generally the same highway provisions as proposed by the Administration in its economic stimulus program. Under H.R. 1335, the fiscal year 1993 Federal-aid obligation limitation would be increased by \$2.976 billion above the current limitation of \$15.327 billion. Thus, the new obligation limitation would be \$18.303 billion.

The increase in the obligation limitation, which would be distributed to all the States based on existing formulas, is an element of the President's program to emphasize investment and to jump-start the economy. The overall impact of the additional obligation limitation would be to reduce unemployment and to increase the funding available for maintaining the conditions and performance of our Nation's highways.

The additional obligation limitation would result in job growth in the near-term because it would be used for highway projects that are ready to go. The Office of Management and Budget estimates that the additional obligation limitation would support 72,000 additional direct and indirect highway construction jobs with more than 13,000 of these jobs created before September 30 of this year. Unemployment in the construction industry in general is over 15 percent nationally, and even higher in many States. The transportation component of the economic stimulus proposal would thus serve as a key source for job growth in the construction industry and related businesses.

FISCAL YEAR 1994 LONG-TERM INVESTMENT PROGRAM

While the full details of the fiscal year 1994 Budget have not been released, the Administration proposal will provide for full ISTEA funding of the Federal-aid highway program. In fiscal year 1994, the obligation limitation would be \$18.398 billion, or about \$2.7 billion more than the baseline estimate of \$15.7 (the pre-stimulus fiscal year 1993 enacted budget plus inflation). When programs that are exempt from the obligation limitation are considered, the total Federal-aid highway program will be about \$20.5 billion. This level of funding is consistent with the Administration's vision of increased public investment to improve productivity.

Full ISTEA funding is also important for the transferability and flexibility provisions to work to their fullest extent. The multi-modal availability of funds and expanded project eligibility have resulted in greater competition for ISTEA funds. Transferability and innovation could suffer in a climate of restrictive spending. In many cases, competition for funds may work against newer programs, especially when they are competing with existing projects which are "on-the-shelf" and ready to go. While the FHWA has done as much as possible to create a level playing field, the amount of funds available is probably the single biggest factor in ensuring that new programs are successfully delivered.

Relative to the future investment proposals, full ISTEA funding would result in the following investment levels:

- Fiscal year 1995: Obligation limitation, \$18.5 billion; Federal-aid total, \$20.7 billion;
- Fiscal year 1996: Obligation limitation, \$18.5 billion; Federal-aid total, \$20.9 billion;
- Fiscal year 1997: Obligation limitation, \$18.6 billion; Federal-aid total, \$21.0 billion.

Thus, under the Administration's highway investment proposal, the total obligation levels for fiscal year 1994-97 would be \$8.6 billion higher than the baseline levels (which are the fiscal year 1993 enacted levels adjusted for inflation). When compared to baseline funding, the Administration's highway investment proposal will result in:

- Decreased deterioration of the highway system by supporting more highway resurfacing, restoration, and rehabilitation projects. These projects reduce pavement deterioration and the resulting higher costs of major reconstruction projects.
- Less congestion. We have estimated that the congestion cost is about \$39 billion annually in urban areas with populations larger than 1 million.
- Increased highway safety. The Nation's annual cost of motor vehicle accidents including deaths, injuries, and property damage is approximately \$137 billion. In 1992, about 39,200 people were killed in traffic related accidents. Although this is a tragic loss of human life, we do note that this is the lowest fatality toll in 30 years and represents a 16 percent drop in fatalities over the past 4 years. The national highway fatality rate now stands at about 1.8 deaths per 100 million vehicle miles of travel. This is the lowest ever, just half of what it

was less than 20 years ago, and one of the lowest rates in the world. But we can and must do more. In addition to the FHWA's ongoing programs to make the highway environment safer, we are working closely with NHTSA to implement the safety belt and motorcycle helmet use provisions of the ISTEA. The ISTEA's sanctions for failure to enact mandatory belt and helmet laws should expedite implementation in all States of these very important safety measures; to date, 42 States have safety belt laws in effect, 27 have helmet laws. In addition, we hope to make our arsenal of highway safety measures even more effective through the highway safety management systems.

With respect to taxes, full ISTEA funding for highways is based on the extension and transfer to the Highway Trust Fund of the 2.5 cent motor fuel tax currently being paid into the General Fund of the Treasury. Two cents of this amount would be dedicated to the Highway Account and the remaining one-half cent would be dedicated to the Mass Transit Account of the Highway Trust Fund. Without such additional financing, we project the Byrd Amendment would trigger a reduction in apportionments as early as fiscal year 1995. Under the Byrd Amendment, as amended, unfunded authorizations at the end of the fiscal year in which the apportionment is made must be less than the revenues anticipated to be earned in the following 24-month period.

The Administration's message is also that increased highway investment means smarter spending of dollars, not only spending more dollars. The FHWA is focusing on those high pay-off measures which make the best use of current surface transportation dollars, systems, and techniques. Such programs include the IVHS, the six management systems required by ISTEA, and the National Quality Initiative, which holds tremendous potential for improved planning, design, and construction at the least annual cost. Last November, the FHWA along with leaders in the transportation industry pledged to make a continuing commitment toward the production of quality products and services through a partnership approach. We are continuing this commitment through regional workshops.

CONCLUSION

While we have completed just one year of this six year landmark surface transportation legislation, I believe we have established a strong foundation on which to build the future of our nation's surface transportation program. I want to express my appreciation to the Members of this Subcommittee, all of whom have been very supportive of the objectives of the ISTEA, and to share with you my pride in the accomplishments of all FHWA employees during the first year of the ISTEA's implementation. I can assure you that this dedication and outstanding level of effort will continue. I would be happy to answer any questions you may have.

STATEMENT OF FRANCIS B. FRANCOIS

Senator LAUTENBERG. Mr. Francois, we welcome you here, and we will be pleased to hear from you.

Mr. FRANCOIS. Thank you, Mr. Chairman. I am very pleased to be here. I am Frank Francois, executive director of the American Association of State Highway and Transportation Officials.

In my oral testimony, I would like to concentrate on three areas: funding, flexibility, and possible changes to the ISTEA.

FUNDING

With respect to funding, it is recognized that the authorized levels of the ISTEA hold great promise to helping to meet the needs of America's transportation system. But the failure to fully fund those authorizations for both highway and transit programs is seriously affecting the programs of our States, local governments, and transit agencies. Many of them anticipated full funding and, as a result, they have had to change their programs over the last several months when the full funding did not actually materialize.

These adjustments are painful and they also have created other problems that I will refer to.

Now, when looking at the funding authorized in the bill, we do need to keep in mind, however, that it is not a cure-all for all of America's transportation problems. This is made clear by the January 1993 report to Congress by the U.S. DOT, titled "The Status of the Nation's Highways, Bridges and Transit."

In that document, it points out that for our transit programs, we should be operating at a level of at least \$3.9 billion in capital each year just to maintain condition and performance at current levels, and at \$6.6 billion if we are to improve those. And all of those numbers are on the assumption that the transit share of ridership will stay at about its current level. If we have a much larger use of transit, you would need much more capital.

The ISTEA approaches those levels, but does not really fund them.

With respect to highways, this same 1993 report advises us that in 1991, all levels of government, collectively, spent \$81.2 billion on 3.9 million miles of streets, roads, and highways. Of that, about \$36.1 billion was spent for highway and bridge capital improvements. The Federal share of that was about 41 percent in 1991, compared to 44 percent in 1989.

As to needs, this report indicates that we should be spending \$51.6 billion, not \$36.1 billion, just to maintain conditions and performance. If we want to bring our highway performance levels up to where we believe they ought to be, capital expenditures should be about \$67.3 billion per year.

So, even at full funding, the ISTEA would fall short of meeting the traditional Federal role for the capital needs of both transit, highways, and bridges.

But full funding has not been achieved. Thus far, in 1993, highway funding has fell some \$2.3 billion below authorizations, and transit about \$1.4 billion below for that mode. We are very encouraged about the President's transportation supplemental appropriations bill, and we hope it passes the Congress.

The \$2.97 billion in additional obligation authority for the highway program, in effect, would fully fund highways for fiscal year 1993. And the \$712 million additional for transit would restore a little over one-half of the underfunded portion of this mode.

We strongly support the approval of that bill.

Looking to future years, in recent testimony, Secretary Peña has stated it is the intention of the President to fully fund the highway portion of ISTEA in fiscal year 1994 and later years. And, to help fund that, to return the 2.5-cent motor fuel tax to the highway trust fund, as Mr. Mead has indicated here this morning, would be one way to solve the highway trust fund balance problem. We strongly support that action also.

Now, I mentioned other problems when ISTEA is underfunded. Among these are that intense competition is then created between the highway and transit modes to claim available funding for their respective modes. In addition, because of the many hold harmless provisions and other features of the ISTEA distribution formulas, when underfunding occurs, the distribution intended by the Congress is disrupted, creating relative winners and losers among the States. This is not a good situation either for Congress or for the States. The way to solve all of that is with full funding.

FLEXIBILITY

Let me now turn to flexibility. We believe that the flexibility features of the ISTEA generally are performing as we would have expected. It is early, obviously, but many States have taken advantage of the flexibility provisions in the bill to transfer funds from one highway category to another highway category, for example. We have provided to you a cable provided to us by the Federal Highway Administration for the period from October 1, 1992, through March 1993, that shows some \$216 million in highway funds that have been transferred from one category to another.

Since 1991, we have seen a number of transfers of highway funds to transit. We see none in the other direction, and we know of none being planned. As of February 28, 1993, some 23 States either have had money transferred from the Federal Highway Administration to the FTA to a total of \$436 million. In a survey we did in December, we find that some 11 States are planning additional transfer of highway funds into the STP in 1993 of 294 million dollars' worth, and some 17 States are planning to transfer STP funds to transit projects in 1993, for a total of about \$102 million.

Now, many of these are projects that have been in the pipeline. We would anticipate that as the new planning processes go into place and as the new regional and State transportation improvement programs are developed that we will be able to much better assess this. But, overall, we think that the transfer is working.

CHANGES TO ISTEA

And, finally, Mr. Chairman, with respect to changes in the ISTEA, our belief is that this bill is only 15 months, and is really still an infant. It is the beginning step in a generational change in our Nation's surface transportation programs. There are many components that are yet to be put fully into effect and, as a result, we believe it is premature to talk about changes in the bill right now—at least major structural changes.

We anticipate that AASHTO may have some specific recommendations and some States may have some over the coming months. But, overall, we think the bill needs to be given a chance to operate over a period of 2 or 3 years before we really consider major changes.

Thank you, Mr. Chairman.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much, Mr. Francois. We have your complete statement and it will be made part of the record.

[The statement follows:]

STATEMENT OF FRANCIS B. FRANCOIS

Mr. Chairman, I am Francis B. Francois, Executive Director of the American Association of State Highway and Transportation Officials, commonly called AASHTO. AASHTO is concerned with all of the major modes of transportation, including highways, transit, rail, aviation and water transportation.

On behalf of AASHTO, I am pleased to respond to your invitation asking for our views on implementation of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). In your invitation you stated the purposes of this hearing to include:

examination of the flexibility provisions of ISTEA, including the extent to which highway and mass transit funds have been used across-modal lines and how such transfers have affected urban versus rural highway and transit decisions; whether there are resource constraints that would limit future investment opportunities; and the need for changes to the ISTEA, including exploring the federal role in removing any obstacles to effective and flexible use of surface transportation funding. Let me address each of these subjects, particularly as they relate to the highway program.

RESOURCE CONSTRAINTS

Given that funding of the ISTEA is an issue of overriding concern and that this hearing is before the Senate Appropriations Subcommittee on Transportation and Related Agencies, let me first turn to resource constraints.

The authorized levels of the ISTEA, \$120.9 billion for Title I (highways), \$1.63 billion for Title II (safety), \$31.5 billion for Title III (transit), \$.54 billion for Title IV (motor carrier safety), and \$.84 billion for Title VI (research), promise vitally needed support to America's transportation system. But to fulfill that promise, full funding of the authorized levels is necessary. Unfortunately, such full funding did not occur for fiscal year 1992, and thus far for fiscal year 1993.

The failure to fully fund the authorizations of the ISTEA, for both highway and transit programs, has seriously affected the ability of states, local governments and transit agencies to meet their transportation needs. Anticipating full funding, many of them proceeded to establish their programs on this basis and have since had to make adjustments. While making such adjustments disrupts orderly fiscal and program planning, when the ISTEA is underfunded other problems are also created.

While the new funding promised by the ISTEA is very important, it needs to be remembered that even with this funding highway and transit needs of our nation will not be fully met. This is made clear by the January, 1993 report to Congress by the U.S. Department of Transportation, titled "The Status of the Nations Highways, Bridges, and Transit: Conditions and Performance."

With respect to transit, the 1993 Status report states that the total transit expenditure for 1990 in our nation was \$19 billion, with \$14.7 billion for transit service and capital expenditures of \$4.3 billion. Turning to needs, the U.S. DOT report finds that over the period 1992-2011 the annual capital investment in transit from all sources should be at least \$3.9 billion to maintain conditions and performance at current levels, and \$6.6 billion to improve conditions and performance. Both capital expenditure levels include metropolitan expansions, and are stated in 1991 dollars with no allowance for inflation. As to what the \$6.6 billion level would accomplish, the report states that it would:

"(1) eliminate the backlog of bus and rail deficiencies; (2) maintain current transit market share; (3) add additional service to accommodate anticipated urban demand not included in the highway analysis; (4) improve transit stations to current standards; and (5) meet statutory requirements to serve disabled Americans."

As to highways, the 1993 Status report states that the total expenditure on highways by all level of governments in 1991 was \$81.2 billion, with \$36.1 billion of this being spent for highway and bridge capital improvements. The federal share of this \$36.1 billion was 41 percent in 1991, compared to 44 percent in 1989. As to the capital needs of the nations highways and bridges, the 1993 Status report finds that \$51.6 billion should be expended annually to just maintain conditions and performance, compared to the 1991 total of \$36.1 billion, and that if conditions and performance are to be improved to acceptable levels the annual capital funding should be \$67.3 billion.

As the 1993 Status report makes clear, even at full funding the ISTEA falls short of meeting the traditional federal role toward funding the capital needs of transit, highways and bridges. But full funding of the ISTEA is important, and is supported by AASHTO. An AASHTO resolution supporting full funding was approved last October, and a copy is being submitted to the record with this testimony.

Under the ISTEA, for fiscal year 1993 highway funding was to rise to \$20.478 billion, and transit funding was to rise to \$5.235 billion. As you, the members of the Appropriations Committee, well know, the appropriated levels for fiscal year 1993 fell considerably short of that amount. Federal-aid to highways was set at approximately \$18 billion, with transit funding set at only \$3.8 billion. Actual 1993 funding thus fell some \$2.3 billion below the authorizations for highways and some \$1.4 billion below for transit.

We are encouraged that the new Administration is seeking to supplement fiscal year 1993 transportation funding through the emergency supplemental appropriations bill. The \$2.97 billion in additional obligation authority for the highway pro-

gram contained in the Presidents bill would in effect fully fund the program for fiscal year 1993, and the \$712 million for transit would restore over half of the fiscal year 1993 underfunding for this mode. AASHTO strongly supports approval of this bill.

Looking to future years, in recent testimony Secretary Federico Peña has stated it is the intention of the President to fully fund the highway portion of the ISTEA in fiscal year 1994 and later years, and also to return the 2.5 cent motor fuel tax now devoted to deficit reduction to the Highway Trust Fund, effective in fiscal year 1995. Preserving the use of transportation user fees for transportation purposes has long been a policy of AASHTO. We believe that the return of the motor fuel tax to the Highway Trust Fund is critical if the Congress is to fully fund the transportation investments provided for in ISTEA.

I mentioned that when the ISTEA is underfunded, additional problems are created. Among these are that intense competition can be created between the highway and transit modes, to claim available funding for their respective modes. In addition, because of the many hold harmless provisions and other features of the ISTEA distribution formulas, when underfunding occurs the distribution intended by the Congress is disrupted, creating relative winners and losers among the states. All of these problems can be avoided with full funding.

In early December of last year, AASHTO issued "A Report on the Highway Program Capacity of State Highway and Transportation Departments, FY 1993-1996." Based on a survey of the 50 states, the District of Columbia and Puerto Rico, the report provided information on the states' ability to fully utilize the \$18 billion in federal-aid for highways provided under the Department of Transportation Appropriations Act (Public Law 102-88), and their ability to use additional highway funding if it should be made available.

I would like to share with you some of the comments we received from the states in this AASHTO survey, reflecting the states' concerns over the failure to fully fund the ISTEA:

"Congressional appropriation of less federal money than ISTEA authorized has substantially altered our approach to fiscal year 1993."

"The reduction of obligation limits below authorization levels in fiscal year 1992 has disrupted the accomplishment of our published construction programs, causing delays in both state and local infrastructure developments."

"The reduction in obligation authority from the amount authorized in ISTEA has severely hampered our fiscal year 1993 program."

Mr. Chairman and members of the Subcommittee, we strongly urge full funding of the ISTEA.

ISTEA FLEXIBILITY PROVISIONS

One of the features of the ISTEA is the high degree of flexibility allowed in the use of the federal funds authorized thereunder, including the possibility of transferring highway funding from one category to another, transferring highway funding for use on transit projects, and under certain prescribed circumstances the possibility of transferring certain transit funds for use on highways. The provisions for transferring highway funds included in the Act are of two basic types, the first requiring only the decision of the state and local governments to accomplish, and the second requiring agreement by the U.S. Department of Transportation. Transfers from transit to highways require that a specific set of conditions be met.

Since the ISTEA was signed into law in December, 1991, many states have taken advantage of the flexibility provisions to transfer funds from one highway category to another highway category. Attached is a copy of a table prepared by the Federal Highway Administration for the period from October 1, 1992 through March 30, 1993, showing that some \$216 million in highway funds have been transferred from one category to another.

In the time since December, 1991 we have seen a number of transfers of highway funds to transit use. To date, there have been no transfers of transit funds to highway use, and to our knowledge none are planned at this time.

The ISTEA makes transit capital projects eligible for funding under the Surface Transportation Program, and also in some cases eligible for funding under the National Highway System in the corridor of fully access-controlled NHS routes.

According to the Federal Highway Administration, as of February 28, 1993 the following amounts of ISTEA funds have been obligated for transit projects in 23 states:

Surface Transportation Program	\$54,600,000
Congestion Mitigation/Air Quality	277,000,000

Other programs	104,400,000
Total	436,000,000

The "Other" category of funding includes Interstate Highway Substitution Funds being used for other purposes, Minimum Allocation Urbanized funds, and Priority Intermodal Projects. Attached is a table from the FHWA indicating a state-by-state use of funds for transit projects.

The 1992 AASHTO survey leading to our December report did not seek to collect data on transit projects, since such projects in most cases are not administered by the states. But we did request information as to planned transfers of highway funds for transit use and vice versa, as permitted under the ISTEA. A total of 11 states reported they will transfer highway funds into the Surface Transportation Program in fiscal year 1993, for an estimated total of some \$294 million. A total of 17 states indicated they plan to transfer STP funds to transit projects in fiscal year 1993, for a total of about \$102 million. No states anticipate using transferred transit funds for highway projects.

The transfers that have occurred to date largely reflect the first year of implementation of the ISTEA, which rewrote the rules for the use of federal highway funds for transit and other projects. As a result, the transfers that have occurred might generally be considered as having been made for projects already "in the pipeline." As the new planning and flexibility provisions are applied to the regional and state Transportation Improvement Programs that must be in place by November, it will be easier to assess the impact of the new flexibility on the decision-making of state and local transportation officials.

In California, STP funds have been used for such purposes as the design and construction of a natural gas fueling station in Sacramento, replacement of storage tanks and bus yards in Santa Clara, the purchase of alternative fueled buses, and the rehabilitation of buses. Congestion Mitigation funds have also been used for replacement of buses, signs and bus stops, leasing of coaches, park and ride lots and operating assistance.

New Jersey has used STP funds for an historic rail station, and applied CMAQ funds to the purchase of a diesel locomotive and an upgrade of their signal system.

By far the greatest use of ISTEA funds for transit has occurred in New York, where in excess of \$200 million has been obligated for the design and construction of various capital projects, bus purchases, park and ride lots, and other projects.

Clearly, states are applying the ISTEA funds to a broad spectrum of transportation needs, fulfilling the multi-modal spirit of the ISTEA legislation. The transfer provisions are an option for the state and local governments, not a mandate. Looking specifically at highway to transit transfers, states and Metropolitan Planning Organizations (MPOs) are attempting to develop methods of evaluating transit vs. highway projects in order to best use the funds available. In some states transit projects may simply not be the best solution to transportation needs, and decisions will be made accordingly. In other states investment in public transit may come to represent a sizable share of transportation resources.

Mr. Chairman, responding to your question as to how transfers from highways to transit have affected urban versus rural highway and transit decisions, both urban and rural states have made such transfers, as detailed in the FHWA's attached table. It is interesting to observe that the first such transfer, \$400,000 from highways to transit to purchase buses, occurred in a rural state, Nebraska.

At this early stage in the implementation of the ISTEA, the evidence is that the transfer provisions of the bill are being used as intended, to obtain the best use of the available federal funds as perceived by the states, local governments and transit agencies. Once the MPO and state TIPS for future years come forward, a more complete judgment can be made.

CHANGES IN THE ISTEA

Mr. Chairman, with respect to changes in the ISTEA, to date AASHTO has not developed any formal recommendations.

The ISTEA constituted a major, once in a generation restructuring of federal involvement in and support of the nation's surface transportation system. The bill is only 15 months old, and thus is still an infant. Further, we do not yet know how the ISTEA and the Clean Air Act Amendments (CAAA) of 1990 will interact, as they must. In the absence of final conformity regulations being adopted by the Environmental Protection Agency and the development of the first TIPS under those regulations, the interaction between the ISTEA and the CAAA cannot be fully predicted. There are also other provisions of the ISTEA still to be implemented, including the six management systems.

At this stage, it appears premature to recommend changes to the overall structure of the ISTEA. We need a stable program, and until we know major changes are needed the wiser course seems to be to wait a while longer. This does not mean, however, that some changes in specific provisions of the ISTEA might not be advanced by AASHTO, its member department or others over the coming months. In any case, AASHTO has no specific changes in the ISTEA to recommend at this time.

Mr. Chairman, we again thank you for the opportunity to provide our views to you and the Subcommittee on implementation of the ISTEA. We stand prepared to respond to questions, now or later.

FULL FUNDING OF THE ISTEA AUTHORIZATION LEVELS

(OCTOBER 4, 1992)

PR-20-92

WHEREAS, Public Law 102-240, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), signed by the President on December 18, 1992, established a new transportation program featuring increased Federal assistance for highways and public transportation; and

WHEREAS, these increased authorization levels will still fall short of meeting America's highway and transportation needs; and

WHEREAS, the higher authorization levels were contemplated to be fully funded by Congress when it enacted ISTEA; and

WHEREAS, surface transportation programs are financed by dedicated taxes collected from users to improve their transportation systems, and any proposed reductions in funding levels will result in users receiving less than the full benefit of their contributions as well as increasing the existing Highway Trust Fund balance; and

WHEREAS, the states and other agencies, based on the authorizations of Public Law 102-240, have planned, budgeted and contracted for important transportation public works projects which will stimulate the economy and create jobs for the nations unemployed; and

WHEREAS, the states are prepared to fully utilize all Federal-aid surface transportation funding provided to implement needed transportation improvements and continue assisting the nation's economic recovery;

NOW, THEREFORE, BE IT RESOLVED, by the American Association of State Highway and Transportation Officials (AASHTO) that in considering the Transportation Appropriations Bills, the Congress should pass and the President should sign legislation with full funding of the highway and transit programs of the ISTEA; and

BE IT FURTHER RESOLVED, that copies of this resolution be provided to the appropriate members of the United States House of Representatives and Senate, the U. S. Department of Transportation, and the President of the United States.

U. S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

SUMMARY OF TRANSFER OF FUNDS
 FY 1993

OCTOBER 1, 1992 THRU MARCH 30, 1993

FROM CATEGORY OF FUNDS	TO CATEGORY OF FUNDS	AMOUNT
PRIMARY	SURFACE TRANSP. PROGRAM	599,346.60
INTERSTATE CONSTRUCTION	INTERSTATE MAINTENANCE	8,382,138.14
INTERSTATE MAINTENANCE	NATIONAL HIGHWAY SYSTEM	50,298,981.00
INTERSTATE MAINTENANCE	SURFACE TRANSP. PROGRAM	5,482,814.00
RURAL SECONDARY	SURFACE TRANSP. PROGRAM	11,085,073.85
BRIDGE	NATIONAL HIGHWAY SYSTEM	4,969,187.00
BRIDGE	SURFACE TRANSP. PROGRAM	81,165,764.00
NATIONAL HIGHWAY SYSTEM	SURFACE TRANSP. PROGRAM	24,150,345.00
SURFACE TRANSP. PROGRAM	SURFACE TRANSP. PROGRAM	2,195,998.00
URBAN SYSTEM	PRIMARY	517,500.00
URBAN SYSTEM	SURFACE TRANSP. PROGRAM	27,450,259.18

		216,297,406.77

STATE	CITY	PROJECT	FUNDS OBLIGATED			STATE TOTAL
			STP	CHAO	OTHER	
UTAH	STATEWIDE	PURCHASE 10 BUSES 20 VANS		2,400,000		2,400,000
VERMONT	BURLINGTON	IMPROVE MAINT FAC	200,000			
	STATEWIDE	PROPERTY ACQUISITION	156,600			
	STATEWIDE	COMPUTER EQUIP	1,884,000			
	STATEWIDE	TRANSIT PROJECT	471,000			
	STATEWIDE	PROPERTY APPRAISALS/CONST SERVICES	33,400			2,745,000
VIRGINIA	NEWPORT NEWS	FOUR REPLACEMENT BUSES		704,000		
	HAMPTON	BUILD TRANSPORTATION CENTER		1,000,000		
	NEWPORT NEWS	BUILD TRANSPORTATION CENTER		1,000,000		
	RICHMOND	FEASIBILITY AND DESIGN STUDY		200,000		
	RICHMOND	IMPLEMENT COMPREHENSIVE TRANSIT PLAN		800,000		
	RICHMOND	ACQ ALT FUEL BUSES FOR GRIC BUSES		367,000		
	WASHINGTON, D.C.	30 REPLACEMENT BUSES		4,600,000		
	WASHINGTON, D.C.	FIVE COMMITTEE BUSES		920,000		
	MORFOLK-PORTSMOUTH	20 TRANSIT COACHES FOR HOV EXP BUS		3,440,000		13,031,000
WEST VIRGINIA	HUNTINGTON	PURCHASE AND RENOVATE BUS TERMINAL		291,246		291,246
WISCONSIN	MILWAUKEE	PURCHASE TRANSIT BUSES	717,000			
	MANTOWOC	PURCHASE BUS		200,000		
	MILWAUKEE	BUS UPGRADES		2,118,400		
	MILWAUKEE	PURCHASE BUSES			883,000 **	3,918,400
TOTAL OBLIGATED			54,603,344	277,048,670	104,420,601	436,072,615

* Interstate Highway Substitution Funds being used for Transit Purposes

** Minimum Allocation Urbanized Funds

*** Priority Intermodal Projects

MINIMUM ALLOCATION AND ISTEAD DEMO PROJECTS

Senator LAUTENBERG. Well, there is one thing that is for certain as we listen to your comments, that unless we fully fund the program we will certainly not have met the mission that ISTEAD set out to accomplish. And you are not going to find any argument with that from this chairman, I can assure you.

Initially, Federal Highways had advocated in the 1993 year budget including the minimum allocation program, an ISTEAD demonstration program, within the Federal Highway obligation ceiling.

Mr. Carlson, how much of the available minimum allocation ISTEAD demonstration project obligation authority has been obligated since the enactment of ISTEAD?

Mr. CARLSON. I will provide that for the record. I believe around 25 percent of the minimum allocation has been obligated.

[The information follows:]

OBLIGATIONS FOR MINIMUM ALLOCATION AND ISTEAD DEMOS

As of March 31, 1993, 45.8 percent of authority available for Minimum Allocation since the beginning of fiscal year 1992 had been obligated, and 21.4 percent of authority available for the ISTEAD Demonstration Projects had been obligated. The following table presents additional detail on obligations for these programs:

	Minimum allocation	ISTEAD demonstrations
Fiscal year 1992:		
Unobligated balance (9/30/91)	\$388,897
New authority	\$1,159,988	\$558,567
Total available	\$1,548,885	\$558,567
Obligations	\$1,050,331	\$124,710
Percent obligated	67.8	22.3
Fiscal year 1993:		
Unobligated balance (9/30/92)	\$498,554	\$433,857

	Minimum allocation	ISTEA demonstrations
New authority	\$1,080,460	\$1,236,489
Total available	\$1,579,014	\$1,670,346
Obligations (3/31/93)	\$155,089	\$260,174
Percent obligated (3/31/93)	9.8	15.6
Overall (3/31/93):		
Total available	\$2,629,345	\$1,795,056
Obligations (3/31/93)	\$1,205,420	\$384,884
Percent obligated (3/31/93)	45.8	21.4

Senator LAUTENBERG. What accounts for the slow rate of obligation for the minimum allocation and the ISTEA demonstration project funds?

Mr. CARLSON. For the demonstration projects, only a certain percentage of the amount authorized in the bill for each project is available each year, so that some of the States have elected to wait until they can accumulate a bit of a balance before they start to move those projects. In the minimum allocation category, that money is not tied to any particular system or project, so the States consider that to be somewhat free money, and they save it to use for things that they particularly have needs on.

I am told that the 25 percent for demonstration projects is about the correct number.

Senator LAUTENBERG. Now, does that 25 percent meet fully the funding that would have been available, or are there reasons other than the formula structure that account for the slowness of distribution?

Mr. CARLSON. Well, the GAO study, I believe, found that some of the projects that were put in as demonstrations even in 1982 have not yet been advanced. So it would appear that some of the demonstrations selected have not been necessarily popular with the jurisdictional implementers. Now whether that is an answer, I am not sure.

Senator LAUTENBERG. I am not sure whether that is an appropriate answer, but it is sure not one that we are going to manage from here, because if you talk about jurisdictions, we are talking about State transportation departments selecting priorities, even though some of my colleagues occasionally would like me to bypass that, we are not going to attempt to do it.

SUBJECTING MA AND DEMO FUNDS TO THE OBLIGATION CEILING

Would State flexibility be enhanced by subjecting these funds to the obligation limitation?

Mr. CARLSON. We would get at one of the problems that Mr. Francois mentioned, which is the unintended results of lowered obligation ceilings; it changes the formula allocations percentages that the Congress had in mind. And we also think that it might be an incentive for them to move some of these projects a little quicker. They would be on a basis similar to the rest of the Federal aid program.

Mr. MEAD. That is so, Mr. Chairman. I would like to second that. A slow obligation rate is a significant problem with demonstra-

tions, even going back to 1982, and I guess most people would agree that 10 years is enough time to begin to see the beginnings, at least, of a project.

Senator LAUTENBERG. Well, what we will have to review is whether or not we can move these funds along somewhat quicker if the projects in fact meet the tests that they are supposed to with in their jurisdictions.

EQUITY BETWEEN FEDERAL-AID HIGHWAYS AND MA/DEMO FUNDING

Mr. Francois, last year the committee, in response to the budget constraints imposed by the firewalls between defense and domestic discretionary, had to reduce the obligation on the regular Federal Aid to Highways Program 16 percent below the fully authorized level. Yet, the minimum allocation program and the demonstration projects were exempt from this reduction.

If faced with the need to limit expenditures, would you limit the minimum allocation in demonstration projects before, or would you go along with the Federal Aid to Highways Program?

Mr. FRANCOIS. Mr. Chairman, AASHTO has no specific position on this. As you can probably understand, some States are here and some States are there, and we want to please both of those States.

Senator LAUTENBERG. Well, that leaves us 48 more to deal with.

Mr. FRANCOIS. Realistically, in fairness, some new approach needs to be taken. Because, clearly, in the old days, before the allocations were locked in, when everything was in formula, if money came out of the program, everybody's share went down, and it was clearly equitable. There is inequity now, and this is what many of the States who are losers complain about when we have underfunding.

In point of fact, because of all the changes that occurred, as we understand it, only about five States actually got more money in fiscal year 1993 than they did in 1992, and all the others had less. That is a result of what Congress wrote into the bill. But of course they wrote it in contemplating full funding. And I do not think Congress necessarily took into account what happens if there would not be full funding.

So we are all faced with this problem.

GAO'S CRITERIA FOR SELECTING DEMO PROJECTS

Senator LAUTENBERG. Mr. Mead, what is the point in authorizing demonstration projects that are already included in State or regional transportation funds?

Mr. MEAD. Well, there are two objectives that would be served. One is that it would ensure that the sponsor of the demonstration, the congressional sponsor, coordinated with the State, and that it was indeed a State priority.

And the second is that, since it would be a State priority, it would tend to ensure that the money would at least be spent, instead of sitting there in the trust fund.

Senator LAUTENBERG. Well, in addition to requiring that these demonstration programs appear on State plans, does GAO have any other recommendations to make for criteria for selecting demonstration projects?

Mr. MEAD. I think a use-it-or-lose-it provision, would put the demonstration projects on the same footing as your other highway projects. It would give the States 4 years to obligate the funds, and after that, redistribute them to the other States.

Senator LAUTENBERG. That is like losing it.

FLEXIBILITY

Under ISTEA, States and urban areas are now allowed unprecedented flexibility to spend money on roads, transit, or other programs, Mr. Carlson. How is Federal Highways defining or analyzing its funding flexibility?

Mr. CARLSON. We obviously have attempted to help the States in trying to do the projects that they think are best. And we have many new relationships to build up before the flexibility in some metropolitan areas is going to be fully utilized.

The planning regulations that we put out this year, the notices of proposed rulemaking, should help to develop those relationships a little better and help define the planning provisions of the ISTEA so that everyone understands their responsibilities.

Right now I am afraid that there may be some areas where there are organizations that consider their veto power more important than their power to act affirmatively, and we want to get it so that everyone is working together to get these projects done as quickly as we can.

Senator LAUTENBERG. So, you are not developing more specific yardsticks for doing that?

Mr. CARLSON. No; the legislation gives the MPO's additional authority that they did not have before, and what we are trying to do is work with the States, the MPO's, and the other interest groups in metropolitan areas to get partners to the table, and get them to work well together rather than to look askance at each other's projects.

Senator LAUTENBERG. To what extent have the States and other localities used the flexibility available to them?

Mr. CARLSON. Well, there are a lot of States that are planning to use the flexibility Mr. Francois mentioned, at least to the extent that it could be done, and assuming all the metropolitan planning organizations were ready to take on the responsibility. I think we have a ways to go yet, but I think that they are developing those relationships.

It varies around the country. There are organizations such as the metropolitan organization in San Francisco and communities in New York and New Jersey that are ready to move out on these issues. And there are other parts of the country where there really has been very little accomplished yet in the ability to transfer funds and implement the flexible provisions of the ISTEA.

Senator LAUTENBERG. Mr. Francois, what obstacles do you think prevent the use of ISTEA's funding flexibilities?

Mr. FRANCOIS. I am not sure they are obstacles, Senator. Part of it is simply learning a new system. Our State planners are spending immense hours working among themselves and working with regional organizations trying to establish new procedures, being certain there is adequate staffing, being certain that there are adequate tools to examine the transportation issues.

It was mentioned here this morning that we are using, in some instances, predictive tools that are quite old. The Federal Highway Administration is undertaking some research to develop new traffic analysis measures, and the States are doing the same. We have to do things in new ways under this bill, and we are trying to work with each other.

Now, the AASHTO standing committee on planning is currently reviewing the NPRN's for both the urban planning and statewide planning, and for the six proposed management systems of ISTEA. And how those relate to each other, and they really form a new concept of doing business that we are just learning to develop.

The relationships with our MPO's, I think, are developing around the country. Quite frankly, in some States they were always good. In other States, they were always bad. In other States, they have just been ignored.

Senator LAUTENBERG. If you looked at the score cards, would you say that some who were not so good before are getting better?

Mr. FRANCOIS. Yes.

Senator LAUTENBERG. Or is pretty much lined up the way it used to be?

Mr. FRANCOIS. No, no; it is changing drastically out there. And I think we are all learning, as I said. Planning money is very important right now for MPO's and for States both.

Another factor that I did not mention that we should mention here is the ultimate interface between the Clean Air Act Amendments of 1990 and the ISTEA of 1991. The two bills are very closely interwoven with each other, and we do not yet know what that ultimate interaction will be until we get from EPA the conformity guidelines that we must live with. And those are under hot contest right now, as you are well aware Senator.

Senator LAUTENBERG. Also with the ADA, right?

Mr. FRANCOIS. The ADA is less a factor. It affects the transit programs, obviously. But the potential of the Clean Air Act amendments and the conformity process is enormous on whether or not there will even be highway programs in many of our nonattainment States in fiscal years 1994-95.

So, until that clarifies, it is very difficult to talk in terms of ultimate transferability and the ultimate use of many of these dollars.

Senator LAUTENBERG. Mr. Mead, is the funding flexibility being used to make up any difference between mass transit appropriations and the ISTEA authorizations for mass transit?

Mr. MEAD. I do not believe that is being done with any intent or forethought. Obviously, with a \$350 million transfer it helps, but that was for last fiscal year in which they were funded at their full authorization level.

This year, even with Mr. Clinton's \$750 million proposal for transit, you are still \$750 million short of the full authorization.

Senator LAUTENBERG. Senator Hatfield.

Senator HATFIELD. Thank you, Mr. Chairman. I appreciate very much the opportunity to hear the testimony this morning from this transportation panel.

I also, Mr. Chairman, am sorry that I will not be able to remain, since the supplemental appropriations bill comes up again on the floor at about 10:30, to hear Grace Crunican. I mention that be-

cause she was a staff member of this Subcommittee on Transportation of the Appropriations Committee for a period of time, and also an expert in transportation for the city of Portland and other assignments.

So, I would just like to have the record indicate I welcomed a former fellow alumnus from the University of Oregon, and also a former member of this committee.

OREGON HIGHWAY NEED—INTERSTATE 5

Mr. Carlson, I know that you are aware of the critical transportation needs in Oregon. I'd like to specifically focus on the 9-mile bottleneck on Interstate 5 located at Salem, the State capital. It is a huge undertaking and a costly project.

This section of I-5 was built in the early fifties, and probably has the highest commercial development of any part of the interstate system in our State.

It is going to have to have some significant help from FHWA and from Congress. From all assessments, I-5 is the mainstream of our basic economic highway of cargo and economic activity. In addition, they tell me that traffic is expected to double in the next 25 years, as it has certainly more than doubled since its first construction.

I understand, according to the State highway engineer, that we will need about \$45 million in fiscal year 1994 to reconstruct the Market Street interchange, and the widening program that goes with that. And, therefore, that discretionary funding is critical to the needs of this project.

As you perhaps remember during our consideration of ISTEA, Oregon projects on I-5 were designated as the highest priority in the country as far as discretionary I(4)(r) funding is concerned. Of course that means that we have to be sensitive of that in the committee as well as asking you for your support.

First of all, I would assume, may I, that you are familiar with the priority designation granted to this project in ISTEA? And can you give me any kind of—I would hope I could use the word assurance. But at least a prediction as to how the agency might handle this problem in relation to discretionary funding?

Mr. CARLSON. The first request from the State of Oregon for interstate discretionary funding was received in the first allocation process in October 1984, and it was for \$11 million. We were able to allocate those funds.

We will see, again, in October 1993 what the State may request, and knowing the priority of the project we will certainly give it every consideration.

Senator HATFIELD. Every consideration. Can you make that a little stronger?

Mr. CARLSON. Well, one of the problems that we have in this is that we are always receiving similar requests; in 1992, a total of \$794 million was requested by 22 States. And we were able to give Oregon all that it wanted. We were not able to give the rest of the States all that they wanted because we had only \$64 million to allocate. I am afraid that we will probably have a similar situation in 1993. Certainly we will do the best job that we can in making these scarce funds available.

Senator HATFIELD. As a member of the Appropriations Committee, I can assure you I appreciate the problem you are describing because there are many accounts that we deal with that have a similar problem as you know.

Mr. CARLSON. Sure there are.

HIGH-SPEED RAIL CORRIDORS

Senator HATFIELD. Mr. Carlson, in section 1010 of the ISTEA established a high-speed rail corridor program and provided \$30 million for the elimination of railroad crossings in order to be able to increase speeds of such trains.

One corridor has been designated from Vancouver, British Columbia, to Portland, and Portland to Eugene. In that entire corridor, there is about 125 miles from Portland to Eugene that goes across the flat valley in mostly rural Oregon. That is to say, it hits Albany and Eugene, but basically it is a rural area.

The State of Oregon has put high priority on this corridor. The Governor, Governor Roberts, has asked the legislature to appropriate \$11.5 million as the State's share to at least start these crossing removals. We have about 123, I believe, such crossings that for relatively low costs can be handled very early on, very quickly.

Recognizing that the high-speed rail program is still in its infancy and many details have yet to be worked out within the Department of Transportation, can you give me an idea as to what additional resources might be expected from your agency or FRA for those corridors that have adopted plans and identified local money, local support?

Mr. CARLSON. I do not think that we are in a position yet to ask local agencies to come up with their proposed funding. What we have, outside of the money that you mentioned, is in the ISTEA itself 10 percent of the surface transportation program funds must be used for safety projects. That includes both hazard elimination and railroad grade crossing projects.

The thing that distinguishes a high-speed rail corridor from the rest of the railroad crossings in the country is the speed of the trains, which almost makes it necessary to separate the road grade from the railroad grade. While this is not monumental in cost, it is quite hard to build a railroad grade separation for less than a million or two, so that the number of your 123 crossings which will receive funds probably will not be as large as we would like.

We certainly will work with the State of Oregon in developing any proposals that they may have for those kinds of crossings.

Senator HATFIELD. Oregon is the first State that has really taken this challenge seriously, and because we had a State railroad agency that was looking at how we could restore resurrect passenger rail traffic within our State from interurban traffic.

ELIMINATING HIGHWAY/RAILROAD CROSSINGS

Mr. CARLSON. One of the other things I would mention is that we have worked rather closely with FRA on a proposal that they have to eliminate 25 percent of the crossings in the country in addition to the money that we might have available to separate the

grades, and also to provide protective devices. It is very difficult to do this, but really it boils down to the fact that there are probably too many very local roads that are provided that kind of a service, considering what we are trying to do with the high-speed rail program.

We will be trying to work with the State of Oregon in also looking at those crossings to see if any of them could be eliminated as well as protected.

Senator HATFIELD. I really feel we are on the brink of something significant. As the chairman knows, there is a very outstanding Spanish design for interurban passenger service cars. They are now looking in the United States for a possible location to start manufacturing such cars and evidently can do so very reasonably in terms of the competition and good engineering credentials and a record.

I think it is just another indication that there is a growing interest in the public to see a restoration of high-speed rail competitive to other modes of transportation.

FEDERAL LANDS HIGHWAYS

One last question. I understand that your agency has asked for a \$36 million increase for a Federal lands program in fiscal year 1994.

Mr. CARLSON. Yes, sir.

Senator HATFIELD. I am pleased to know of your interest in that area since I have, in my State, 51 percent of our State that is owned by the Federal Government, which does not sound like very much when I sit next to my colleague from Alaska. But it certainly is a significant amount considering the square miles of our State.

Can you tell me how you plan to use this additional money, whether on a State-by-State breakdown or on a discretionary funding program?

Mr. CARLSON. I believe that the proposal is to have that as discretionary. We will be working with the Park Service and the Forest Service as we normally do in the development of a program for using those funds.

It is a good program. It is the basis for funding of public lands. The requests that we get and the amount of money that we have available are somewhat reminiscent of our comments on the I4R discretionary program. There is usually several hundred million in requests and only \$40 or \$50 million to allocate.

Senator HATFIELD. Is that why I perceive that you have provided such money, up to this point, to the States with less Federal ownership than those with more Federal ownership?

Mr. CARLSON. We have not attempted to cut back on the States. We have formulas that show the amount of public land and amount of money that States have been given historically. And we are trying to develop a little bit of a proportionate share arrangement there.

There have been some special occasions where we have one or two States that have had major expensive projects that are way over their share. And we have also been trying to do a little work here in the District of Columbia in the area of The Mall, the monuments that the American people like to visit.

So I suspect we probably have been a little over share there. But we are trying to continue to fund States like Oregon and Idaho and Alaska and other States that have a large proportion of public lands, according to their share.

Senator HATFIELD. I thank you, Mr. Carlson. Mr. Chairman, I want to express my appreciation for your courtesy. And let me submit for the record, if I could, the other questions that I have for Mr. Carlson.

I thank you again. If you will excuse me.

Senator LAUTENBERG. Glad to have you here with us.

Senator STEVENS, did you want to jump in and make some comments?

ALASKA-CANADA HIGHWAY

Senator STEVENS. I just have a couple of questions, Mr. Chairman. First I want to thank Mr. Carlson for working with us on the Alaska-Canada Highway problem. The Alcan has been a very difficult one for us. We lost our great supporter when Senator Mansfield left. That was really one of his pet projects, because it does connect Great Falls, Canada into Alaska.

Unfortunately, though, we have another problem. And that is the problem of the underallocation. As I understand it, there were \$2.6 billion in the demonstration projects minimum allocation fund. And States such as ours, our former allocation was reduced from \$213 to \$176 million.

My two questions are this. Was the Alcan money subtracted from our allocation? Are we being penalized because we fought for the Alcan, funding the Alcan Treaty?

Mr. CARLSON. No.

Senator STEVENS. Because I do not think anyone else had that kind of withholding.

Mr. CARLSON. Well, there is no similar project in the country, that is for sure. But Alaska was not penalized for that allocation.

Senator STEVENS. Why did we only get 80 percent of our money, then?

Mr. CARLSON. I cannot speak with assurance to the formulas; the development of the formulas is handled in the conference committee. But Alaska, one of the States that Mr. Francois mentioned, was affected by reducing the amount of obligation authority available, and because your share of demonstration projects and minimal allocation obviously is very, very low.

Alaska is a loser if the full funding of ISTEPA is not made available. That is one of the reasons that we think that minimum allocation funds and demonstration project funds should be put under obligation authority.

Senator STEVENS. Well, I understand that. And I appreciate your consideration of our problem. But the fact still remains that under the allocation formula, we—I was listening to the Senator from Oregon—we seem to have been penalized because we have so many Federal lands. Did that happen?

And our funding formula is higher because we do have all those Federal lands. And yet, we cross mile after mile after mile of them with our Federal aid highway funds in order to get to State-owned land.

Mr. CARLSON. Senator, I do not feel I am in a position to either support or attack the formula that was used to allocate the funds. We had, in the proposals that the Federal Highway Administration put on the table before the development of ISTEA, some formulas that may have resulted in a more appropriate formula in your view for Alaska.

But Congress, when they enacted the law, set up the amount of money and there is not much we can do about it at this stage.

LIMITING MA AND DEMO FUNDS

Senator STEVENS. Let me ask this question then. And I will just quit. Was it not your administration that recommended that there be a limit on the allocation of the funds, except for demonstration projects and minimum allocations?

Mr. CARLSON. We have never recommended that demonstration projects be funded. That is something that we have always been consistently in opposition to.

Senator STEVENS. I guess I should talk to the chairman.

Senator LAUTENBERG. Funded separately.

Senator STEVENS. But there was no ceiling put on them. They can go off the wall and they are not subject to any limitation.

Mr. CARLSON. That is right.

Senator STEVENS. And those that do not get demonstration money end up by losing even more, because of the minimum was placed into effect on allocation of formula grants. Is that it?

Mr. CARLSON. I am not sure. You may have me confused here. I am not sure that I understood the question, sir.

Senator STEVENS. Since demonstration projects and minimum allocations are not subject to any obligation ceiling, the net result was that you had to take more money out of the allocations to States like mine. That is the way it appears.

Senator LAUTENBERG. The Senator is correct. And we fought that battle on the floor of the Senate. We won it. And it was lost in conference with the House.

I do not know whether Mr. Carlson wants to volunteer to try to make changes. But I would tell you this—

Mr. CARLSON. I could answer that very quickly. No.

Senator LAUTENBERG. Senator Stevens knows a lot about formulas and so forth. And I think recognizes that demos are funded at a cost to the overall obligation ceiling.

Senator STEVENS. I understand. It appears to us that somehow or other we got less than we should have gotten. That is what I am saying.

Senator LAUTENBERG. I would say that is a foregone conclusion, from your view. [Laughter.]

Senator STEVENS. Even assuming the cap that was put on allocations, are not some States below that cap because of the necessity to fully fund the demonstration projects? And in our case, fund the Alcan highway?

Mr. CARLSON. I am sorry, sir. Would you repeat your question?

Senator STEVENS. Let me rephrase it. Are there any States that got less than the obligation ceiling?

Mr. CARLSON. All the States got the same ratio of obligation ceiling for those programs that are under obligation control. As you re-

call, we had difficulty with the Alaskan highway and we were able to resolve that problem.

But taking that off the table, the State of Alaska got the same ratio of obligation authority that all the other States got for those parts of the program that are under obligation ceilings.

Senator LAUTENBERG. And the regular funding was reduced by some 16 percent, because we did not fully fund ISTEA. I look forward to working with the Senator from Alaska to get it fully funded.

Senator STEVENS. State funding was reduced 19.9 percent.

Mr. CARLSON. I believe that the 16 percent does not take into consideration what we may have had to take down for administration and research and so forth. And that may be—I can assure you that all of the States got the same percentage.

Senator LAUTENBERG. The pain was inflicted proportionally?

Mr. CARLSON. Proportionally to all States; yes, sir.

Senator STEVENS. Thank you, Mr. Chairman. I will be working with you to try to avoid that in the future, because it does hold up vital funds.

Mr. MEAD. Mr. Chairman, I have one point that might elucidate that nationally. We reviewed the demonstration projects from 1987 to figure out what would happen if there were not any demos authorized. It is too early to do this for the 1991 demos.

What we came up with was 21 of the States would have received more money, 14 States would have experienced no change whatsoever, and 15 would have received less money.

Senator STEVENS. Because they were getting the demo money.

Mr. MEAD. Yes, sir.

Senator STEVENS. Thank you, Mr. Chairman.

CONGESTION MANAGEMENT

Senator LAUTENBERG. Thank you, Senator Stevens. I want to talk for a moment about congestion management. The ISTEA gives States and local officials increased funding and flexibility to choose the best mix of transportation projects to meet the local needs to reduce congestion and improve air quality.

Mr. Carlson, what is the Department doing to encourage the States and locals to include transportation management control projects in their plans, as opposed to relying simply on building new roads to meet the traffic needs?

Mr. CARLSON. One of our management systems is for congestion. And we will be looking to the States to use the procedures that we are setting up in those management systems to get at that issue.

Also, we are encouraging that the CMAQ funds, which are directly tied to the 1990 Clean Air Act, should be used for those kinds of projects that reduce air pollution induced by motor vehicles. So almost all of them are for either transit or bicycle paths or some feature like that. There is no other basic use. Construction of HOV lanes is about the only time you would be building what some people would consider a typical highway project.

Otherwise, all of the CMAQ money is going for those kinds of features that improve air quality.

Senator LAUTENBERG. But what can your department do to encourage the local management agencies to focus on this?

Mr. CARLSON. We are, sir. We are working very hard on the relationships that have to be developed between the MPO's and the States, and also on the modeling techniques to develop the proper traffic projection capabilities, so that we can tell what will happen if certain amount of ADT reduction occurs in a traffic stream.

And the idea of the congestion mitigation funds is to get at those kind of projects that will help us do that.

Senator LAUTENBERG. Is there a departmental review of programs that are designed to deal with the congestion, like the Air Quality Program, that ascertains whether you are meeting what we consider your obligations or not meeting them? Are you saying that everybody is using whatever resources they have to deal with these problems? Is the congestion mitigation program being treated with enough seriousness in the local areas to get the attention that we want them to give it—

Mr. CARLSON. I think the attention given to it is increasing, certainly with its new programs. So we had some work to do. But I think that we are making considerable progress in working with the States and the MPO's to get the programs underway.

It has been somewhat frustrating because we have an ongoing process of reviewing the planning process that develops these projects. And the FHWA has been attempting to get the players together to make this thing work.

We are also required by ISTEA to certify that the planning process is doing what you are asking that it do. And that will be coming up as a result of our planning regulations. We should be in the process of certifying the planning activities of the metropolitan areas within the next year.

ALLEVIATING CONGESTION WITH IVHS

Senator LAUTENBERG. The percentage of travel on the urban interstates increased from about 55 percent to more than 70 percent from 1983 to 1991. And obviously, this growth and congestion gives rise to substantial cost.

A July 1992 report by the Texas Transportation Institute states that in 1989 the total cost of congestion for 50 urban areas that were studied was about \$39 billion. Delay accounted for about 85 percent of this amount, excess fuel consumption accounted for about 15 percent. Eight of the top 10 urban areas had total congestion costs exceeding \$1 billion.

To what extent is the IVHS research effort expected to alleviate this growth in congestion?

Mr. CARLSON. Well, the whole effort seeks to do two things. One is to alleviate congestion and the other is to provide a safer facility. For our first driver information system activity, some of the evaluation reports on Travtek in Orlando have started to come in, and some drivers that have rented the vehicles down there and used them on a daily basis for a period of time are saying they are saving at least 10 percent of their time on the road.

So I think it would be premature for me to speculate on how effective this is going to be, but we are starting to see results that lead me to believe that IVHS will reduce congestion.

Senator LAUTENBERG. Again, what do you attribute that reduction to?

Mr. CARLSON. The fact that in Travtek drivers were given an indication of what highways were congested so they could take alternate routes.

Another thing that IVHS is doing in this area, while it was not done with IVHS funds, is the type of thing we want to do in the Los Angeles area. They have interconnected about 800 signalized intersections, and the result of that, and this has been documented, has been about 50,000 hours per day of reduced commuting time, about 8 million less stops per day at red lights, about a 10-percent reduction of fuel use in the area concerned, and something like a 26-percent reduction in air pollution.

I think this directly answers your question that some of the things that IVHS is going to do may not be really that visible to the public because they are somewhat transparent. If you are a commuter in Los Angeles, you still had to stop at some red lights that day, most likely. But there are 8 million less of those stops. And I think that those numbers, if we could generate that in these large urbanized areas across the country, get directly at your question: "Is IVHS helping?" I think the answer is yes.

Senator LAUTENBERG. The problem is the individual, as you suggested, does not feel it. When you talk about 55,000 hours, I think is what you said—

Mr. CARLSON. 50,000 hours of reduced commuting time per day.

Senator LAUTENBERG. But if it gets down to each commuter saving 8 seconds that day, that does not reduce the tension in the home about where were you when I needed you. [Laughter.]

Mr. CARLSON. That is one of our serious marketing problems with IVHS; the benefits are a little transparent.

Senator LAUTENBERG. I would say you would have to add a digit or two in front of the 50,000. But at least we are beginning to see collectively some results, and the more we develop the program, the more familiar the States and locals become with it, the better off the result is. I am optimistic it is just that progress is measured in very small increments when it comes to an individual basis.

UTILIZING IVHS FUNDING

In the past appropriations bill, Congress has directed DOT to support specific IVHS programs, and recommended specific amounts that could be cost-shared with these projects. Mr. Carlson, are any of the earmarked projects not moving forward expeditiously in terms of the actual obligation and the expenditure of funds?

Mr. CARLSON. Most of them are moving ahead expeditiously. There are some where there are difficulties that may be institutional problems getting groups together, some have not moved as fast as we would like. But in general, certainly a very large percentage of the IVHS projects that have been earmarked are moving forward.

In fact, I may say that it has helped to have that earmarking, even though we sort of oppose earmarking, but we hope that the strategic plan will let us convince the Congress that we have a plan as to where we are going that will be a building block-type plan and it will be less necessary for Congress to give us the kind of advice that they have in the past.

Senator LAUTENBERG. We are not reluctant to give advice.

For the record, could you please list for us each of the projects where the amount of unobligated funds appear to be stored for future implementation?

Mr. CARLSON. Certainly.

[The information follows:]

FISCAL YEAR 1993 FHWA IVHS EARMARKS

Location / Project	Earmarked Amount	Anticipated Obligation
Northeast Corridor (MD to CT)	\$10,500,000	¹ \$4,500,000
Gary Corridor, IN	1,400,000	1,400,000
Houston Corridor	3,105,000	3,105,000
Anaheim Corridor	4,200,000	4,200,000
L.A. Smart Corridor	4,900,000	4,900,000
Chicago Corridor	500,000	500,000
Milwaukee Corridor	500,000	500,000
San Diego, CA	2,100,000	2,100,000
Chicago (ADVANCE)	4,550,000	4,550,000
Miami-Fort Lauderdale	2,240,000	2,240,000
Seattle, WA	3,500,000	3,500,000
Detroit, MI	700,000	700,000
Guidestar, MN	8,750,000	(²)
Orlando (TravTek)	500,000	500,000
Help/Crescent	525,000	525,000
Advantage I-75	1,400,000	1,400,000
I-80 CVO	700,000	700,000
Oakland County (FAST-TRAC)	10,500,000	10,500,000
Sutter County, CA	1,750,000	1,750,000
Fairfax County, VA	5,250,000	5,250,000
New Jersey (Police Comm. Center)	3,500,000	3,500,000
Signal Computerization, NJ	7,000,000	7,000,000
Toll Road ETTM, NJ	7,000,000	7,000,000
MAGIC, NY/NJ	6,280,000	6,280,000
TRANSCOM, NY/NJ	2,400,000	2,400,000
Southern State Parkway, NY	14,000,000	(³)
New York State Thruway	5,250,000	5,250,000
Total	113,000,000	84,250,000

¹The I-95 Corridor Coalition is a partnership of the major public and private transportation agencies which serve the Northeast Corridor of the United States. The mission of the Coalition is to improve mobility and transportation efficiency in the Northeast Corridor through the application of real time IVHS technology. The Coalition is developing a Business Plan and we anticipate funding three or four initiatives before the end of the fiscal year. Others should be ready for funding during the first quarter of fiscal year 1994.

²Guidestar continues to be very active in testing of IVHS technologies. They are presently working on those initiatives that were funded with fiscal year 1992 earmarked funds.

³In addition to the fiscal year 1993 earmark, the Southern State Parkway has not submitted a program for use of the fiscal year 1992 earmark (\$20 million) either. Total earmarked funds is \$34 million.

Senator LAUTENBERG. All right. And do you have any recommendations for improving the utilization of funds currently being reserved for IVHS projects? Is the Department considering recommending any legislative initiatives to address this issue?

Mr. CARLSON. I do not believe at this point we need legislative initiatives. What we are most interested in is to continue the development with our partner, IVHS America, of a program plan that will give us a better handle on the critical issues so that we can address those in the proper sequence and can keep the program moving. I think that we are showing significant results and I think

that we are making real progress. I do not know that we need any additional legislation.

NATIONAL HIGHWAY SYSTEM DEFINITION

Senator LAUTENBERG. Section 1006 of the ISTEA requires the Secretary of Transportation to submit to the Congress by the end of calendar 1993 a proposed National Highway System with a list and description of highways proposed for the system, including a map showing the proposed designations of NHS. The highway mileage for NHS is limited to 155,000 miles, subject to a 15-percent adjustment up or down by the Secretary. What is the status, Mr. Carlson, of the effort to define the National Highway System?

Mr. CARLSON. The first building block is to do a functional classification, and the functional classification is essentially complete in all the States, although there are some State boundary problems that remain to be worked out.

Senator LAUTENBERG. Is there a due date on that?

Mr. CARLSON. I believe it is April 30.

Senator LAUTENBERG. This year?

Mr. CARLSON. Yes; and on April 30, we will receive from the States their first cut at a proposed NHS. We have given them urban and rural mileage targets that we would like to have them aim for. And we will be expecting them to send in their first listing of specific routes by April 30 that we can look at and negotiate with the States and use whatever discretion that 15 percent gives us to come up with a system that will do those things that the act required in the way of criteria.

Senator LAUTENBERG. So you will have met the target date?

Mr. CARLSON. We anticipate meeting the target date for submission by December 18.

Senator LAUTENBERG. Mr. Francois, any problems that you see that you might encounter in designating the system? And if so, what do you think they are?

Mr. FRANCOIS. Mr. Chairman, the designation, as nearly as we can tell, is going as smoothly as it can in those States. There are different viewpoints in different States, obviously. California generally believes in a much smaller system. The Great Plains States generally believe in a much larger system. And the Federal Highway Administration will ultimately have to negotiate their way through all of that. But overall, we think it is going quite well.

And certainly, AASHTO has been a strong supporter of the concept of the National Highway System. We believe it is extremely important for the future of this Nation. We are hoping very much that the timetables will be kept, and we would frankly like to see the Congress not take 2 years, but 1 year, to bring this bill up and get it moving, because we need it in place as soon as we can to set the highway pattern of this Nation for the next 20, 30, 40 years. So we see no real problems at this stage.

Senator LAUTENBERG. What effect will defining the National Highway System have on State and local transportation officials and the private sector, particularly affecting their funding decisions?

Mr. FRANCOIS. The National Highway System's purpose, of course, is to meet the interstate commerce clause demands of the

U.S. Constitution for interconnecting States, major urban areas, et cetera. Within each State, the negotiations must occur between the local metropolitan planning organizations and the local governments.

As to what components of this national system are to be established within those areas, it is critical that the metropolitan planning organizations meet the challenge that was placed on them by the ISTEA to consider a plan for a metropolitan area that deals not only with passenger transportation but also freight transportation. The National Highway System is really the underpinning for the economy of a metropolitan area and for the State and for the whole Nation. So to that extent, everybody is clearly involved.

The business community is clearly involved. The business community needs to understand what this network is and what it is not, and that is an educational process which is ongoing out there now. There is not clear understanding at the industrial level, much of the commercial level, and many of the local government levels as to just what this system is for and how it is to function.

Senator LAUTENBERG. Could some of that be dealt with when we have a definition of the system overall?

Mr. FRANCOIS. Absolutely. We anticipate the Federal Highway Administration's presentation of this. We will look at the National Highway System and also in context with the other surface transportation systems of this Nation.

A group headed by the American Public Transit Association recently presented the other system, if we could call it that, that tries to bring together the transit systems, the intercity bus networks, HOV lanes, high-speed rail, and the others, so that we can look at what the national transportation itself is, and it is all of those things woven together.

Senator LAUTENBERG. The mission here is to get the definition or the structure of the National Highway System in place.

Mr. FRANCOIS. Interrelated with these other components of the national transportation system.

Senator LAUTENBERG. Those are decisions that will be made locally to balance between the various modes.

I would like to now call on my friend, Senator Domenici, who has some questions he would like to ask. We are happy to see you, Pete.

Senator DOMENICI. Thank you very much, Mr. Chairman.

First, I am sorry I was not here earlier, and I do not want to duplicate questions. We have a meeting upstairs to confirm the Comptroller General and recommend him to the Senate. So I went there first.

Senator LAUTENBERG. We are glad to have you.

Senator DOMENICI. First, let me compliment you on the question regarding the National Highway System. I was going to ask the same one, and clearly, it is of great concern.

Senator LAUTENBERG. Redundancy has never been a problem for the U.S. Senate, Senator.

Senator DOMENICI. For me, it is not going to be redundant today, because I heard their answers, and I just hope we get on and make that program materialize as soon as possible. I think a lot of people in my State are concerned as well as people around the country.

OBLIGATING HIGHWAY DEMO FUNDS

Have questions been asked about the \$6.2 billion in demonstration projects, Mr. Chairman?

Senator LAUTENBERG. Well, some questions have been asked regarding the relationship between that and the obligation ceiling, but I would be happy to have your comments.

Senator DOMENICI. Let me just ask, do we have a readout, Mr. Carlson, as to the status of this \$6.2 billion in programs? My best guess would be, based on past history, that this is a very slow spendout package. You know, we have them authorized, but I would be very surprised if we have spent very much of the money. I would be very surprised if the money was not going to spend out over a very long period of time, if ever. Could you address the status, if you have not?

Mr. CARLSON. We have obligated about 25 percent of the money for demonstration projects, and they are very slow to pay out. Part of it is due to the structure of the authorization because States only get a certain amount of the cost of a project authorized, and part of it is because sometimes the governmental jurisdiction that is responsible for building the project may not have been consulted at the time the project was put in and they may not be that anxious to do it. So those two things taken together have slowed down the process.

Senator LAUTENBERG. Slightly, did you say earlier, Mr. Carlson?

Mr. CARLSON. Pardon me?

Senator LAUTENBERG. Slightly behind the obligation availability?

Mr. CARLSON. They are running about 25 percent of the availability, and there is no obligation limitation on demos, so you have to compare that with the use of the 100 percent for the regular Federal highway program, I guess.

Mr. MEAD. Senator Domenici, I am Ken Mead from the GAO. Let me give you some specific figures because I do believe this is becoming a problem, especially with the solvency considerations for the trust fund.

I can take you back to 1982, and I can tell you that we had a total of 373 million dollars' worth of demonstration projects authorized in 1982 compared to \$6 billion and change in 1991. So there has been some growth.

All the way back to 1982, there is still about \$40 million that has not been spent.

Senator DOMENICI. Of how much?

Mr. MEAD. Out of 373.

Senator DOMENICI. Million?

Mr. MEAD. Yes; taking it back to 1987, out of a total of \$1.5 billion in demos that year, \$431 million still have not been obligated.

For 1991, it is a little soon to tell. Earlier in our statement, we recommended a procedure to place these demos on the same footing as other highway projects. If the project does not start within 4 years, in other words, start obligating some money for it, then perhaps there is a need for the money in some other State.

Senator DOMENICI. Or put it back in the ordinary obligation pool and let the States get a share of it under the formula.

Mr. MEAD. Yes, sir.

NEED FOR HIGHWAY STIMULUS FUNDING

Senator DOMENICI. What I guess I am wondering about, Mr. Carlson, is why—maybe you have a thought on this—why would we, in a stimulus package, be obligating \$2.5 billion—or, what is the number for highways?

Mr. CARLSON. \$2.97 billion, I believe.

Senator DOMENICI. Why would we be doing that, instead of saying why don't we take a part of this demonstration money that is clearly not going to produce jobs very soon and just cancel that much of theirs and say, let us put it as new obligational authority and appropriate it under the regular program?

Mr. CARLSON. I guess I would answer that by saying that FHWA, after the troubles in getting the apportionment formulas in 1991, would not be very anxious to recommend something that would change those apportionments that were in that bill.

Senator DOMENICI. But we would not be changing the ratios, sir. I am saying the ratios are great; the demonstrations are not very good.

Mr. CARLSON. Well, the problem is that the demonstration projects are not uniformly scattered over the States, based on the formula that Congress put together, so it would make it a little difficult for those States that have a high number of demonstrations to be very supportive of that. So we, basically—

Senator DOMENICI. Well, are you suggesting that States really did not support the formula, they supported it only if they got demonstration programs on top of it? You do not know that, do you?

Mr. CARLSON. Sir, that is a very difficult question for me to answer.

Senator DOMENICI. Yes; I would assume that you do not know anything about that. I mean, we have to have Senators answer that. [Laughter.]

Mr. CARLSON. I think that our response to that would be that we would like to see in future appropriation bills that the minimum allocation in demonstrations be put under an obligation ceiling. But as far as trying to, in a sense, inappropriate the money for past demonstrations, we feel that the stimulus would rise or fall based on the ability to let the States obligate in the way that they want to, and that is what our proposal was, and that is what got passed in the House.

Senator DOMENICI. But here I am, trying to understand that we have got to put some stimulus in this economy. And we have what is left over of the \$6.2 billion, and if you are right, you only have obligated 25 percent, that is one-fourth, so three-fourths of that has not even been obligated. I am looking at that and saying, my, wouldn't that be an interesting amount of money to put in a stimulus package, and spend it, rather than let it sit around.

If they are correct in their auditing, we probably, both of us, as young as he is, we will both be gone from this place before that \$6.2 billion is obligated. And I am thinking of staying here 15 years. How long are you going to stay?

Senator LAUTENBERG. Well, I am up in 1994; there will be others making that decision. [Laughter.]

But the one thing that I would like to be certain that we are clear on, because I think there may be some confusion as to percentages of distribution. The way the demonstrations are set up, they are laid out over a 5-year period, typically.

Mr. CARLSON. Yes.

Senator LAUTENBERG. And the first year, 8 percent; second year, 18.4 percent; et cetera. Now, is it 25 percent of those funds that would have been available under formula, or is it 25 percent of the total, the \$6.2 billion that we are talking about, which would not have been—there would not have been much more available anyway in the couple of years, 1992 and 1993?

Mr. CARLSON. There is \$1.6 billion available in 1992 and 1993, and it is the 25 percent of that which is gone. But only 8 and 18.4 percent of those authorizations come out in the first 2 years.

So, basically, I think if I am answering your question correctly, we are not taking into consideration the money that is made available over the entire 6 years. It is 25 percent of what was made available in those first 2 years.

Senator LAUTENBERG. So, is the \$6.2 billion the number, overall, that we are using as a reference point?

Mr. CARLSON. Yes.

Senator LAUTENBERG. All right. So, just to do it arithmetically, so that we are absolutely clear, you are saying that in these couple of years, 1992–93, roughly \$1.6 billion would have been available.

Mr. CARLSON. Yes.

Senator LAUTENBERG. But only \$400 million of that has been obligated for these demonstration programs that have been put into legislation thus far?

Mr. CARLSON. Yes.

Senator LAUTENBERG. So it is 25 percent of the \$6.2 billion.

Senator DOMENICI. But is 25 percent supposed to be obligated in the first year?

Senator LAUTENBERG. 1992 and 1993 would have had 26.4 percent.

Senator DOMENICI. Got it. Thank you very much, Mr. Chairman.

Senator LAUTENBERG. So, again, these funds have not been obligated for what reasons, Mr. Carlson?

Mr. CARLSON. Well, I think that the fact that the authorization comes out over the full 6 years is certainly one reason, because some States have not wanted to put up enough money to begin the project.

Senator LAUTENBERG. For the match?

Mr. CARLSON. Well, in fact, it is certainly a big overmatch on the part of the State if they only get 8 percent the first year and 18.4 percent the second year. So they have not been willing to put out the money to go ahead and advance a project.

Now, some projects, and it varies greatly, are long enough in character that you can take that 8 percent or that 18.4 percent and have a viable project. Other projects are such that they would want to have the entire project go at once, just for contract administration purposes.

Senator LAUTENBERG. So it is possible that, in order to make the project viable, they would have to store or husband some of this money so that when the gun goes off they can go ahead and move

on it. These are not funds, are they, Mr. Carlson, that are lying there dormant, that have no commitment made against them, even though the obligations have not been fully fulfilled at that time?

Mr. CARLSON. Well, the authorizations are lying there dormant. But since this is out from under obligation authority, the obligation authority is being used for the regular Federal Aid Highway Program, and the money that is budget authority is just lying there. That is the structure of the bill.

Senator LAUTENBERG. OK.

So the outlays are not there, even though the authorization is there?

Mr. CARLSON. That is right.

Senator LAUTENBERG. If that were put under the obligation ceiling, the total Federal obligation?

Mr. CARLSON. It would have the effect, I believe since the outlays are so slow, of allowing us to, based on the same outlay numbers, make a larger amount of obligation authority available to all the States.

CHARACTERISTICS OF DEMO PROJECTS

Senator DOMENICI. Mr. Mead, has GAO done an indepth, long-term evaluation of demonstration programs? You gave me some numbers. I am not aware of a report. Do you have a report that looks at it also?

Mr. MEAD. Yes, sir; we have one that looked at the demonstration projects for 1987. It seemed fair to look at those because some time has transpired, to see what demonstrations States were starting. And we found, I would say, four notable features about them.

Many times, demonstration projects are not in State plans or regional plans. Second, the money that appears in the authorization for them is often a very small fraction of their cost. For the 1991 reauthorization, FHWA is estimating that the current crop of \$6 billion is probably going to cost in the neighborhood of \$25 billion by the time you are done.

And the third is that the money is available in perpetuity, unlike the normal highway programs that have a deadline on the availability period and are funded under the obligation limitations.

And a fourth, but I would not want to get too far into this, is that there are some questions about just how innovative these projects are, or what they demonstrate in some instances. There are clearly exceptions. But some appear fairly ordinary, one might say.

Senator DOMENICI. What is the date on the report? And is it public now?

Mr. MEAD. It is the May 1991 report.

Senator DOMENICI. I appreciate that. I am sorry, I have not looked at it heretofore.

PUTTING MA AND DEMO PROJECTS UNDER OBLIGATION CEILING

Could you, Mr. Carlson, explain one more time for me, please, because I did not quite get it—the chairman asked a question, his last question, and you said that if that were done it would make

more money available in the normal program. What is it that would be done?

Mr. CARLSON. Well, we constrain our obligation authority by the amount of outlays that we expect to have, based on the normal payout curves for the Federal Aid Highway Program. In other words, we anticipate that if we obligate \$1 on a project, that the first year we will pay out about 16 cents, and the next year about 54 cents, and then the rest over the next 2 or 3 years.

And what happens in reality is if that obligation does not occur, like it would not for these demonstration projects, the outlay estimates that we base that on are not going to outlay at the same rates. So if we could have minimum allocation and demonstration projects under the obligation ceiling, we could develop some outlay curves that would give us a better idea of how much money will actually be spent.

And I think the impact of that would be that we could probably put more obligation authority on the table for all programs, based on the fact that some of these programs are spending out slow. At least it would give us the ability to use the money a little better.

Senator DOMENICI. I wonder if the GAO would have the capability to respond to this question for this record in due course, and tell me how long it would take. I would like to take that last response of the acting administrator and have you put that into an actual dollar flow, in both BA and outlays, and tell us what would happen if that occurred.

Could you do that?

Mr. MEAD. Yes; I think, working with the Department, we probably could do that.

[The information follows:]

LETTER FROM KENNETH M. MEAD

B-253984

August 10, 1993

The Honorable Pete Domenici
United States Senate

Dear Senator Domenici:

The purpose of this letter is to provide you with information that you requested on funding alternatives for highway demonstration projects authorized under the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. Specifically, you asked us to analyze (1) the effect on states' funding levels of redistributing ISTEA demonstration project funding as federal-aid highway program apportionments and (2) the effect on states' rates of obligation of bringing ISTEA demonstration projects under the annual obligation limitation.

You requested these two analyses as a follow-up to our March 31, 1993, testimony entitled Surface Transportation: Funding Limitations and Barriers to Cross-Modal Decision Making (GAO/T-RCED-93-25). That testimony presented a number of concerns regarding the costs of authorizing a large number of demonstration, or special, highway projects and the limited payoff that is associated with this type of highway investment.¹ As our testimony noted, demonstration projects tend to have a slow rate of obligation. For example, in 1991, only 36 percent of funding authorized for demonstration projects 4 years earlier had been obligated.

Our first analysis considered the impact on individual states' total funding levels of redistributing ISTEA demonstration project funding. This analysis assumed the hypothetical scenario that ISTEA had not included demonstration projects. We performed the analysis by assuming that ISTEA's demonstration project funds were redistributed to the states in accordance with each state's percent share of apportioned funding for federal-aid highway formula programs.²

In brief, under the first analysis, the hypothetical scenario tended to favor states that received little

¹Demonstration, or special, projects fall into several distinct categories but are generally specific construction projects identified by name in legislation. Projects can range in scope from paving a gravel road to building a multilane highway.

²Most authorized highway funding is apportioned, meaning that it is divided among the states according to a statutory formula. In contrast, demonstration funds are allocated on a project-specific basis.

funding for demonstration projects relative to their overall federal-aid highway funding. Under this scenario, 31 states plus the District of Columbia and Puerto Rico would have received more funding if demonstration project funds were redistributed as federal-aid highway program apportionments; 19 states would have received less funding.

The second analysis assumed the status quo--that the distribution of ISTEA demonstration project funding would remain unchanged--but also assumed that these demonstration projects would be brought under the annual obligation limitation. (The obligation limitation is enacted by the Congress in authorizing legislation, and repeated or modified in subsequent appropriation acts. It restricts the rate at which states may obligate their apportioned funding.) Under current law, the obligation limitation applies to the major federal-aid highway programs, such as the Surface Transportation Program. However, a few funding categories, including allocations for demonstration projects, are not subject to the limitation. Thus, the full amount of a state's allocation for demonstration projects in a given year is now available for immediate and full obligation in that same year--though only for the specified projects. In contrast, under our alternative analysis for this scenario, states could use obligational authority associated with demonstration projects for other programs if projects were brought under the obligation limitation. This is in keeping with existing law, which permits the flexible use of all funding subject to the limitation.

In brief, under the second analysis, all states would benefit from the increased flexibility resulting from bringing demonstration projects under the obligation limitation. As noted above, the flexibility would occur because funding available for obligation that was previously restricted to use for demonstration projects would become available for any federal-aid highway program that states selected. It should be noted that the opportunity to obligate funds flexibly from year to year would in no way relieve states of the requirement to eventually set aside federal-aid highway funds for authorized demonstration projects. The reason is that budget authority remains attached to the projects for which it was authorized.

The flexibility inherent in the alternative scenario under the second analysis would come at a cost to some states. Seventeen states would receive less total funding available for obligation in a given year. The reason is that these states have a relatively large amount of demonstration project funding, and under this scenario, they would face a new cap on their obligations for these projects. The remaining 33 states plus the District of Columbia and Puerto Rico would benefit from a limitation on obligations for demonstration projects, since more obligational authority could be used for core federal-aid highway programs. It should be noted that any increases and decreases in states' obligational authority would not have a lasting effect on any state's funding, since ultimately,

no state would gain or lose any authorized funds to which it was entitled.

Both analyses related to the demonstration projects authorized in sections 1061, 1103, 1104, 1105, 1106, 1107, and 1108 of ISTEA. Over the 6-year authorization period (fiscal years 1992 through 1997), these sections of ISTEA authorized a total of \$6.229 billion for 539 projects. We focused our analyses on project authorizations for fiscal year 1993, which total \$1.179 billion; this permitted us to use actual state-by-state data and thus did not require us to rely on estimated future state-funding levels. Officials from the Federal Highway Administration (FHWA) told us that the results identified for fiscal year 1993 could be expected to serve as a good indicator of basic patterns that would be reflected throughout the ISTEA authorization period. We performed our work in June and July 1993 in accordance with generally accepted government auditing standards.

ANALYSIS 1: REDISTRIBUTION OF ISTEA'S DEMONSTRATION PROJECT FUNDS

On the basis of financial information provided by FHWA, we analyzed the state-by-state impact on funding for fiscal year 1993 under the assumption that funds reserved for demonstration projects in the same year (\$1.179 billion) were instead redistributed on the basis of each state's percent share of apportioned federal-aid highway program funds. Under this scenario, 31 states plus the District of Columbia and Puerto Rico would have received more authorized funding. The average dollar gain would have been \$12 million; \$70 million would have represented the high end of the range (Massachusetts), and \$1 million would have represented the low end (Vermont). Nineteen states would have received less authorized funding. For this group of states, the average loss would have been \$21 million; \$115 million would have represented the greatest loss (Pennsylvania), and \$102,000 would have represented the lowest loss (Rhode Island). Table 1 indicates which states' funding would have increased and decreased, and enclosure I details the supporting calculations and the method of analysis.

Table 1: Summary of Effects on Fiscal Year 1993
State Funding Under Redistribution of Demonstration
Project Allocations as Apportioned Funds

State-funding increases	State-funding decreases
Alaska	Alabama
Arizona	Arkansas
California	Illinois
Colorado	Iowa
Connecticut	Kansas
Delaware	Maine
District of Columbia	Minnesota
Florida	Mississippi
Georgia	Missouri
Hawaii	Nevada
Idaho	New Hampshire
Indiana	New Jersey
Kentucky	North Dakota
Louisiana	Oklahoma
Maryland	Pennsylvania
Massachusetts	Rhode Island
Michigan	Virginia
Montana	Washington
Nebraska	West Virginia
New Mexico	
New York	
North Carolina	
Ohio	
Oregon	
Puerto Rico	
South Carolina	
South Dakota	
Tennessee	
Texas	
Utah	
Vermont	
Wisconsin	
Wyoming	
Total: 33 (incl. DC and PR)	Total: 19
Average gain: \$12 million	Average loss: \$21 million
Range of gains: \$1 million to \$70 million	Range of losses: \$102,000 to \$115 million

ANALYSIS 2: OBLIGATION LIMITATION IMPOSED
ON DEMONSTRATION PROJECTS' FUNDING

If demonstration projects were brought under the obligation limitation, all states would benefit from an increase in their flexibility to target annual obligations to programs and projects that were ready to go. At present, as we noted in our March 31, 1993, testimony, funds for demonstration projects can remain unobligated for years. In contrast, if projects were brought under the obligation limitation, authorized funding would no longer sit idle. The reason is that, under our second analysis, states would receive an annual block of the obligation limitation to use

flexibly across programs and demonstration projects, whereas at present, states are restricted from using obligational authority associated with demonstration projects for any other purpose. Because states have traditionally used almost all of their obligation limitation in any given year, it is reasonable to expect that a greater amount of total apportioned and allocated funding would be obligated each year if projects were made subject to the limitation.

It should be noted that no state would gain or lose total funding if demonstration projects were placed under the obligation limitation; only the rate at which states have the opportunity to spend the funds would change. This would cause some variation in each state's annual obligation authority, but would not affect the total amount of funding that they would eventually have available for obligation. Moreover, the benefits associated with states' increased flexibility to target obligations where they were most needed could outweigh any decrease in annual obligational authority that a state might face.

Gains and Losses of Annual Obligation Authority

Using FHWA's financial information, we analyzed the state-by-state impact of making demonstration project funds subject to the fiscal year 1993 obligation limitation.³ Under this scenario, 33 states plus the District of Columbia and Puerto Rico would have received more obligational authority if projects were made subject to the obligation limitation. The average dollar increase for fiscal year 1993 obligational authority would have been \$2 million; \$15 million would have represented the high end of the range (Massachusetts), and \$14,000 would have represented the low end (Michigan). Seventeen states would have received less obligational authority. For this group of states, the average decrease would have been \$5 million; \$23 million would have represented the greatest decrease (Pennsylvania), and \$14,000 would have represented the lowest decrease (New Hampshire). Table 2 indicates which states' obligational authority would have increased and decreased, and enclosure II details our supporting calculations and our method of analysis.

Again, it should be noted that these increases and decreases would be temporary, since no state would gain or lose any authorized funding to which it was entitled. Moreover, the effect of any short-term decreases would be mitigated by the benefits of having the ability to use obligational authority that was previously attached to demonstration projects for core federal-aid highway programs until the demonstration projects became ready-to-go.

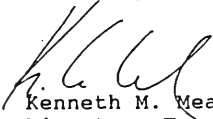
³Traditionally, demonstration projects are exempt from the annual obligation limitation. The Bush administration's fiscal year 1993 budget request proposed that projects be held under the obligation limitation, but this proposed change in legislation was not enacted by the Congress.

Table 2: Summary of Effects on States' Obligational Authority for Fiscal Year 1993 if Demonstration Funds Were Made Subject to Obligation Limitation

Obligational authority increases	Obligational authority decreases
Alaska	Alabama
Arizona	Arkansas
California	Illinois
Colorado	Iowa
Connecticut	Maine
Delaware	Minnesota
District of Columbia	Mississippi
Florida	Missouri
Georgia	Nevada
Hawaii	New Hampshire
Idaho	New Jersey
Indiana	North Dakota
Kansas	Oklahoma
Kentucky	Pennsylvania
Louisiana	Virginia
Maryland	Washington
Massachusetts	West Virginia
Michigan	
Montana	
Nebraska	
New Mexico	
New York	
North Carolina	
Ohio	
Oregon	
Puerto Rico	
Rhode Island	
South Carolina	
South Dakota	
Tennessee	
Texas	
Utah	
Vermont	
Wisconsin	
Wyoming	
Total: 35 (incl. DC and PR)	Total: 17
Average increase: \$2 million	Average decrease: \$5 million
Range of increases: \$14,000 to \$15 million	Range of decreases: \$14,000 to \$23 million

We hope that this information is helpful to you. Please call me at (202) 512-6001 if you have any questions.

Sincerely yours,


Kenneth M. Mead
Director, Transportation Issues

ENCLOSURE I

ANALYSIS OF IMPACTS OF REDISTRIBUTING DEMONSTRATION
PROJECT FUNDS AS A PERCENTAGE OF APPORTIONMENTS

Table I.1 details the state-by-state dollar impacts of a hypothetical redistribution of fiscal year 1993 demonstration project funds. The comparison was accomplished in accordance with the following methodology:

Step 1: We listed each state's total apportionments for fiscal year 1991. These appear as column 2 of table I.1.

Step 2: We determined each state's fiscal year 1993 funding for demonstration projects (base case). This is shown as column 3 of table I.1.

Step 3: We calculated an alternative scenario by redistributing fiscal year 1993 funding for demonstration projects to all states in accordance with each state's percent share of total fiscal year 1993 apportioned funds. This is shown as column 4 of table I.1.

Step 4: We compared individual states' shares of the total funding reserved for demonstration projects under the base case with the alternative scenario. This comparison is shown in column 5 of table I.1. States with a positive difference would gain funding under the hypothetical redistribution of ISTEAs demonstration project funding.

Table I.1: Dollar Impacts of Redistributing
Demonstration Project Funds

1	2	3	4	5
State	Total apportionments FY 1993 (a)	Base case: actual FY 1993 project allocations (b)	Alternative scenario: redistributed project allocations par FY 1993 share of apportionments (c)	Difference (d)
Alabama	295,013,522	30,537,727	19,871,234	(10,666,493)
Alaska	213,429,359	0	14,375,968	14,375,968
Arizona	252,834,828	2,274,913	17,030,189	14,755,276
Arkansas	202,071,188	71,500,817	13,610,914	(57,889,903)
California	1,840,470,852	68,121,811	110,497,243	44,375,632
Colorado	209,608,042	540,758	14,118,575	13,577,817
Connecticut	338,411,288	14,805,585	22,794,379	7,988,794
Delaware	70,184,032	0	4,727,388	4,727,388
Dist. of Columbia	95,385,655	4,120,951	6,424,894	2,303,943
Florida	718,854,034	33,482,251	48,419,872	14,937,621
Georgia	506,742,790	20,695,748	34,132,889	13,436,943
Hawaii	121,802,482	1,118,810	8,204,252	7,085,442
Idaho	112,637,700	3,411,264	7,586,941	4,175,677
Illinois	603,998,258	106,405,004	40,683,528	(67,721,476)
Indiana	375,087,994	17,695,842	25,254,813	7,568,971
Iowa	212,848,512	21,208,482	14,323,237	(6,885,245)
Kansas	194,248,484	13,812,187	13,084,001	(528,186)
Kentucky	258,668,757	4,027,718	17,423,024	13,395,308
Louisiana	264,541,540	13,582,817	17,818,732	4,236,115
Maine	85,059,477	34,888,222	5,729,354	(29,158,868)
Maryland	295,897,508	8,098,943	19,930,777	11,833,834
Massachusetts	1,082,795,804	1,100,163	71,586,755	70,486,592
Michigan	464,121,007	30,983,259	32,608,953	1,625,694
Minnesota	238,547,741	38,923,398	18,067,887	(22,855,531)
Mississippi	195,597,299	18,381,754	13,174,853	(3,206,901)

1	2	3	4	5
State	Total apportionments FY 1993 (a)	Base case: actual FY 1993 project allocations (b)	Alternative scenario: redistributed project allocations per FY 1993 share of apportionments (c)	Difference (d)
Missouri	380,220,208	31,565,051	25,610,504	(5,954,547)
Montana	165,091,369	3,358,430	11,120,064	7,763,634
Nabraska	139,979,103	2,207,618	9,428,577	7,220,961
Nevada	105,244,815	19,681,985	7,088,978	(12,593,007)
New Hampshire	82,373,707	5,985,633	5,548,448	(437,185)
New Jersey	491,909,567	37,834,422	33,133,567	(4,700,855)
New Mexico	179,853,881	1,734,155	12,114,423	10,380,268
New York	920,433,497	68,281,732	81,997,668	5,715,934
North Carolina	445,703,389	27,861,668	30,021,256	2,159,588
North Dakota	105,774,283	13,239,251	7,124,641	(6,114,610)
Ohio	637,682,919	29,491,829	42,952,427	13,460,598
Oklahoma	241,783,414	16,509,904	16,285,812	(224,092)
Oregon	200,414,174	8,577,542	13,499,303	4,921,761
Pannsylvania	740,500,732	164,410,986	49,877,929	(114,533,057)
Puerto Rico	88,473,690	0	5,959,325	5,959,325
Rhode Island	107,593,422	7,348,718	7,247,173	(101,545)
South Carolina	218,305,854	7,216,324	14,569,720	7,353,396
South Dakota	113,540,248	671,288	7,647,734	6,976,448
Tennessee	354,356,238	5,811,577	23,868,383	18,256,806
Texas	1,125,554,208	46,247,510	75,813,987	30,566,477
Utah	127,594,198	2,032,504	8,594,368	6,561,862
Vermont	75,271,842	3,729,366	5,070,088	1,340,722
Virginia	389,899,001	27,512,329	25,262,438	(1,249,891)
Washington	400,007,435	27,107,562	26,943,312	(164,250)
West Virginia	160,371,192	58,140,821	10,802,127	(47,338,694)
Wisconsin	337,959,860	13,332,464	22,763,972	9,431,488
Wyoming	114,248,153	4,329,368	7,695,416	3,366,050
TOTAL	17,496,794,104	1,178,532,071	1,178,532,071	0

(a) Source: FHWA.

(b) Source: FHWA.

(c) Source: FHWA.

(d) Derived: column 4 - column 3.

Note: FY = fiscal year. A positive difference in column 5 indicates that a state gains funding under the alternative scenario. A negative difference indicates that a state loses funding under the alternative scenario.

ENCLOSURE II

ANALYSIS OF IMPACTS OF PLACING DEMONSTRATION PROJECTS
UNDER THE OBLIGATION LIMITATION

Table II.1 details the state-by-state dollar impacts that would occur if funding for demonstration projects were made subject to the obligation limitation. The analysis focuses on the impact on each state's obligational authority. In fiscal year 1993, total obligational authority was approximately 80 percent of total authorized funding.

The following description of our methodology is broken into three related parts: (1) the base case, which sets up each state's obligational authority under current law; (2) the alternative scenario, which determines each state's obligational authority if demonstration projects were made subject to the obligation limitation; and (3) the comparison of the base case and the alternative scenario.

STEP 1: BASE CASE

We began our analysis of the base case (current law) by determining each state's actual share of the total fiscal year 1993 obligation limitation.¹ States' dollar shares of the fiscal year 1993 limitation are shown as column 2 of table II.1, and their percent shares of the obligation limitation are shown as column 5 of table II.1.

Next, we determined each state's fiscal year 1993 allocated funding for demonstration projects. This is shown as column 3 of table II.1. Because demonstration projects are not subject to the obligation limitation under current law, the full amount allocated for demonstration projects may be obligated. Thus, each state's obligational authority for demonstration projects is simply equal to its project allocation.

Last, by adding together each state's obligation limitation (column 2) and demonstration project allocation (column 3), we determined each state's total obligational authority under the base case. This is shown as column 4 of table II.1.

STEP 2: ALTERNATIVE SCENARIO

We analyzed the outcome of making demonstration projects subject to the obligation limitation by giving each state a fixed percentage of obligational authority for demonstration projects. This was set at 80 percent of each state's fiscal year 1993 demonstration project funding. We selected 80 percent because this is approximately the amount of apportioned funding subject to the obligation limitation that was made available for obligation in fiscal year 1993. Each state's 80-percent share of demonstration project funding is shown in column 6 of table II.1.

Next, since 100 percent of demonstration project funding was available for obligation in fiscal year 1993, applying an obligation limitation of 80 percent to these projects leaves a remaining balance of 20 percent. The 20-percent share is shown as column 7 of table II.1. Our analysis of the alternative scenario then assumes that this balance of obligational authority is freed up for redistribution among the states.

Thereafter, we figured what each state would have received on the basis of its share of the total obligation limitation for fiscal year 1993, which refers back to column 5 of table II.1. The results of the 20-percent redistribution are shown as column 8 of table II.1.

Last, by summing up each state's (1) individual obligation limitation (column 2), (2) 80-percent share of its demonstration project funding (column 6), and (3) share of the redistributed 20-percent remaining balance of demonstration project funding (column 8), we were able to determine each state's total obligational authority under the alternative scenario. This is shown as column 9 of table II.1, and provides the sum total for the alternative scenario. Note that, in both the base case and the alternative scenario, total funding available for obligation (\$14,389,839,111, shown as the total of columns 4 and 9) is identical.

¹The dollar amounts shown exclude obligational authority for programs including Highway Planning and Research, Administration, and Federal Lands. Although these programs are technically part of the obligation limitation, they may be obligated at 100 percent of their total funding, and thus are not subject to constraint.

STEP 3: COMPARISON

To complete the analysis, we compared individual states' total fiscal year 1993 obligational authority under the base case (column 4) with the alternative scenario (column 9). This comparison is shown in column 10 of table II.1. States with a positive difference would gain obligational authority under the hypothetical redistribution of ISTEA's demonstration project funding.

Table II.1: Dollar Impacts of Placing Demonstration Projects Under Obligation Limitation

1	2	3	4	5	6	7	8	9	10
State	FY 1993 obligation limitation (a)	FY 1993 project allocations (b)	Total ob. auth. under base case (c)	State share of total ob. lim. for FY 1993 (d)	50% of FY 1993 project alloc. (e)	20% of FY 1993 project alloc. (f)	Redistributed shares of 20% of FY 1993 project alloc. total (g)	Total ob. auth. under alternative scenario (h)	Difference (i)
Alabama	218,942,778	30,537,727	249,480,505	1.85728%	24,450,182	6,107,545	3,908,218	247,278,175	(2,201,330)
Alaska	171,827,803	0	171,827,803	1.300612%	0	0	3,065,825	174,893,428	3,065,825
Arizona	174,901,884	2,274,913	177,176,797	1.32389%	1,819,930	454,983	3,150,467	179,842,081	2,885,484
Arkansas	137,839,733	71,500,817	209,340,550	1.64317%	87,200,654	14,300,163	2,459,235	197,499,822	(11,810,928)
California	1,203,089,261	66,121,811	1,269,211,072	9.106293%	32,887,289	13,224,322	21,484,088	1,277,420,847	8,238,775
Colorado	168,752,068	640,758	169,392,844	1.277331%	432,606	108,152	3,010,750	172,193,443	2,902,389
Connecticut	272,448,321	14,805,585	287,253,906	2.062243%	11,844,468	2,961,117	4,860,844	289,154,833	1,808,727
Delaware	56,504,043	0	56,504,043	0.427885%	0	0	1,008,104	57,512,147	1,008,104
Dist. of Columbia	78,793,487	4,120,951	82,914,438	0.541271%	3,296,781	824,190	1,370,093	81,460,320	845,902
Florida	489,272,806	33,482,251	502,755,057	3.553064%	26,785,901	8,996,450	8,372,420	504,431,027	1,675,970
Georgia	358,148,198	20,895,748	378,843,944	2.710622%	10,588,387	4,138,148	6,589,818	381,084,811	2,250,687
Hawaii	98,081,218	1,118,810	99,199,028	0.742252%	885,048	222,782	1,748,538	100,705,800	1,825,774
Idaho	90,842,813	3,411,284	94,094,077	0.684603%	2,729,011	682,253	1,817,896	95,929,720	835,843
Illinois	466,268,347	108,405,004	694,874,351	3.600708%	84,724,003	21,841,001	6,875,650	581,889,010	(18,005,341)
Indiana	282,978,108	17,895,642	290,873,751	1.990553%	14,156,874	3,539,168	4,891,982	281,826,844	(1,152,863)
Iowa	171,198,309	11,208,482	192,406,791	1.395647%	16,965,166	4,241,288	3,054,394	191,217,889	(1,184,902)
Kansas	156,380,351	13,812,187	169,996,538	1.183731%	10,899,750	2,722,437	2,760,150	170,068,231	87,893
Kentucky	195,951,046	4,027,718	199,978,764	1.483207%	3,222,173	805,543	3,496,014	202,889,233	2,890,471
Kentucky	208,048,027	13,582,817	222,630,844	1.562242%	10,600,094	2,716,832	3,759,881	223,843,802	1,013,158
Louisiana	68,490,028	34,886,222	103,386,248	0.518244%	27,910,578	8,977,644	1,221,770	97,812,374	(8,535,874)
Maine	208,701,266	6,096,943	214,798,209	1.578717%	8,477,354	1,819,388	3,725,484	216,902,315	2,104,108
Maryland	655,639,761	1,106,183	656,739,924	6.478572%	660,150	230,033	15,385,095	671,785,568	15,045,882
Massachusetts	348,112,822	30,912,299	378,996,081	2.834961%	24,788,607	6,196,852	6,210,773	378,110,126	(14,121)
Michigan	192,050,875	38,923,398	230,974,373	1.453969%	31,156,718	7,764,000	3,426,432	229,816,120	(4,366,247)
Minnesota	150,203,558	18,381,754	168,585,312	1.186832%	13,105,003	3,278,351	2,679,821	168,880,763	(590,529)
Missouri	289,077,285	31,565,051	320,642,336	2.168105%	25,262,041	8,313,010	6,157,504	319,488,630	(1,155,508)
Montana	132,912,423	3,356,430	136,268,853	1.006051%	2,685,144	871,266	2,371,328	137,968,883	1,700,040
Nebraska	112,894,039	2,207,818	114,902,558	0.853019%	1,786,093	441,529	2,010,820	116,471,632	1,568,097
Nevada	84,730,819	18,681,985	104,412,804	0.841552%	15,745,588	3,950,397	1,311,707	101,988,214	(2,424,860)
New Hampshire	68,317,755	6,985,633	72,303,388	0.601977%	4,798,508	1,192,127	1,163,193	72,289,454	(13,934)
New Jersey	386,028,533	37,834,422	433,842,955	2.987648%	30,287,338	7,568,884	7,065,850	433,381,720	(501,235)

(continued next page)

1	2	3	4	5	6	7	8	9	10
State	FY 1993 obligation limitation (a)	FY 1993 project allocations (b)	Total ob. auth. under base case (c)	State share of total ob. lim. for FY 1993 (d)	80% of FY 1993 project alloc. (e)	20% of FY 1993 project alloc. (f)	Redistributed shares of 20% of FY 1993 project alloc. total (g)	Total ob. auth. under alternative scenario (h)	Difference (i)
New Mexico	144,797,009	1,734,155	146,531,041	1.089012%	1,187,324	346,831	2,993,370	148,796,160	2,239,539
New York	741,028,303	56,281,732	797,309,035	3.809031%	45,029,380	11,259,348	13,220,848	789,272,334	1,864,489
North Carolina	317,002,781	27,661,869	344,664,650	2.399481%	22,286,334	5,375,314	5,655,730	344,847,823	83,398
North Dakota	85,157,169	13,239,251	98,396,420	0.844576%	10,361,401	2,874,850	1,119,312	97,267,889	(1,126,538)
Ohio	460,086,553	29,481,929	490,481,382	3.489205%	23,393,463	3,896,368	8,224,278	482,767,286	2,235,914
Oklahoma	177,127,583	19,509,804	194,237,487	1.345209%	13,207,823	3,301,981	3,170,885	184,106,391	(1,021,096)
Oregon	161,350,249	8,577,542	169,927,781	1.221504%	0,862,034	1,715,508	2,978,892	171,096,875	1,183,184
Pennsylvania	506,808,400	164,410,888	731,277,448	4.260787%	131,528,788	32,882,197	10,115,914	708,508,883	(22,766,563)
Puerto Rico	96,006,283	0	96,006,283	0.469035%	0	0	1,177,871	87,185,954	1,177,871
Rhode Island	86,921,745	7,340,718	93,970,463	0.855894%	5,878,974	1,466,744	1,545,441	84,046,161	75,998
South Carolina	170,829,049	7,218,324	177,836,373	1.291470%	0,773,039	1,443,265	3,044,077	178,437,168	1,600,613
South Dakota	91,408,440	971,288	92,060,728	0.881603%	537,026	154,237	1,930,860	83,577,329	1,486,603
Tennessee	288,385,087	5,611,377	274,008,664	2.031558%	4,466,282	1,122,315	4,768,508	277,072,156	3,866,192
Texas	641,897,796	45,247,510	687,145,306	6.372553%	36,169,008	9,048,502	13,920,521	683,110,325	5,971,019
Utah	102,724,050	2,032,504	104,756,554	0.777546%	1,826,003	406,501	1,832,727	106,182,700	1,428,228
Utah	66,600,157	3,720,369	84,329,523	0.458899%	2,883,483	745,973	1,081,183	84,664,533	335,310
Virginia	258,033,298	27,312,328	285,345,626	1.953125%	22,008,885	5,502,468	4,803,640	284,046,902	(988,920)
Washington	265,531,887	27,107,562	292,839,329	2.008664%	21,868,050	5,421,512	4,737,428	291,955,442	(684,087)
West Virginia	128,112,264	58,140,821	187,253,105	0.877289%	46,512,837	11,628,164	2,300,328	177,928,487	(9,324,938)
Wisconsin	229,459,000	15,332,464	232,761,584	1.012531%	10,885,887	2,866,497	4,272,253	254,367,320	1,605,738
Wyoming	91,979,393	4,329,366	96,308,729	0.889217%	3,483,493	865,873	1,641,028	97,063,884	773,155
TOTAL	13,211,307,640	1,178,532,071	14,389,839,111	100.000000%	942,828,637	235,708,414	233,706,414	14,389,839,111	(0)

(a) Source: FHWA. (c) Derived: column 2 + column 3.
 (b) Source: FHWA. (d) Derived: column 4 / column 4 total.
 (e) Derived: (80%)(column 3).
 (f) Derived: (20%)(column 3).
 (g) Derived: (column 3)(column 7 total).
 (h) Derived: column 2 + column 8 + Column 6.
 (i) Derived: column 9 - Column 4.

Note: Alloc. = allocation, FY = fiscal year, Ob. auth. = obligational authority.
 A positive difference in column 10 indicates that a state gains obligational authority under the alternative scenario. A negative difference indicates that a state loses obligational authority under the alternative scenario.

[CLERK'S NOTE.—The following material was submitted by the Federal Highway Administration:]

INCLUDING MINIMUM ALLOCATION AND ISTEAD DEMOS WITHIN THE OBLIGATION LIMITATION

Including Minimum Allocation (MA) and the ISTEAD Demonstration Projects (Demos) within the Federal-Aid Highways (FAH) obligation limitation could make more funding available for core FAH programs if actual obligations for MA and Demos fell short of estimated obligations.

Traditionally, with MA and Demos exempt from the limitation, an estimate of the obligations and resulting outlays associated with these (and other exempt) programs is made to "score" the DOT appropriations bill. The total FAH allowance, therefore, consists of the obligation estimate for exempt programs plus the limitation.

If actual obligations for any exempt programs (including MA and Demos) fall short of estimated obligations, then total FAH obligations decrease by that shortfall. Actual outlays would likely fall short of estimated outlays due to the decrease in total obligations. In this situation, the FAH program cannot fully utilize the budgeted outlay allowance when exempt obligations and outlays are lower than estimates made for scoring purposes. This shortfall in obligations could have been used to increase the FAH obligation limitation.

However, including MA and Demos within the limitation would prevent total obligations and resulting outlays from decreasing due to lower-than-estimated obligations for these programs. The current limitation would be increased by the amount of obligations estimated for MA and Demos. Then, if actual obligations for MA and Demos fell short of estimated obligations, obligational authority for other core FAH programs could be increased by the amount of the shortfall since the total limitation (including MA and Demos) would not exceed the initial limitation based on the estimated obligations for MA and Demos. In effect, all the obligations and resulting outlays that are "scored" would be used.

This limitation could allow CBO and OMB to consider lower estimates for the scoring of these currently exempt programs which would permit the enactment of a higher obligation limitation.

The following table illustrates how including MA and Demos within the FAH obligation limitation could make more funding available for other FAH programs. The scenario presented utilizes estimates contained in the fiscal year 1993 Appropriations Act. It assumes that actual fiscal year 1993 obligations for exempt programs equal current estimates—based on recent historical obligation trends—contained in the fiscal year 1994 budget. Excluding MA and Demos from the limitation, as currently enacted, results in a decrease of \$335 million in total obligations. Including these currently exempt programs within the limitation would allow an additional \$335 million in obligational authority to be distributed to the States for other (core) FAH programs under this scenario. Budget authority is not affected by this proposal.

INCLUDING MINIMUM ALLOCATION AND ISTEAD DEMOS WITHIN THE OBLIGATION LIMITATION
FISCAL YEAR 1993 BUDGET ILLUSTRATION

[Dollars in thousands]

	Estimates contained in fiscal year 1993 appropriations	Estimates contained in fiscal year 1994 budget	Change
Enacted limitation plus exempts			
Obligation limitation	\$15,326,750	\$15,326,750
Exempt Obligations:			
Emergency relief	300,000	551,843	+ \$251,843
Minimum Allocation	1,107,000	1,073,729	- 33,271
ISTEAD Demos	1,090,000	449,078	- 640,922
Other	180,000	267,025	+ 87,025
Total exempt	2,677,000	2,341,675	- 335,325
Total obligations	18,003,750	17,668,425	- 335,325

INCLUDING MINIMUM ALLOCATION AND ISTEAD DEMOS WITHIN THE OBLIGATION LIMITATION—
Continued
FISCAL YEAR 1993 BUDGET ILLUSTRATION
(Dollars in thousands)

	Estimates contained in fiscal year 1993 appropriations	Estimates contained in fiscal year 1994 budget	Change
Limitation including MA and Demos			
Obligation limitation:			
Regular (current)	15,326,750	¹ 15,662,075	+ 335,325
Minimum allocation	1,107,000	1,073,729	- 33,271
ISTEA Demos	1,090,000	449,078	- 640,922
Total Federal-aid limitation	17,523,750	17,184,882	- 338,868
Exempt obligations:			
Emergency relief	300,000	551,843	+ 251,843
Minimum allocation			
ISTEA Demos			
Other	180,000	267,025	+ 87,025
Total exempt	480,000	818,868	+ 338,868
Total obligations	18,003,750	18,003,750	

¹The fiscal year 1993 obligation limitation potentially could be increased by \$335 million due to the currently estimated shortfall in obligations for exempt programs (primarily ISTEAD Demos) from scored amounts while adhering to the overall FAH allowance of \$18.004 billion.

Senator LAUTENBERG. May I suggest to the Senator that last year in the appropriations bill for 1993 we did include the provision that is being discussed. You supported it. It was lost at conference.

That then would expedite the movement of funds to programs and projects that the States chose to fund.

Senator DOMENICI. I understand, Mr. Chairman. But it just seems to me that, you know, many things that go by the wayside in 1 year receive a little better focus of attention in a subsequent year. I frankly think that if the Senate and the House understood this, they would not dare leave that obligation authority hang out there for those long periods of time to the detriment of the overall program for the States, if that is what is occurring.

Also, I wonder, Mr. Mead, if you have drawn any conclusions about the \$6.2 billion and the residue of that, in analyzing that, have you come up with any similarities to an 1987 package which might permit you to predict for us what will probably happen to it also?

Mr. MEAD. I think it is a little early to tell. The mix of projects seem similar, although the 1987 authorization was \$1.4 billion. So with ISTEAD there are a lot more projects and a lot more money.

I think this year you have a special problem, which I was alluding to earlier, in that the trust fund is not as well off as it used to be. And in the next few days you will be getting the President's budget, and one issue is this 2.5 cents of the gas tax, and whether it goes to the trust fund. And if you do not have that money, that extra 2.5 cents going to the trust fund, you will not be able to fully fund ISTEAD. You just will not have enough money left. You will be short about \$12 billion.

Senator LAUTENBERG. That is one of the reasons there is a substantial debate about the 2.5 cents and where it goes. But, also, Mr. Mead, is it not fair to say that in 1987, the demonstration projects were then fully funded, not distributed over a series of years like we have now?

Mr. MEAD. The funds were allocated annually. But, right now, in this year, it is \$1.7 billion. Since ISTEA was enacted, only \$1.7 billion of the \$6 billion is currently available.

Senator DOMENICI. And only 25 percent of that has been obligated?

Mr. MEAD. Yes.

SPEND-OUT RATES OF STIMULUS FUNDING

Senator DOMENICI. Mr. Carlson, let me ask one question, then close with a word of appreciation to you and your people.

First, the highway money that is in the so-called stimulus package, have you testified as to how much of that would spend out in 1993, how much in 1994, 1995, and 1996, based upon the estimates?

Mr. CARLSON. I have not testified on that. We have an estimate in our budget that the 2.97 cents would result in an outlay in the neighborhood of \$316 million. That was based on our original proposal.

Senator DOMENICI. What is \$316 million?

Mr. CARLSON. We thought that that may outlay that much the first year.

Senator DOMENICI. In 1993 or 1994?

Mr. CARLSON. 1993.

Senator DOMENICI. The rest of 1993.

Mr. CARLSON. But that is very optimistic. Our original proposal was that under this bill, if passed by April 2, and with a 60-day bid received criteria on it, that work would be started as early as July 1. This would let us do some fairly extensive resurfacing-type projects, for example.

The House changed the bill to 90 days for bids received, and each month you come closer to bad weather in the northern part of the country, and I think that we are probably going to see less than that actually outlaid the first year. How much we really have not projected yet, because I do not think we wanted to do new projections, at least until we get what the actual figures are going to be.

Senator DOMENICI. So, if it is \$316 million or less for laymen the stimulus in 1993 will be \$316 million or less, is that correct?

Mr. CARLSON. That is outlays to the Federal Government. You have to understand, sir, that it is a reimbursable program, and the day that we are able to get the bill passed, we will have people standing by to put the obligation authority out so the States could obligate more of their apportionments. They will obligate the money and receive bids. And when they receive those bids and award projects, they will start ordering materials and supplies, and they will start putting people to work. So there are going to be a lot of things going on before it shows up on our books.

There will be a significant stimulus involved in this program that will not show up on our outlay tables.

Senator DOMENICI. In your shop, when you have \$10 billion in authority, or \$2 billion, let us say, and you put it out to the States, what is your conventional approach to how that money flows over the years?

Do you not have sort of a formula now that says, if it is \$2,300,000,000 in the first year, so much—tell us about that flow?

Mr. CARLSON. Sixteen percent the first year and 54 percent the second year I believe are the right numbers, and then it extends out over the next 3 years depending in part on how big the projects are and so forth.

Senator DOMENICI. Thank you very much. Let me indicate on behalf of my State, Mr. Carlson—I am not sure you are aware of this, but we were the first State that applied for some assistance in intermodal planning for a New Mexico-Mexico intermodal transportation center for trucks, air, and trains between Mexico and America.

It was not a big grant, a big amount of money, but I want you to know that it has put the State of New Mexico in a position where we should know in 5 or 6 months whether it is economically viable to build an intermodal transportation center for three railroads, and two Mexican railroads, around a little, tiny international airport, and along some major highways.

Frankly, I cannot imagine under the premise and philosophy of ISTEA that we could have done better, especially if it reaches fruition.

Mr. CARLSON. Sir, I took the opportunity when I was out in New Mexico speaking at your university to go down to that border crossing and look at it. And it looks like it has a lot of prospect. We were happy to be able to do that.

Senator DOMENICI. Thank you very much. Thanks, Mr. Chairman.

Senator LAUTENBERG. Thank you very much, Senator Domenici. With that you are free at last, and we thank you very much for your participation.

NONDEPARTMENTAL WITNESSES

SURFACE TRANSPORTATION POLICY PROJECT

STATEMENT OF GRACE CRUNICAN, DIRECTOR

INTRODUCTION OF WITNESSES

Senator LAUTENBERG. We would call Ms. Crunican and Mr. Kassoff to the witness table.

We are happy to see the return of Grace Crunican, having been here before on this side. We welcome each one of you and would ask you, Ms. Crunican, to give your testimony first here. The rules you know. You know what the clock means.

Ms. CRUNICAN. Thank you, Mr. Chairman. I want to thank you for the opportunity to appear before the committee today to discuss the implementation of ISTEA.

I am Grace Crunican, the director of the Surface Transportation Policy Project. We are a broad-based coalition of more than 100 public and private organizations. STPP came together in 1990 to assure that the Federal transportation policy promotes the attainment of critical national objectives for the environment, economic competitiveness and sustainability, energy conservation, and community enhancement.

FLEXIBLE FUNDING

There are several gains that were made with the passage of ISTEA. First among them is the issue of flexible funding. Though some categories remain, there is greater latitude now between the categories. The STP, NHS, and section 9 funds all contain provisions which allow flexibility between traditional highway and transit programs.

This flexibility was used only to a small degree during the first year of ISTEA. This is not surprising, given that the bill was signed after the fiscal year had begun and transportation improvement programs [TIP's] had already been approved.

It will take a while for the opportunity of this flexibility to sink in at the local level and have much effect. Even then, I do not anticipate a stampede to utilize this authority for two reasons.

First, there are many MPO's in States which have been hesitant to give up the transportation programs and political agreements of the past. They call it the pipeline of projects, and are hesitant to interrupt the flow.

Second, control of one's funds is difficult to give up. Transportation agencies no more want to contribute their valued section 9 funds to a new metropolitanwide thinking than a county or city would want to lay their former highway dollars on the table for consideration of alternative modes. Old habits die hard.

However, it is extremely important to stick with this flexible funding message on the Federal level. As a former deputy director of transportation for the city of Portland, I can attest to the conversion which can ultimately occur in a region when they stop thinking about narrow funding categories and start thinking about the region's future.

Portland began with an interstate withdrawal in 1975, so it has had almost 20 years to let the idea sink in. When ISTEA was passed, the region immediately began discussing the use of STP funds for light rail. Most other regions in the country will need some time to understand how flexibility can work to their advantage.

GAINS THROUGH ISTEA

The second gain through ISTEA was the integration of the Clean Air Act with transportation planning and project selection. ISTEA marries the planning and funding of the TIP's with the Clean Air mandated State implementation plans [SIP's]. This forces transportation officials to consider the implications of their actions on the environment and, specifically, air quality.

ISTEA also created the CMAQ category, and new program to target funds to transportation projects and programs that clean up the air.

Third, ISTEA directed STP funds through a suballocation to the metropolitan planning organizations. This is the first time funds have been directed to the regions rather than to local governments. This is logical, since transportation systems are regional in nature and the problems are not specific to one jurisdiction within a region.

But logic is one thing and politics is another. And I would just note that a great deal of work still needs to be done here.

Fourth, ISTEA for the first time required States to engage in long-range planning. Many States already had multiyear capital plans, but this requirement was different. It asks not for the project list but instead for the States to identify issues that the transportation system will be facing in 20 years. A list of 20 items for consideration have been identified for States, and a similar but shorter list of 15 items have been identified for the MPO's.

The final gain to be highlighted is public participation. The act calls for early and frequent participation by the public throughout the planning process. This requirement, when coupled with the planning requirements, provides hope that the transportation professionals will have some fresh perspective added to the way they have developed transportation systems in the past.

The inclusion of the enhancement program in ISTEA was very helpful in getting the public's attention and interest. At STPP we have been attempting to direct that interest beyond the enhancement program and back into the long-range planning process. This will ensure that the public articulates early in the process that broader concern for community values such as healthy environment and better designed communities that are walkable and bikeable.

These are the highlights of the legislation and its intent. I would now like to just take a few minutes of the committee's time to assess the progress that has been made.

PROGRESS IN IMPLEMENTATION

Reports from the first fiscal year of implementation are somewhat predictable. In total, States spent about 119 percent of their interstate money, and that reflects the old backlog that they had. Ninety-six percent of NHS, 73 percent of their FTA grants, 70 percent of STP funds, 42 percent of CMAQ money, and 22 percent of their enhancement money.

The ISTEA programs which were similar to the programs of the past spent out at a much higher rate than the ISTEA programs which were newly conceived, such as enhancements and CMAQ's. This is not to say that those of us working for inclusionary infrastructure planning are pleased with this with the slow pace. We are not. But we do understand the reasons behind the slow start and are working with citizens, MPO's, and the States to improve that balance in the future.

An issue which has hindered implementation of all new programs is the slowness of the regulatory process. The notice of proposed rulemaking has appeared in the Federal Register for metropolitan, statewide, and management systems planning. The docket closes on May 3, but this is about 16 months after the act was signed.

While FHWA offered what they called interim guidance last summer, this created a problem for some States and MPO's which delayed the ISTEA implementation.

This is especially true on the issue of conformity. The rulemaking notice period of 60 days ended for conformity on March 12, but the docket remains open. The merging of the Clean Air Act amendments and ISTEA will probably not actually take effect for another 2 years. This will be using up 4 of the 6 years covered by ISTEA. This is more than a disappointment, but conversation continues on the local level between environmentalists, MPO's, and the States.

Moving on to the issue of flexibility, only three States flexed NHS funds to STP categories in fiscal year 1992. Vermont flexed 50 percent of its NHS funds. Maine and Massachusetts used 29 percent and 6 percent, respectively. In total, however, this is 1 percent of the flexibility that was utilized.

Some progress was shown on the bridge program, where 15 States flexed bridge funds to STP or NHS, totaling \$343 million, which was 16 percent of the bridge funds authorized.

OBSTACLES TO IMPLEMENTATION

Finally, there are two obstacles to implementation at the State level which deserve mentioning. First, the gas tax in many States is constitutionally dedicated to roads. This limits a State's ability to take advantage of some of the flexibility provided by the Federal Government. Some State gas taxes cannot be used to match transit projects or some parts of the enhancement program involving such areas as historic preservation or rails-to-trails. They do not have this local match available, meaning that they are unable to come forward with the enhancement programs in the transit.

The second obstacle is that some States have existing allocation formulas which predate ISTEA. Frequently, these formulas distribute funds to all parts of the State or some parts of the State, and

do not match well with the new provisions ISTEAs has taken such as the STP suballocations and the enhancement programs.

As State legislatures meet this spring, some of these issues will be addressed. Virginia, for example, just passed some changes in this area. Other States will postpone the discussion on this issue until an agreed-upon approach can be devised.

This is just a quick overview of the legislation and some observations on how it is being implemented. Thank you for taking the committee's valuable time to stay abreast of this legislation and for the opportunity to testify.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you, Ms. Crunican. We have your complete statement and it will be made part of the record.

[The statement follows:]

STATEMENT OF GRACE CRUNICAN

Mr. Chairman and members of the committee, I want to thank you for the opportunity to appear before you to discuss the implementation of the Intermodal Surface Transportation Efficiency Act of 1991. I am Grace Crunican, the director of the Surface Transportation Policy Project, a broad-based coalition of more than one hundred public and private organizations. STPP came together in 1990 to assure that Federal transportation policy promotes the attainment of critical national objectives for the environment, economic competitiveness and sustainability energy conservation and community enhancement.

There are several gains which were made with the passage of ISTEAs. First among them is the issue of flexible funding. Though some categories remain, there is greater latitude now between the categories. The STP, NHS and section 9 funds all contain provisions which allow flexibility between traditional highway and transit programs. This flexibility was used only to a small degree during the first year of ISTEAs. This is not surprising given that the bill was signed after the fiscal year had begun and transportation improvement programs (TIP's) had been approved. It will take a while for the "opportunity" of this flexibility to sink in at the local level and have much effect. Even then, I do not anticipate a stampede to utilize this authority for two reasons. First, there are many MPO's and States which have been hesitant to give up the transportation programs and political agreements of the past. They call it the "pipeline" of projects and are hesitant to interrupt the "flow". Second, control of ones funds is difficult to give up. Transit agencies no more want to "contribute" their valued section 9 funds to a new metropolitan-wide thinking than a county or city would want to lay their former highway dollars on the table for consideration of alternative modes. Old habits die hard.

However, it is extremely important to stick with this flexible funding message on the Federal level. As a former deputy director of transportation for the city of Portland, Oregon, I can attest to the conversion which can ultimately occur in a region when they stop thinking about narrow funding categories and start thinking about the region's future. Portland began with an interstate withdrawal in 1975, so has had almost 20 years to let the idea sink in. When ISTEAs was passed the region immediately began discussing use of STP funds for light rail. Most other regions in the country will need some time to understand how flexibility can work to their advantage.

The second gain through ISTEAs was the integration of the Clean Air Act with transportation planning and project selection. ISTEAs marries the planning and funding of the TIP's with the Clean Air Act's mandated SIP's (State implementation plans.) This forces transportation officials to consider the implications of their actions on the environment and specifically on air quality. ISTEAs also created CMAQ—a new program to target funds to transportation projects and programs that clean up the air.

Third, ISTEAs directed STP funds through a suballocation to the metropolitan planning organizations. This is the first time funds have been directed to regions rather than local governments. This is logical since our transportation systems are regional in nature and the problems are not specific to one jurisdiction within a region. Logic is one thing, but politics is another. A great deal of work remains to be done.

Fourth, ISTEA for the first time required States to engage in long range planning. Many States already had multi-year capital plans, but this requirement was different. It asks not for project lists but, instead asks the States to identify the issues that the transportation system will be facing in 20 years. A list of 20 items for consideration have been identified for States, and a similar, but shorter, list of 15 items is required for MPO's.

The final gain to be highlighted is public participation. The act calls for early and frequent participation by the public throughout the planning process. This requirement, when coupled with the planning requirements, provides hope that the transportation professionals will have some fresh perspective added to the way they have developed transportation systems in the past.

The inclusion of the enhancement program in ISTEA was very helpful in getting the public's attention and interest. At STPP we have been attempting to direct that interest beyond the enhancement program and back to the long-range planning process. This will ensure that the public articulates early in the process their broader concern for community values such as a healthy environment and better designed communities that are walkable and bikeable.

These are the highlights of the legislation and of its intent. I would now like to take just a few minutes of the committee's time to assess the progress that's been made.

Reports from the first fiscal year of implementation are somewhat predictable. In total States spent: 119 percent of interstate (old money), 96 percent of NHS, 73 percent of FTA grants, 70 percent of STP, 42 percent of CMAQ, and 22 percent of enhancement funding (this is an average of State reports not—U.S. total).

The ISTEA programs which were similar to the programs of the past spent out at a much higher rate than ISTEA programs which were newly conceived such as enhancements and CMAQ. This is not to say that those of us working for more inclusionary infrastructure planning are pleased with this slow pace. We are not. But we do understand the reasons behind the slow start and are working with citizens, MPO's and States to improve that balance in the future.

An issue which has hindered implementation of all of the new programs is the slowness of the regulatory process. The notice of proposed rulemaking has appeared in the Federal Register for metropolitan, statewide and management system planning. The docket closes on May 3rd—about sixteen months after the act was signed. While FHWA offered what they called "interim guidance" last summer, this created a problem for some States and MPO's which has delayed ISTEA implementation.

This is especially true on the issue of conformity. The rulemaking notice period of 60 days ended for conformity on March 12, but the docket remains open. The merging of the Clean Air Act amendments and ISTEA will probably not actually take effect for another two years—using up four of the six years covered by ISTEA. This is more than a disappointment, but work continues on the local level between environmentalists, MPO's and the States.

Moving on to the issue of flexible funds, only three States "flexed" NHS funds to the STP category. Vermont flexed 50 percent of its NHS funds. Maine and Massachusetts used 29 percent and 6 percent respectively. In total, however, less than 1 percent of this flexibility was utilized. Some progress was shown on the bridge program where fifteen States flexed bridge funds to STP or NHS totalling \$343 million (16 percent of authorized bridged funds).

Finally, there are two obstacles to implementation at the State level which deserve mentioning. First, the gas tax in many States is constitutionally dedicated to roads. This limits a State's ability to take advantage of the flexibility provided by the Federal Government. Some State gas taxes cannot be used to match transit projects or some parts of the enhancement program involving areas such as historic preservation or rail-to-trail conversions. Since they do not have local matches which are flexible to non-road projects, many States have been slow to expend their enhancement funds and to utilize their flexibility to fund transit improvements.

The second obstacle is that some States have existing allocation formulas which predate ISTEA. Frequently these formulas distribute funding to all parts of the State and don't match well with some of the new approaches ISTEA has taken, such as the STP suballocations and the enhancement program. As State legislatures meet this spring some of these issues will be addressed. Virginia, for example, just passed some changes in this area. Other States will postpone the discussion of this issue until an agreed approach can be reached.

This was just a quick overview of the new legislation and some observations on how it is being implemented. Thank you for taking the committee's valuable time to stay abreast of this legislation's progress and for the opportunity to testify.

MARYLAND STATE HIGHWAY ADMINISTRATION

STATEMENT OF HAL KASSOFF, CHAIRMAN, INTERSTATE 95 IVHS CORRIDOR COALITION ADMINISTRATOR

Senator LAUTENBERG. Mr. Kassoff.

Mr. KASSOFF. Mr. Chairman, thank you for the opportunity to appear before the subcommittee. My name is Hal Kassoff, and I am the administrator of the Maryland State Highway Administration.

I am here today on behalf of the I-95 Corridor Coalition, which I have the honor to chair. The I-95 Corridor Coalition is a partnership of the major public and private transportation agencies which serve the Northeast corridor of the United States.

Included in the coalition are each of the 11 departments of transportation in the corridor, stretching from Maine to Virginia, 12 toll authorities that operate major facilities within the corridor, the transportation departments of Washington, DC, and New York City, as well as the Federal Highway Administration.

In addition, we have representation from the Federal Railroad Administration, the U.S. DOT Office of Intermodalism, Amtrak, and the American Trucking Association Foundation.

I have attached to my testimony a list of the current member agencies, as well as a copy of our organizational structure.

The mission of the coalition is to improve mobility and transportation efficiency in the Northeast corridor through the application of real time IVHS technology in a coordinated and a concerted way that emphasizes cooperation and communication, technology and teamwork.

Although our coalition uses the I-95 designation, we cover a broad geographic area in the Northeast which includes all modes as well as all major free and toll highways which parallel I-95.

While the ISTEA legislation contains a wide array of very progressive changes affecting surface transportation in the United States, I would like to concentrate on what I believe is among the most visionary and forward-looking provisions, the IVHS sections of title VI, part B.

ISTEA'S PROVISIONS FOR IVHS

The Intelligent Vehicle Highway System Program, which might better be called intelligent transportation systems, will provide us with a smarter intermodal surface transportation system utilizing technologies that are just beginning to emerge in the civilian sector of our economy; technologies that will invite crossovers into the civilian sector by companies that have in the past been almost exclusively defense oriented.

Mr. Chairman, you personally have been a patron saint of IVHS in America. Certainly, without your leadership and personal interest, our I-95 coalition could not have been formed. We thank you for your interest and support for our mission.

THE I-95 CORRIDOR COALITION

I come to this meeting both enthused and focused as the result of a 2-day workshop of the chief administrative officers of the coali-

tion held in Baltimore earlier this week. In fact, it just ended yesterday.

Over 100 people, including the CAO's and their key staff, met for 2 days to begin to turn our idea for cooperation into a plan of action. The goal of the workshop was to develop the framework for both the short- and long-term business plan for the entire corridor which each of our respective agencies could endorse.

We succeeded in defining such a framework and are now well on our way to producing a specific business plan that is simultaneously visionary and practical for making the I-95 corridor the 21st century transportation model of technology and teamwork. With the boost from ISTEA which cited I-95 as a priority corridor, we have quickly moved to establish our organization.

We have created a structure which includes an executive board made up of the CAO's of the transportation agencies in the corridor, and a steering committee chaired by Matt Edelman who I believe you do know, and he is from Transcom in New York, which includes key policy and senior technical staff from each of our members. We have expanded the geographic scope of the corridor as defined in ISTEA to include Virginia, Rhode Island, Massachusetts, New Hampshire, and Maine.

The I-95 corridor from Virginia to Maine contains 4 of the Nation's 10 largest urban centers with a population of over 40 million people, roughly 15 percent of the total U.S. population. It is among the Nation's most congested travel corridors with nearly the entire corridor in nonattainment of national air quality standards. The corridor is highly urban and multimodal, with transportation provided by numerous public and private modes. The corridor has the highest density of freight movements in the country and includes the largest port facilities on the east coast, which are vital to this Nation's economy.

Our vision for the coalition is really very simple, though the implications may be far reaching and complex. Our vision is for the providers of transportation services in the I-95 corridor to establish the necessary communication links so that collectively, as individual entities and as a coordinated team, we might operate our part of the system for the benefit of travel customers whose travel extends beyond our individual boundaries. Our vision is customer driven, it is focused on communication with customers and with each other, and it is based on the concept that we must coordinate the operation of each of our pieces of the system.

Our coalition has cooperatively accomplished a great deal in the few months that we have been organized, but the real work is yet to come. Our business plan will be ready in May and it will provide a detailed basis for the coalition and its members' agencies to begin our work. Mr. Chairman, our May meeting is in Princeton, NJ, your home State, and we would be especially grateful if you could join us on the afternoon of May 2 for the formal unveiling of our business plan.

Mr. Chairman, you and your colleagues in the Congress have demonstrated your recognition of a critical Federal responsibility in advancing IVHS applications for the transportation system in our vital Northeast corridor through your support of the I-95 coalition. I thank you for the assistance that the Congress has given. Our co-

alition members look forward to your continuing guidance and support.

We still have many questions to address. For example, we will soon have to face the extremely tough issue of how to allocate funds and how to share costs. But our overall mission is now before us, and with your continued support we can and we will make the transportation system of the Northeast corridor a prime example of what cooperative and coordinated actions can do to achieve real breakthroughs in teamwork and technology.

Thank you, again, for the opportunity to be here, and I would be pleased to answer any questions.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much, Mr. Kassoff. We have your complete statement and it will be made part of the record.

[The statement follows:]

STATEMENT OF HAL KASSOFF

Mr. Chairman, my name is Hal Kassoff, and I am the Administrator of the Maryland State Highway Administration. I am here today on behalf of the I-95 Corridor Coalition which I have the honor to chair. With me is Mr. Matt Edelman, Director of TRANSCOM, who chairs our Technical Steering Committee. The I-95 Corridor Coalition is a partnership of the major public and private transportation agencies which serve the Northeast Corridor of the United States. Included in the Coalition are each of the 11 Departments of Transportation in the Corridor stretching from Maine to Virginia, 12 toll authorities that operate major facilities within the corridor, the transportation departments of Washington D.C. and New York City as well as the Federal Highway Administration. In addition, we have representation from the Federal Railroad Administration, the USDOT Office of Intermodalism, AMTRAK and the American Trucking Association Foundation. I have attached to my testimony a list of the current member agencies as well as a copy of our organizational structure.

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While the ISTEA legislation contains a wide array of progressive changes affecting surface transportation in the United States, I would like to concentrate on what I believe is among the most visionary and forward looking provisions, the IVHS sections of Title VI-Part B. The Intelligent Vehicle-Highway System program (which might better be called Intelligent Transportation Systems), will provide us with a "smarter" intermodal surface transportation system utilizing technologies that are just beginning to emerge in the civilian sector of our economy--technologies that will invite crossovers into the civilian sector by companies that have in the past been almost exclusively defense oriented.

Mr. Chairman, you personally, have been a "patron saint" of IVHS in America. Certainly, without your leadership and personal interest our I-95 Coalition could not have been formed. We thank you for your interest and support for our mission.

I come to this meeting both enthused and focussed as the result of a two day Workshop of the Chief Administrative Officers of the Coalition held in Baltimore earlier this week. Over 100 people including the CAO's and their key staff met for two days to begin to turn our idea for cooperation into a plan of action. The goal of the Workshop was to develop the framework for both a short and long term Business Plan for the entire corridor which each of our respective agencies could endorse. We succeeded in defining such a framework and are now well on our way to producing a specific business plan that is simultaneously visionary and practical for making the I-95 Corridor the 21st Century's transportation model of technology and teamwork.

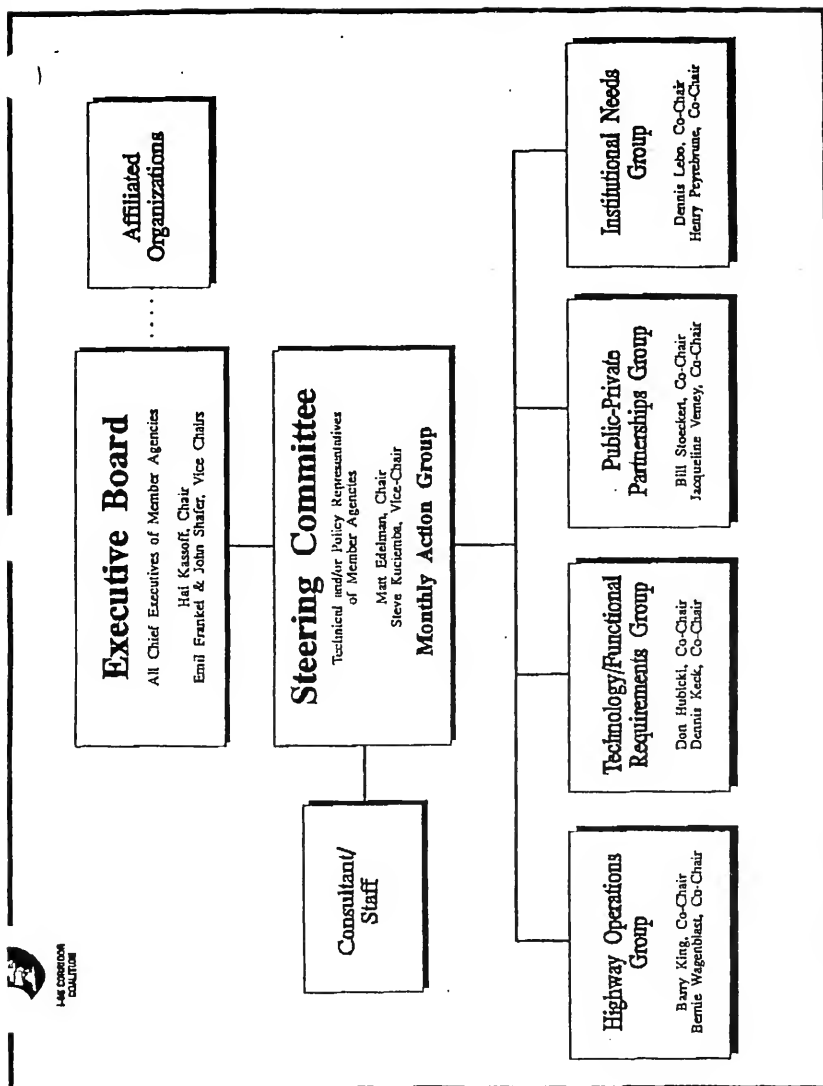
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Our vision for our Coalition is really fairly simple, though the implications may be far-reaching. Our vision is for the providers of transportation services in the I-95 Corridor - from Richmond to Portland - to establish the necessary communications links so that collectively - as individual entities and as a coordinated team - we might operate our part of the system for the benefit of travel customers whose travel extend beyond our individual boundaries. Our vision is customer driven, it is focused on communication with customers and with each other, and it is based on the concept that we must coordinate the operation of each of our pieces of the system.

Our Coalition has cooperatively accomplished a great deal in the few months that we have been organized but the real work is yet to come. Our Business Plan will be ready in May and it will provide a detailed basis for the Coalition and its member agencies to begin our work. Mr. Chairman, our May meeting is in Princeton, New Jersey—your home state—and we would be especially grateful if you could join us on the afternoon of May 2nd for the formal unveiling of our business plan.

Mr. Chairman, you and your colleagues in the Congress have demonstrated your recognition of a critical Federal responsibility in advancing IVHS applications for the transportation system in our vital Northeast Corridor through your support of the I-95 Coalition. I thank you for the assistance that the Congress has given. Our Coalition members look forward to your continuing guidance and support. We still have many questions to address. For example, we will soon have to face the extremely tough issue of how to allocate funds and how to share costs. But our overall mission is now before us, and with your continued support we can and we will make the transportation system of the Northeast Corridor a prime example of what cooperative and coordinated actions can do to achieve real breakthroughs in teamwork and technology. Thank you, and I would be pleased to answer any questions you may have.



Coalition Membership

as of February 1993

13 State & Local DOT's

Virginia
 District of Columbia
 Maryland
 Delaware
 Pennsylvania
 New Jersey
 New York City
 New York
 Connecticut
 Rhode Island
 Massachusetts
 New Hampshire
 Maine

12 Transportation Authorities

Delaware Turnpike Admin
 Maryland Transportation Auth
 Penn Turnpike Commission
 New Jersey Hwy Auth/Garden State Pkwy
 New Jersey Turnpike Commission
 Port Auth of New York/New Jersey
 New York State Thruway
 Delaware River & Bay Auth
 Delaware River Port Auth
 Triborough Bridge & Tunnel Admin
 Massachusetts Turnpike Authority
 Maine Turnpike Authority

6 Other Related Organizations

TRANSCOM
 Federal Highway Administration
 Amtrak (ex-officio)
 American Trucking Association (ex-officio)
 Federal Transit Administration (ex-officio)
 Federal Railroad Administration (ex-officio)

PROBLEMS FACING STATES AND MPO'S

Senator LAUTENBERG. Thank you for your kind words. Sainthood is not something that is familiar to me, but I appreciate the designation. We will have to wait and see if others agree. We will be in Princeton on May 3, so I would not suggest embargoing the unveiling until May 3 but we will look forward to having it.

I thank both of you for your comments. We want to just confirm some of the things that you reviewed in your testimony.

Ms. CRUNICAN, what is the biggest problem facing the States and MPO's in implementing the new provisions in ISTEA? Is it familiarity? Are we still in the middle of the learning curve? Or what is the reason for the slowness?

Ms. CRUNICAN. Senator, the MPO's would probably say it is the States and the States would probably say it is the MPO's to some extent, but I think that the regulations are new. And actually we have had guidance over the past year, and so one of the biggest problems is the clarity of what is expected out of the State and locals.

And the Federal Highway Administration, I did not mean to put a slam there. They have had a very difficult time trying to get regulations out, but in doing so the States were issued guidance. And in conversations with the States, some of them did not know whether the guidance that was issued would actually turn into the regulation and they were uncertain as to which course to take. So for long-range planning, for example, they were not certain as to what the expectations would be of them not having those.

To some extent, there was some hesitancy to use the flexible funding because ISTEA was not fully funded, and so by having a lower level of cash that they were able to work with, they chose not to do too much creative thinking, if you will. And I think last is this pipeline issue. A lot of political consensus making goes into putting together a transportation improvement plan, and given the lateness of the bill there was a lot of hesitancy to attempt to make any changes.

Senator LAUTENBERG. Questions have been raised about the ability of the MPO's to adjust to the new planning requirements under ISTEA. Are they faced with shortages of resources, information data, analytical tools? Do they need more facility to help them accomplish their mission?

Ms. CRUNICAN. To some extent they need more help. This guidance program from the Federal Government, in terms of what the expectations are, is really a critical part of it. The two tasks that are new, really, are this long-range plan that is required and then meeting the Clean Air Act.

There is a lot of discussion going on in terms of models. The black box, you will hear reference to the black box. And that has to do with the assessment of transportation projects and trying to determine whether the transportation improvement that is being proposed, some transportation system management proposals, anything that would be helpful in meeting the State implementation plans, trying to assess what those improvements will mean for clean air is a challenge before the States or before the MPO's right now.

And so to some extent there will be some work done with EPA and with the private sector on improvement of the models. To some extent, though, it is an issue of trying to inform the elected officials and the staff as to what the new game plan is and to try and match the expectations coming out of Washington in terms of the regulations. And so it really is going to take, I think, quite a long time to get that turned around.

Senator LAUTENBERG. Because there has been knowledge about what is required for some time now. And is it because there is still an old cultural bias that says, well, we have got to build roads and we did not have the same flexibility in mind some years ago as we are faced with now, or is there just lack of familiarity? What can we do to kind of move things along to get them to implement the new provisions?

Ms. CRUNICAN. Senator, I would not want to be on record as condoning the things that have happened. My group is very interested in going further and faster. Some of it is a lack of familiarity and some of it is they have been able to get away with it. They have been able to get away with not coming up with more creative things. There is very little pressure on them to do that.

Senator LAUTENBERG. More requirements, then.

Ms. CRUNICAN. Correct. And at the Federal—because the FHWA, EPA, and FTA have not yet decided on—what needs to happen at the Federal level is they need to be able to say what they are going to say no to. Are they going to say no to the transportation improvement plans, do the TIP's not match the SIP's and right now FHWA is not able to articulate what they are going to say no to. They will—I mean give them some time, but from the locals point of view 16 months have gone by and they still do not know what it is they are supposed to march to.

CMAQ FUNDS

Senator LAUTENBERG. How about the fact that lots of States see CMAQ money as a new pot of funds, and, given that these funds are going for air quality and congestion relief benefits, are the States just looking at this as the next project on the list of things that need funding?

Ms. CRUNICAN. As you saw from the numbers, in some cases they are just not spending them at all, and they are sitting there trying to figure out what it is they need to do with them. In other cases, States are, I think, doing some of that—slipping some of the—they are looking at their TIP's and saying, well, what is it on our TIP now that we could put on CMAQ and take care of some money.

There are others that are very thoughtfully—it is a mixed bag, as Frank Francois said. It is just a mixed bag out there, and so there are a number of them that are trying to assess what a good project is and how much it will contribute to air quality measurement, and that has taken some time. But there is a piece of each of those.

Senator LAUTENBERG. Of course, some of that is being propelled by deadlines in the Clean Air Act.

Ms. CRUNICAN. That is correct.

STP FUNDS

Senator LAUTENBERG. What about STP? Are these funds considered transit or highway funds by State and local officials?

Ms. CRUNICAN. By the State and local officials, I think that they start off as highway funds. At STPP, not to confuse the labels, but we certainly do not think of them—they come as flexible funds. With the exception of the safety money which is probably on its way to most road projects, the other categories within STP are fully flexible to highway and transit. And while they start with that bias, again the money comes from the highway trust fund. And the way the information comes out of Washington, it lists STP. Basically, it is in title I and so it comes out as a highway program and that has, to a certain extent, limited the creativity on the part of the locals.

Senator LAUTENBERG. It is a cultural change that has to be developed.

Ms. CRUNICAN. Absolutely.

Senator LAUTENBERG. Do you think DOT is properly monitoring State and local use of CMAQ money?

Ms. CRUNICAN. The Department is trying its best to monitor all the funds that are out there. Because they have no—or few, I do not mean to sound as though any project would slip by. Because the guidelines are not established, they really have very little against which to measure, against which to judge.

In terms of tracking, I have not seen listings of projects. I do know, on the STP funds, that they ask for less information about how STP funds are spent than they do for NHS funds and how they are spent. I could make an assumption that the same thing is true on CMAQ, but that would be unfair.

Senator LAUTENBERG. Again, it is a new experience for all parties concerned, and to get the focus directed is going to take some time. I think that they do a pretty good job. It is a question of whether it is enough yet to move things along.

PRIMARY OBJECTIVE OF I-95 CORRIDOR COALITION

Mr. Kassoff, how would you list the primary program that you are interested in in terms of improving transportation in the corridor?

Mr. KASSOFF. I think our No. 1 objective, by far, is to establish communication within modes and between modes. Interestingly, the highway mode, the first mode in the corridor, going back to the days of the revolution, is the least advanced in terms of being in touch with realtime operations on your own system, much less realtime operations on your neighbor's system.

So we operate with blinders on when we talk about the highway mode. The railroads and aviation, they are in touch with their own modes. They control the operations in their modes to a much greater extent. Trucking companies and bus companies that operate on the highways have made great advances in terms of being in touch with their fleets, but if the entire system is to work together, all modes, then we need to be in touch with one another. And so the investment early on, we believe, will be in communications.

Senator LAUTENBERG. What were the key factors in deciding that the corridor program was the best option? Were others considered?

Mr. KASSOFF. Well, clearly, we are in the densest part of the country with just not many places to expand the infrastructure, and so we have to operate that system much more efficiently. There are opportunities—particularly when unanticipated blockages occur in the system—there are opportunities to respond. There are times when there is excess capacity within the same mode or across modes, and if we were smart enough to know how to respond and how to get that information to our customers and had the facilities to do that, we think we can operate much more efficiently.

STATE COOPERATION

Senator LAUTENBERG. Have all the States within the corridor, Maine to Virginia, agreed to the program? Will they commit State money to it?

Mr. KASSOFF. Remarkably, they are all in the coalition, they have all agreed. The State of Vermont is one that we have to talk to because they really do not have—they do not sit quite astride the corridor the way the others do. But we will be talking with them. All of the States that have I-95 in the corridor, all of the States from Virginia to Maine with the exception of Vermont are in, and all of the major toll authorities.

The level of energy in Baltimore, the level of commitment, was really incredible to witness. We expected, the leadership of the coalition expected a little bit of why are we here and is this something we really want to do; we all are autonomous and we want to protect our autonomy. We did not encounter that at all.

SOURCE OF FUNDING

Senator LAUTENBERG. What is the source of funds that you are using to advance the corridor concept? Is that State moneys?

Mr. KASSOFF. Well, this is a major question. Within each State, there are programs that in various states of advancement in IVHS. Some are much more advanced than others.

And they are using the normal Federal program to advance. For example, in Maryland we have under construction a center costing \$7 million when using the normal Federal program to do that.

The money that was set aside for the priority corridors in ISTEA has been used as the seed money to get us together. We believe that 90 percent of the funds expended in the corridor in the future are going to be for intrastate programs in IVHS, because 90 percent of the travel is still within the State.

What we need in the future from ISTEA and from the Congress is incentives to spend that extra 10 percent or less to communicate with one another. And that is where the funding that was included in ISTEA has become so critical.

ENCOURAGEMENT AT FEDERAL LEVEL

Senator LAUTENBERG. What is Federal Highway doing to encourage the States to use their STP program moneys and other ISTEA funds to involve themselves in funding the IVHS projects?

Mr. KASSOFF. Well, they have been nothing but supportive. We have a program within Maryland. They sit on our various committees and have been very encouraging.

They have made a clear distinction for within State programs that they expect us to use our normal program categories, that the money, the \$600 million plus, was really to develop the technologies, to do operational tests.

An issue for the Congress, however, to address is whether some moneys should be set aside for deployment of parts of the system that could only be done on a multistate basis. And that is what you have begun to do and I think that will need to be continued. And that is probably the one exception for deployment that needs to a part of that separate category.

SUBMITTED QUESTIONS

Senator LAUTENBERG. We appreciate your encouragement of the development of the IVHS programs. We see great hope there and we are pleased to have your involvement with the I-95 corridor people. We will submit additional questions in writing to be answered for the record.

[The following questions were not asked at the hearing, but were submitted to the Departments for response subsequent to the hearing:]

GENERAL ACCOUNTING OFFICE

QUESTIONS SUBMITTED BY SENATOR LAUTENBERG

HIGHWAY TRUST FUND REVENUE ESTIMATES

Senator Lautenberg. Could the shortfall be eliminated if the Congress extends and credits to the highway account a substantial portion of the 2.5-cent portion of the fuel tax currently targeted to deficit reduction and scheduled to expire in fiscal year 1995?

Answer. Yes. Crediting a substantial portion of the 2.5-cent fuel tax currently targeted to deficit reduction would eliminate the projected highway account shortfall. We should note that at the time of our statement, the highway account shortfall was expected to be \$12.5 billion. However, revised revenue estimates released subsequent to our statement now show an improved revenue picture. As a result, the projected shortfall in the highway account is now expected to total \$10.1 billion, assuming full funding of ISTEA throughout the remaining life of the authorization. Although the severity of the shortfall has moderated, a substantial portion of the 2.5 cents would still be needed to eliminate the shortfall.

Senator Lautenberg. What is the feasibility of extending the 2.5-cent fuel tax for both the highway account and the mass transit account?

Answer. While both highway and mass transit needs outstrip available resources, the highway account currently faces an immediate challenge to its solvency whereas the mass transit account is financially sound. As noted above, the severity of the shortfall in the highway account has moderated slightly since our statement, and this slight improvement increases the feasibility of crediting a portion of the 2.5-cent fuel tax to the transit account. The fact that the highway account still faces pressing difficulties, however, does not leave much choice but first to take action to return the highway account to a sound footing.

Senator Lautenberg. What would be the impact on the highway and transit accounts' financial condition if 2.0 cents of the extended fuel tax were credited to the highway account, and 0.5 cents to the transit account?

Answer. Given the current projection of a \$10.1 billion shortfall, crediting 2.0 cents to the highway account from October 1, 1995 and through September 30, 1999 would leave the highway account with a \$1.6 billion reserve for the next reauthorization and a cash balance of \$2.0 billion at the end of the ISTEA

authorization period. Crediting 0.5 cents to the transit account over the same span of time would leave the transit account with a \$10 billion cash balance at the end of the authorization period. The transit account, however, would be fully solvent throughout the ISTEA authorization period either with or without the 0.5-cent credit.

Senator Lautenberg. Is a \$1 billion highway account safety cash cushion adequate, given the recent swings in expected revenue?

Answer. While a \$1 billion safety cushion would seem to be a bare bone minimum to guard against revenue fluctuations, we would agree with FHWA officials who have suggested that \$3 billion may be a more practical safety cushion. This is because of the extreme fluctuations in projected highway account revenues since enactment of ISTEA--about \$9 billion in just one year. If less than a \$3 billion safety cushion is sought, close monitoring would be needed to ensure that projected revenues to the highway account are actually being realized.

FUNDING FLEXIBILITY

Senator Lautenberg. Is funding flexibility being used to make up any difference between mass transit appropriations and ISTEA authorizations for mass transit?

Answer. It appears that this was not the case in fiscal year 1992, since mass transit programs were fully funded up to their authorized levels--approximately \$3.7 billion. Consequently, there was no pressure to use funding flexibility to make up a difference between appropriations and authorizations.

Fiscal year 1993 appropriations, on the other hand, were about \$1.5 billion below ISTEA's authorized level of \$5.2 billion. Thus, there may be some move by state and local governments to use flexible highway funds to augment their federal mass transit capital assistance. Any such decisions would be made through the federally required transportation planning process.

Senator Lautenberg. Your statement indicates that improved tools are needed for making cross-modal investment decisions. Why are current tools inadequate, and just what needs to be fixed?

Answer. ISTEA requires state and local planners and decision makers to consider all transportation modes when developing plans and programs. State and local officials will need help to accomplish this.

First, a common basis is needed to evaluate projects across modes. Highway evaluation and selection criteria focuses on moving vehicles while transit criteria focuses on movement of people. There are no common measures that would allow the comparison of highway and transit projects as to their mobility, environmental quality, cost-effectiveness, safety, and social and economic costs and benefits.

Second, better data collection tools and analytic methodologies are also needed to better evaluate transportation options. For example, the state of the art in evaluating the air quality impacts of transportation projects is not well advanced. In general, travel demand models, which are an important component to air quality analysis for transportation projects, were originally developed some 20 to 30 years ago to analyze the need for new or modified highway facilities. Because these models often do not incorporate or fully recognize such factors as vehicle speed or type, they are now ill-suited to be used to analyze the air quality impacts of transportation projects. DOT can assist states and local governments both by developing an investment framework to make cross-modal comparisons and by fostering development of improved analytic tools for assessing the impacts of transportation investment choices.

QUESTIONS SUBMITTED BY SENATOR SASSER

DEMONSTRATION PROJECTS

Senator Sasser. ISTEA included some 539 demonstration projects. Please provide the Subcommittee with any preliminary data regarding how many of the projects might be included in the states' proposed routes for the National Highway System. (States are due to submit their proposed routes to the Federal Highway Administration by April 30, 1993. The Federal Highway Administration will submit the total proposed route to the Congress by December 18, 1993.)

Answer. According to FHWA, about 43 percent of ISTEA's demonstration and special projects are on the proposed National Highway System. It should be noted that this figure is based on 430 proposed projects surveyed by FHWA in October 1991. Most of these projects were included in ISTEA, and although about 100 additional projects were ultimately included in ISTEA, FHWA officials believe that the 43 percent figure can be extrapolated to all ISTEA projects.

METROPOLITAN PLANNING ORGANIZATIONS

Senator Sasser. Enactment of ISTEA greatly enhanced the role of the Metropolitan Planning Organizations (MPOs) in the transportation planning and project selection process. One year after enactment of ISTEA, what impact have MPOs had in influencing states' transportation investment decisions?

Answer. Although we have not specifically looked at the MPO role in the decisionmaking process, we have discussed the barriers to using ISTEA's funding flexibility provisions with state and MPO officials in five states. Based on those discussions, it appears that the influence of the MPOs in this process varies on a case-by-case basis. There are several contributing reasons. First, the transportation community is still in the early stages of ISTEA implementation. Most officials at all levels of government spent the first year of ISTEA understanding the law and discussing how to implement it. Second, differences in the makeup of individual MPOs, such as any given MPO's resources available and its existing relationship with its state transportation department, all contribute to MPOs' ability to influence transportation investment decisions.

In the future, MPOs, particularly those in air quality nonattainment areas, may play a stronger role in project selection. This is because ISTEA allocates some funds for the Surface Transportation Program and the Congestion Mitigation and Air Quality Improvement Program to MPOs, which then select projects in consultation with the state. Moreover, as both MPOs and state transportation departments become more familiar with ISTEA requirements, building consensus may become easier.

BUREAU OF TRANSPORTATION STATISTICS

Senator Sasser. Your testimony indicates that states and localities have had some degree of uncertainty and difficulty in moving to the ISTEA goal of intermodalism. Along with the greater flexibility emphasized in ISTEA came the expectation that states and localities would make "smarter," more prudent decisions regarding project investments. To assist states and localities, ISTEA also created a Bureau of Transportation Statistics (BTS). The role of the BTS was envisioned as one of technical support and assistance to the states and localities in collecting transportation data and providing analysis, ultimately to improve the intermodal decisionmaking process. Also, the BTS is required to publish an annual report to the Congress on Transportation Statistics.

The first report of the BTS is due on January 1, 1994. In light of that deadline, what information can you provide to the Committee regarding the Bureau's effectiveness--i.e., staffing levels, the degree to which states and localities have sought technical assistance--in meeting its first report date.

Answer. The BTS's operations are just getting started. While the Department of Transportation's fiscal year 1994 budget request provides for 12 FTEs, the Bureau's current staffing level consists of four staff members--including the Bureau's highest ranking official, the Deputy Director, who is on special assignment to Vice President Gore for six months--plus two detailees. Position descriptions are being drafted to accommodate the Bureau's larger staffing needs, but the present staffing level means that only limited progress can be made in making statistics available to states and localities. Also, the present staffing level should present the Bureau with a real challenge in meeting a first annual report deadline of January 1, 1994.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND
TRANSPORTATION OFFICIALS

QUESTIONS SUBMITTED BY SENATOR LAUTENBERG

ACCURATE DEPICTION OF TRANSIT NEEDS

SENATOR LAUTENBERG: The Federal Highway Administration annually publishes a report on the conditions and performance of the highways and bridges of this country.

Question. Why do you believe that the numbers produced by FHWA are readily agreed to and accepted, while the FTA's projections are not given a great deal of credibility?

Answer. The FHWA gathers its data from the States, through a rigorous process that has been developed over the years. The collected data is the same as is usually employed by States in their own analysis and programming, which are also rigorous processes. The data collected by the FHWA is then analyzed according to procedures with which the States are familiar. The result is that the FHWA results are generally accepted by the States, and by the highway industry.

In past years, the FTA data collection process was not strong, and there was not full agreement on what data should be collected. This situation has improved considerably, and current need estimates are receiving a higher acceptability than in the past. Part of the reason why the FTA data was suspected by many over the past 12 years was the perception that the Administration was either anti-transit or luke warm to public transportation, and the feeling that needs were therefore being underestimated. Currently, this perception has generally abated.

Question. Do you believe that it is a worthwhile goal to have the Federal Highway Administration and the Federal Transit Administration produce a consolidated report that estimates the surface/passenger needs of this country?

Answer. Yes, especially under the ISTEA. The ISTEA provides flexibility among the surface modes, attempts to establish a level playing field, and features intermodal planning. Accordingly, it makes sense to produce a consolidated report.

Question. Do you believe such a report could accurately depict the economic development and cost trade-offs between highways and transit?

Answer. Over time, probably. But first a better understanding of the linkage between transportation and economic development need to be determined, and agreement would need to be reached on the relative "costs" of highways and transit. The costs to be included for both modes would need to be agreed upon, after which credible methods for estimating those costs would be needed. Only then can the trade-off issue be properly addressed.

AASHTO has been sponsoring research into the economic linkages between highways and economic development, and progress is being made. Some States have also done research of this type.

FUNDING FLEXIBILITY

SENATOR LAUTENBERG: Under ISTEA, States and urban areas are now allowed unprecedented flexibility to spend money on roads, transit or other programs.

Question. To what extent will meeting inter-related legislative mandates, such as those of the Clean Air Act and the Americans with Disabilities Act, require funding realignments by States or urban areas?

Answer. It will depend on the conditions faced by a given State or urban area. In those States or urban areas in a non-attainment status under the Clean Air Act, the Transportation Improvement Program can be heavily influenced away from new highway capacity and towards transit and other measures by the need to improve air quality. It is believed that the flexibility provisions will accommodate this shift of funding, and in some severe non-attainment States all but highway safety-related capital funds might be moved to other uses.

On the other hand, under EPA's currently proposed conformity regulation rural States in attainment status will find little if any need to transfer funds from one mode to the other, for air quality reasons. In all States, it is possible that some transfer of funds from highways to transit will be needed to accommodate the Americans with Disabilities Act, but overall the need for such funding does not appear to be huge at this time.

NATIONAL HIGHWAY SYSTEM

SENATOR LAUTENBERG: Section 1006 of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) requires the Secretary of Transportation to submit to the Congress by the end of calendar year 1993 a proposed National Highway System (NHS) with a list and description of highways proposed for the system, including a map showing the proposed designations. The NHS highway mileage is limited to 155,000 miles, subject to a 15 percent increase or decrease by the Secretary.

Question. What provisions are available that would permit NHS adjustments following final designation of the system?

Answer. To the best of my understanding of the ISTEA, there are no provisions for making such adjustments after Congress approves the NHS. We would anticipate that this issue might be addressed in the legislation adopting the NHS.

Question. What effect will defining the NHS have on State and local transportation officials and the private sector, especially regarding their funding decisions?

Answer. The effects will vary by State and metropolitan region, and will depend upon the map finally adopted for the NHS.

Generally, the NHS should be a positive economic factor for the private sector, in that one of its purposes is to provide for the interstate commerce required for most private sector activities. With the NHS, factories and suppliers should be able to make locational decisions with some surety as to the transportation system that is now or will become available, and they should have the assurance that the NHS will provide quality highways.

With regard to the States, the adoption of the NHS will provide the basic highway network for meeting their needs for both intrastate and interstate movements, and the backbone to support their own system of State and locality roads.

In metropolitan regions, the NHS will provide the connections with other metropolitan regions and rural areas necessary to support the urban economy. Urban area NHS roads need to be carefully planned in conjunction with other roads and transit, so that they will continue to serve the national needs for which the NHS is intended.

QUESTIONS SUBMITTED BY SENATOR SASSER

NEW HIGHWAY TECHNOLOGY

SENATOR SASSER: The Transportation 2020 document "The Bottom Line" cited improvements to material sciences and construction technology as ways to extend the durability of highway structures and provide cost savings.

Question. Do you have any specific data regarding technology advances in these areas, in light of ISTEA? Also, has AASHTO conducted any studies or surveys citing specific cost savings from improvements to material sciences and construction technology?

Answer. The principal highway research programs with which AASHTO is associated include the National Cooperative Highway Research Program (NCHRP), directed by AASHTO and managed by the Transportation Research Board of the National Research Council, and the now concluding 5-year Strategic Highway Research Program (SHRP), authorized by Congress and managed during its research period by a unit of the National Research Council.

Over the years and continuing at the present the NCHRP has produced many research results that have advanced highway technology, ranging from solving bridge repair problems to producing the background research necessary for AASHTO to develop a new national bridge code, from solutions for specific pavement problems to research allowing AASHTO to adopt a pavement design guide, and numerous other products. The funding to support this program was significantly increased by the ISTEA, and is already being put to work.

The SHRP has produced some 130 research products, which are described in a recently produced "SHRP Product Catalog," a copy of

which is being filed with the Committee together with this response. The SHRP research highlights the technology advances that will now be made, assuming a strong implementation effort of the kind now underway at the FHWA and AASHTO.

There are no definitive studies of all the cost savings from improvements to material sciences and construction technology, and AASHTO has not done a survey on this subject. The Transportation Research Board has investigated the return on research, and has published some reports. But there is a general understanding that the return on the dollars spent for highway research can be very large. It is of course recognized that some research efforts do not produce useful results. But when useful results are obtained, the benefits can be in the ratio of 20 to 1, or larger.

In 1987 the U.S. Congress Office of Technology Assessment published a report titled "Construction and Materials Research and Development for the Nation's Public Works; Science, Education, and Transportation Program." The report made the following finding, which is commonly accepted in AASHTO:

"...the benefits of even modest increases in materials R&D for highway repair, maintenance and construction alone could be \$15 billion to \$35 billion over the next 10 to 20 years. Compare these savings to the current federal and nonfederal investment in materials R&D for all types of public works of \$53 million to \$62 million, and the value of the investment in R&D becomes even more pronounced. Still more significant, much of this benefit could be obtained with materials that are available now, but are not used because of inadequate technology transfer, the perceived financial risks of using new materials, and government procurement practices."

AASHTO has been increasingly concerned about improving the implementation of new highway technology, a cause that is advanced by the ISTE. Using the new funding provided by the ISTE, AASHTO is working with the FHWA and TRB through the Civil Engineering Research Foundation to establish a new Highway Innovative Technology Evaluation Center (HITEC), which we hope to make operational this fall to specifically address the technology transfer and other factors cited by the OTA in its report.

HIGHWAY AGENCY WORKFORCE

SENATOR SASSER: When the Interstate System was initiated in 1956, the group prominent in that effort were civil engineers.

Question. In the aftermath of ISTE, with emphasis on new technologies such as IVHS, greater private sector involvement, and the changing relationship between state highway officials and Metropolitan Planning Organizations, how are State highway officials making modifications to the composition of its workforce?

Answer. The highway agency of today is organized to include a great many skills in addition to those of traditional civil engineer, and the role of the civil engineer is changing to focus

more on managing an array of resources. In January, 1993, AASHTO compiled and published a book containing the organization charts of our member departments, titled "Organizational Charts of AASHTO Member Departments 1992." A copy of the book is being filed with this response, and it illustrates the multi-faceted organization that is typical today.

The ISTEA is requiring still further diversification, as the states respond to new planning requirements, the new transportation enhancement program, the need for intermodal planning and programming, the need to consider transfers of funds across the modes, and a host of other issues. Several states are now working on IVHS projects, which often requires electrical engineering and computer skills of a new kind or degree.

An area of increased activity faced by all highway agencies, more intense in some States than others, is responding to environmental issues. States now must have experts in wetlands, noise and mitigation tactics, and the problems in satisfying Clean Air Act requirements are calling for specialties in another growing arena.

Adapting to these new human resource needs is costly, especially at a time when State budgets are strained, and experts in some areas are in short supply. But our member departments are nevertheless moving ahead.

INTERMODALISM

SENATOR SASSER: The General Accounting Office has cited a number of barriers to the States and localities in meeting the intermodal goals of ISTEA. One concern is that States and localities are having difficulty evaluation projects for intermodal investments.

Question. Has AASHTO conducted any surveys amongst its members that responds to the GAO concern?

Answer. The AASHTO Standing Committee on Planning (SCOP) has task groups working in a variety of areas requiring attention under the ISTEA, including intermodal and Metropolitan Planning Organization (MPO) issues. As part of their effort they have made surveys on both topics.

One of the surveys was done in mid-1992 on MPO issues, and resulted in a report titled "Metropolitan Planning Organizations and State Departments of Transportation," and a copy is being supplied with this response. An update survey is now underway on MPO issues.

Turning specifically to intermodal issues, the SCOP survey resulted in a report titled "A Survey of States' Current Multimodal Data Collection," a copy of which is also being supplied. The report provides an overview of intermodal data gathering and planning activities in the states, and indicates considerably variation across the nation. The intermodal program arena is still new and in a formative stage for most States and localities, and accordingly considerable work needs to be done to fully satisfy ISTEA and the issues raised by the GAO.

FEDERAL HIGHWAY ADMINISTRATION
QUESTIONS SUBMITTED BY SENATOR LAUTENBERG

HIGHWAY TRUST FUND REVENUE ESTIMATES

When ISTEA was enacted, a balance of \$2.7 billion was anticipated at the end of 1997. Now, only 16 months after enactment, the outlook has totally changed, and a highway account shortfall of \$12.5 billion is expected. The administration's overview budget document, A Vision of Change for America, lists extending the 2.5 cent per gallon gas tax as a revenue raising proposal that would generate \$2.6 billion annually in fiscal years 1996 through 1998.

SENATOR LAUTENBERG: What is FHWA's plan for the allocation of the 2.5 cents of the motor fuels tax that would be diverted from deficit reduction to the Highway Trust Fund?

ANSWER: It is not our intention to divert tax receipts from deficit reduction. The 2.5 cents a gallon motor-fuel tax currently dedicated to deficit reduction is scheduled to expire on September 30, 1995. The Administration is asking that the 2.5 cents be extended to 1999 and dedicated to the Highway Trust Fund (HTF). The Highway Account of the HTF would receive the revenues from 2 cents a gallon and the Mass Transit Account the revenues from 0.5 cent a gallon.

SENATOR LAUTENBERG: How much does FHWA now estimate the extension of the 2.5 cent tax will generate?

ANSWER: For FY's 1996-1999 extension of the 2.5 cents a gallon will generate an estimated \$13.6 billion of additional revenues to the HTF. The Highway Account will receive \$10.8 billion and the Mass Transit Account \$2.8 billion.

SENATOR LAUTENBERG: If the 2.5 cents is now expected to generate more revenue than expected just a couple of months ago, how much additional revenue is now expected compared to January 1993 revenue estimates? What factors account for any difference in revenue expectations?

ANSWER: The Treasury Department estimates used slightly more optimistic economic assumptions for the April revenue HTF estimates than were used in previous Administration's baseline budget in January. Disregarding the revenue increase from extension of the two and one-half cents a gallon motor-fuel tax the net increase for FY's 1992-1998 is \$1.322 billion for the Highway Account and \$103 million for the Mass Transit Account.

SENATOR LAUTENBERG: Revenue revisions are the primary reason we have gone from an expected revenue surplus of \$2.7 billion to a \$12.5 billion anticipated shortfall in about 16 months. How do you account for the volatility in revenue estimates?

ANSWER: The change in tax revenues estimates for FY's 1992-99 from January 1992 to April 1993 is a decrease of about \$7.1 billion for the Highway Account is due primarily to economic factors. Most of the remainder of the shortfall is due to the fact that the authorizations against the Highway Account for FY 1992-97 are about \$4.8 billion higher than estimated when ISTEA was passed due primarily to increases in the estimates of minimum allocation funds and hold harmless funds. Lower interest earnings due to lower interest rates and smaller Highway Account balances causing smaller interest earnings account for the most of the shortfall.

SENATOR LAUTENBERG: What are DOT and the Department of Treasury doing to ensure the revenue estimates being provided to Congress are reliable?

ANSWER: The revenue estimates are the primary responsibility of the Department of the Treasury and are based economic factors used in the President's Budget. The DOT reviews the Treasury estimates and offers comments where appropriate.

NATIONAL HIGHWAY SYSTEM

The FHWA budget justification prepared under the Bush Administration reported that funding at full ISTEA levels would have maintained the quality of the National Highway System at 1989 levels. However, FHWA notes that the quality of the NHS has already dropped below 1989 levels.

SENATOR LAUTENBERG: What is the type and magnitude of the NHS's drop in quality?

ANSWER: The principal decrease in quality results from increases in congestion on the urban Interstates and other freeway and expressways. From 1989 to 1991 the extent of peak hour congested travel on urban Interstate increased from 69.6 to 70.2 percent. On other freeways and expressways, the increase was from 59.9 to 61.4 percent. While the rate of increase in congestion was lower for the past two years than for most equivalent previous time periods, this reflects the recent economic slowdown and resulting reduced travel. Travel is already returning to more normal growth rates. On the other hand, pavement conditions have improved since 1989; there are fewer miles of poor pavement on all functional categories. Changes in bridge deficiencies are mixed, with a decrease in the number of structurally deficient Interstate and collector bridges, but an increase in deficient bridges on the other principal arterial system.

SENATOR LAUTENBERG: To what extent will future full funding of ISTEA erase any drop in quality?

ANSWER: Following is a table that contains the estimated investment requirements to maintain the NHS in the conditions and performance equivalent to that in 1991.

	NHS Investment to Maintain System	Total Estimated Funding in ISTE A	Estimated Shortfall
FY 94	\$20.9	\$17.2	\$3.8
FY 95	21.7	17.1	4.6
FY 96	22.5	16.5	6.0
FY 97	23.3	16.8	6.4

This shows that conditions and performance will not be maintained even with full ISTE A funding levels. The ISTE A funding level including estimated State match over the 4-year period, FY 1994 to 1997, will fall short by an estimated 24 percent of the level required to maintain 1991 conditions and performance on the NHS. This estimate of funding on the NHS is based on historical funding levels on the eligible functional systems. Under ISTE A, the States have the flexibility to spend a different proportion of their Federal-aid funds on the NHS.

SENATOR LAUTENBERG: What levels of Federal investment would be needed to "improve" the quality of the NHS?

ANSWER: Following is a table that contains the estimated investment requirements to improve the NHS to minimum conditions standards over a 20 year period.

	NHS Investment to Improve System	Total estimated Funding at ISTE A	Estimated Shortfall
FY 94	\$26.8	\$17.2	\$9.6
FY 95	27.8	17.1	10.7
FY 96	28.8	16.5	12.3
FY 97	29.8	16.8	13.0

This shows that ISTE A funding levels fall short of improving the NHS to minimum standards by a significant amount. The ISTE A funding level including State match over the 4-year period, FY 1994 to 1997, will fall short by an estimated 40 percent of the level required to improve the NHS to these standards.

SENATOR LAUTENBERG: What types of NHS improvements could be realized for each additional \$1 billion spent? How would these improvements be realized?

ANSWER: An additional \$1.0 billion in Federal-aid funding will, with State matching funds, achieves approximately \$1.2 billion in highway improvements. Based on current assessments of highway investment requirements and historical expenditure patterns, the \$1.2 billion will provide approximately 1,800 lane miles of pavement rehabilitation, 430 lane miles of additional highway capacity, and replace or rehabilitate 135 bridges nationwide. The States have the flexibility to allocate these funds to the types of highway improvements most needed in their own jurisdictions; therefore, the proportion of improvement type will vary among the States.

SENATOR LAUTENBERG: What effect has funding constraints had on the quality of other Federal-aid highways?

ANSWER: Between 1989 and 1991, the conditions and performance of Federal-aid highways not eligible for inclusion in the NHS have generally stabilized. The pavement conditions have improved, and the congestion has remained about the same. From 1990 to 1992 the number of deficient bridges have, including those on the local functional system, increased somewhat.

Following is a table that contains estimated investment requirements to maintain the Federal-aid highways not on the NHS to the conditions and performance measures equivalent to those in 1991.

	Non-NHS Investment to Maintain System	Total estimated Funding at ISTEA	Estimated Shortfall
FY 94	\$21.8	\$14.4	\$7.4
FY 95	22.6	14.5	8.1
FY 96	23.4	16.0	7.4
FY 97	24.2	16.5	7.7

This shows that conditions and performance will not be maintained even with full ISTEA funding levels. The ISTEA funding level including State match over the 4-year period, FY 1994 to 1997, will fall short by an estimated 33 percent of the amount required to maintain conditions and performance on the non-NHS Federal-aid highways to the 1991 level.

Private Sector Financing

ISTEA allows the use of Federal-aid funds on privately owned facilities, and is expected to increase the attractiveness of toll road development as an investment option. DOT has reported that an estimated \$6.4 billion was invested by the private sector on highway improvements and over \$1 billion on off-site improvements in 1989. However, DOT cautions that these are extremely rough estimates and should be viewed as very preliminary, as further effort is needed to get better data on this important and growing area of highway financing.

SENATOR LAUTENBERG: To what extent has the ISTEA provision allowing Federal funds to be used on privately owned transportation facilities been used? What is the future outlook?

ANSWER: To our knowledge, no Federal funds have yet been used on privately owned transportation facilities. Although ISTEA provisions changed the rules at the Federal level, many States will also require legislative action to take advantage of these provisions. FHWA published an initial guide on public/private cost-sharing toll financing provisions of the ISTEA in June 1992 and has underway activities to aid States in developing needed provisions, including a handbook on creation of legislation, and research to further define and analyze important issues and barriers.

SENATOR LAUTENBERG: What is the annual potential private section investment in future highway investments?

ANSWER: We think that the potential for private sector investment in new highway facilities exists, but will be limited. The U.S. has an extensive, well-developed highway system built by the States and localities with assistance from the Federal government. There are not many opportunities to build new highway capacity in the built-up areas and in other places where congestion is at its worst. Interest in private investment is most visible in the high-growth States, and some private investment activity may develop in these areas.

An additional area of potential private investment is in rehabilitating certain facilities, such as bridges, which could earn a return on the investment by charging tolls on the facilities.

SENATOR LAUTENBERG: What is DOT doing to improve the reliability of information on private sector highway investment?

ANSWER: One of the key factors in improving the reliability of the information on private sector highway investments is a good operational definition of "private sector investment." DOT has developed the definition included in the Conditions and Performance Report to ensure that the appropriate kinds of investment are classified as "private sector." For example, investments funded through special district assessments or by development fees paid to a governmental entity are frequently referred to as private sector financing. However, this type of financing falls within the operational definition of public sector financing. i.e., financing for highways that is managed by the public sector.

Based on these definitions, DOT is working to identify potential sources of information on private sector highway investment. One of the major problems is identifying all of the highway investment projects that are included in this definition of private sector investment. While information is available on total estimated project costs for larger projects that have been given national attention, there may also be smaller projects involving private sector investment.

HOW GOOD ARE THE DATA?

DOT's 1993 report, The Status of the Nation's Highways, Bridges, and Transit: conditions and Performance, advises that, while there is substantial variation among the States as to the amount of pavement that needs improvement, the percent of mileage in poor condition in most States has declined over the past few years. An accompanying table (Exhibit 3-16) on Interstate pavement in poor condition shows some States have reported remarkable changes in pavement condition within a two-year period, which is illustrated by the following excerpt.

Percent of Interstate Pavements in Poor Condition

<u>State</u>	<u>1989</u>	<u>1991</u>
Alaska	26.4	5.1
Arizona	27.4	1.2
Colorado	7.6	30.3
Georgia	11.7	0.0
Michigan	10.7	19.0
Nevada	33.9	11.6
New Mexico	1.3	38.1
North Dakota	0.2	32.3
Rhode Island	31.4	1.4
Vermont	18.7	5.9
Wisconsin	18.6	0.0

SENATOR LAUTENBERG: How do you account for such significant swings in the percent of Interstate pavement in poor condition reported by some States within a two-year period?

ANSWER: The use of the Present Serviceability Index (PSR) for evaluating pavement condition has a recognized weakness. PSR is a subjective measure of pavement ride quality, and can be arrived at by a variety of procedures. States have attempted to improve their estimation of PSR values by changing their procedures from time to time. Unfortunately, this invalidates comparisons with previous years data. While it is possible for a substantial amount of pavement to deteriorate from "mediocre" to "poor" in a 2-year period, a large percentage change is suspect. A large decrease in the percentage of poor pavement would not likely occur unless a large pavement improvement program was undertaken during the time period in question.

A more objective measure, the International Roughness Index (IRI) is now being required for all rural arterial highways and urban Interstate and other freeways and expressways. This is a measured roughness index, with specific requirements regarding the accuracy and calibration of the measuring equipment. The increased use of measured pavement roughness (IRI) in the future will largely eliminate State-to-State and year-to-year variations that have been a problem with the PSR estimate of pavement condition.

SENATOR LAUTENBERG: What is FHWA doing to validate the reliability of the condition of Federal-aid highways?

ANSWER: The FHWA division offices in each State conduct surveys of a portion of each of the HPMS sample sections each year. This is done to minimize errors in data reporting. It does not necessarily detect differences among the various States PSR reporting procedures. Our Region offices attempt to address that problem by evaluating the procedures of the various States within the region.

At the national level, we evaluate the data from each State every year. When large, unexplained differences occur, we question the State about these apparent anomalies, and attempt to obtain a satisfactory reason or a correction of

the data, if it is acknowledged to be in error. As the number of years of historical data increase, anomalies become more apparent and can be more readily identified and the errors corrected.

SENATOR LAUTENBERG: When a State show no interstate pavement in poor condition, does this indicated no poor Interstate pavement exists in the State, or is it a case of missing information? If the latter, what is FHWA doing to capture such condition data?

ANSWER: It is possible for a State to have no poor Interstate pavement, but such reporting does raise cause for question. The HPMS is a sample data base, and Interstates are currently sampled at a rate of approximately 50 percent. If there are few sections of poor Interstate pavement statewide, these could occur on other than HPMS sample sections. While the sample procedures have been designed to provide statistically valid results, it is possible for poor sections to exist that are not included in the sample. The sampling error for Interstate is generally 5 percent, so that statistically there could be 5 percent poor pavement when the data shows no poor pavement. In the future, the reporting of 100 percent of the Interstate highway mileage will include all pavement sections and avoid this problem.

SENATOR LAUTENBERG: What efforts has FHWA made, or planned, to assure comparability when States assess the condition of their Federal-aid highways?

ANSWER: A more objective measure, the International Roughness Index (IRI) is now being required for all rural arterial highways, urban Interstate, and other freeways and expressways. This is a measured roughness index, with specific requirements regarding the accuracy and calibration of the measuring equipment. However, it measures only roughness, and does not necessarily capture other pavement distress such as cracking, rutting, etc., unless roughness is directly affected by the distress. States are now furnishing a significant amount of IRI data, and this data element will play a more prominent role in the future.

This requirement does not extend to urban surface streets, because the equipment must be operated at a constant speed, e.g., 35 or 55 miles per hour. This is not feasible on many surface streets because of the presence of other traffic, traffic signals, and other disruptions. However, we encourage the States to report IRI for all paved streets and highways where such measurement is practicable.

The increased use of measured pavement roughness (IRI) in the future will largely eliminate State-to-State and year-to-year variations that have been a problem with the PSR estimate of pavement condition.

CONGESTION PRICING

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 authorizes the Department of Transportation to enter into up to five cooperative agreements per year with state or local governments or public authorities to establish, maintain, and monitor congestion pricing projects.

SENATOR LAUTENBERG: What progress has been made to date in implementing this authority? List the recipients of these funds and the amount allocated to each project.

ANSWER: We are currently negotiating an agreement with the California Department of Transportation and the Metropolitan Transportation Commission in the San Francisco Bay Area, California, for implementation of a congestion pricing pilot project on the Oakland-San Francisco Bay Bridge. Once these negotiations are complete, we expect to obligate funds for project planning (e.g., corridor study, development of pricing strategies), capital costs (e.g., electronic toll and traffic monitoring systems, toll booths, information signs), operating costs (e.g., salaries and expenses, maintenance), public out-reach/marketing, project monitoring and evaluation, and transit enhancement directly related to the project (e.g., operating and capital costs). We have also obligated \$270,000 of program funds to fund expert consulting services to produce a guidance document to supplement program documents in providing assistance to applicants in developing congestion pricing projects which include adequate planning, implementation, monitoring and evaluation components. The consulting service is also available to provide direct assistance to program applicants in developing projects that meet our selection criteria.

SENATOR LAUTENBERG: How many proposals have you received?

ANSWER: The initial solicitation notice was published in the Federal Register on November 24, 1992. By January 25, we had received applications from nine States, covering 16 urban areas.

SENATOR LAUTENBERG: If there is an insufficient number of qualified proposals, will the monies authorized for this program be diverted for other purposes?

ANSWER: While many of the proposals received during our first solicitation did not respond well to the criteria contained in the November 24 Notice, we believe an extension of the solicitation period will provide the opportunity for the Federal Highway Administration to work with applicants to improve proposals submitted in response to the first Notice, and provide to several other areas that have expressed interest the time to develop new proposals. We will therefore issue a new Federal Register Notice to extend the solicitation period by 4 months. The goal of the Pilot Program remains one of providing the Congress with an evaluation of congestion pricing projects within the life of the Intermodal Surface Transportation Efficiency Act of 1991. We expect to obligate the full amount of funds available for this program to support implementation of the Congestion Pricing Pilot Program authorized by Section 1012(b).

Policy and Planning Research

SENATOR LAUTENBERG: Please provide a detailed breakdown of the following budget requests, specifying in each case project expenditures whenever possible:

\$7.369 million for policy research, (p. 91 of FHWA budget justification); and \$3.189 million for planning research, (p. 94).

ANSWER: Policy research will be conducted in the following project areas:

Improving Policy Analysis of Emerging Energy, Environmental, and Highway Financing Issues	\$1,347,000
Improving Tools for Highway Cost Allocation, Truck Size and Weight, and Freight Demand Analysis	\$1,219,000
Strategic System Performance Analysis	\$756,000
Interrelationships Between Highway Investment and Economic Productivity	\$952,000
Improving Transportation Data Acquisition and Management	\$3,095,000
TOTAL	\$7,369,000

Of the \$3.189 million for planning research, funds are scheduled for use in areas as shown in the following table:

Metropolitan Travel Demand Forecasting Improvements	\$625,000
Congestion Management	\$525,000
Ensuring the Efficiency of Future Transportation Systems	\$300,000
Intermodal and Statewide Planning	\$525,000
Strategic Systems Performance Analysis	\$1,000,000
Other	\$214,000
TOTAL	\$3,189,000

SENATOR LAUTENBERG: Please provide a list of the major studies that have resulted from the policy-oriented research conducted by FHWA during the last two years. Where were these studies published?

ANSWER: Following is a list of policy-oriented research reports published during the last two years:

- High Priority Research Areas for the Office of the Associate Administrator for Policy
- Exploring the Role of Pricing as a Congestion Management Tool
- Exploring Key Issues in Public-Private Partnerships for Highway Development
- Public and Private Sector Roles in Intelligent Vehicle Highway Systems Deployment

- Assessing the Relationship Between Transportation Infrastructure and Productivity
- Transportation and Air Quality
- Edge City and ISTEA -- Examining the Transportation Implications of Suburban Development Patterns
- Examining Congestion Pricing Implementation Issues
- Highway, Bridge, and Transit Conditions and Performance Report

Each of these reports was published by the Office of the Associate Administrator for Policy.

Policy Planning Research

QUESTION. Many times the research that FHWA conducts on truck size and weight and rail competitiveness issues is criticized by one or more of the parties involved. Is there an opportunity to conduct some of this research in close cooperation or jointly with the involved parties?

ANSWER. Cooperative research efforts with modal interest are pursued by FHWA whenever and wherever possible. The reason for collaboration, however, is not to minimize criticism but to benefit from the diversity of views and expertise which it accesses. Involvement of a wide range of transportation interest invites constructive criticism, improves the quality of analysis, promotes understanding, and enhances the possibilities for future consensus building.

An example of our efforts to secure the benefits of intermodal cooperation is our "Truck Size and Weight and User Fee Policy Analysis Study." Particularly during the second phase of that work, with representatives of the Federal Railroad Administration and the Office of the Secretary, we consulted with the Trucking Research Institute of the American Trucking Associations (TRI/ATA) and the American Association of Railroads (AAR) on the study design, inputs, and interim results. Another example is the "Trucking Industry Size Study" required by the DOT Appropriations Act of 1992, which will involve both the TRI/ATA and AAR.

PLANNING RESEARCH AREA ONE

1. TITLE AND BRIEF DESCRIPTION OF THE STUDY: Metropolitan Travel Demand Forecasting Improvements - This study responds to requirements for increased ability, application and accuracy from practitioners and policy makers in the area of understanding/forecasting travel needs. The research approach has four tracks: (1) *Study Design and Outreach* - overall project design and outreach to users of the modeling process; (2) *Improvement of Existing Models* - near term effort enhancing existing models to respond to new policies and improved understanding of behavior, focusing on short term modifications to existing

processes; (3) *Development of New Procedures* - revamping the entire forecasting process, including improved network analysis models, better forecasting of time of day, and improved integration of land use and transportation; and (4) *Data Collection and Analysis* - gathering data (primarily from existing sources) for calibration, validation, and support of models and model results. The overall model design must be flexible and sensitive to changes in decision makers needs, congestion pricing schemes, and air pollution control technology.

2. SOURCE: This effort is not mandated by law, but it addresses significant planning policies and procedures important to all levels of government, in particular the FHWA and DOT. The ability of MPOs and State DOTs to respond to added responsibilities in understanding travel behavior is of significant interest to FHWA's missions of ISTEA implementation and technical assistance.

3. OBJECTIVE: The objective of this effort is for FHWA to lead the development and refinement of travel forecasting procedures to be used by policy makers and planners at all levels of government. Results will be distributed to MPOs, State DOTs, affected agencies, Congress, and the general public, as appropriate.

4. JUSTIFICATION: This effort will provide new knowledge not available from existing studies, and will respond to comments from previous studies in this area. Much of the effort is aimed at incorporating results of previous studies, and ensuring the use of the latest techniques and procedures. Though current literature will be gathered to support study efforts, acceptable results cannot be obtained from researching current literature alone. Nor can a cheaper study provide required results.

5. PRODUCT: Several products will be yielded from the research tracks. Results will include reports used by the FHWA, DOT, MPOs, State DOTs and other agencies in travel forecasting. Also, there will be improved procedures and analysis tools. Research will be both in-house and contracted out. There are no specific target dates for issuing reports.

6. AMOUNT REQUESTED THIS FISCAL YEAR: FY 93 \$325,000 and FY 94 \$625,000.

PLANNING RESEARCH AREA TWO

1. TITLE AND BRIEF DESCRIPTION OF THE STUDY: Intermodal and Statewide Planning. Research will be conducted in: (1) Intermodal Data and Modeling - New modeling procedures will be developed which integrate the intermodal and freight planning processes; model case studies will be conducted which develop an intermodal data inventory and create a database of characteristics of intermodal facilities; and trip generation studies will be conducted for intermodal facilities. (2) New Intermodal Technology - The potential economic impact of new technology on the financial feasibility of

intermodal facilities will be evaluated; and the potential of GIS for evaluating intermodal projects and identify data sources and technologies for GIS applications will be evaluated. (3) Economic, Performance, and Legal Aspects of Intermodal Facilities - A relative cost comparison by mode for equivalent freight and distance will be conducted; performance measures and industry standards for evaluating intermodal facilities will be identified; and institutional, regulatory, and legal barriers will be identified and their impact determined. (4) Intermodal Outreach, Plans, and Experiences - Operators and users will be contacted to identify problems, deficiencies, and funding sources; European and Asian facilities will be evaluated; a national inventory of airport ground access plans will be conducted, and updated guidelines for planning airport ground access will be developed; model statewide intermodal plans will be reviewed and a recommended practice developed for a statewide intermodal plan; and TRB's TRIS database will be expanded to include intermodal references.

2. SOURCE: This effort is not mandated by law, but it addresses significant public policy areas important to all levels of government, in particular the FHWA and USDOT.

3. OBJECTIVE: The objective of this effort is to identify, collect, develop, exchange, and use timely and accurate information internally, with State DOT's, and the public. This effort supports the improvement of FHWA's ability to provide a comprehensive, continuing data collection and dissemination activity that can furnish relevant and accurate information to the transportation community. Results will aid FHWA and USDOT in developing legislative proposals related to funding ground access to intermodal facilities and will be distributed to effected agencies, Congress, and the public.

4. JUSTIFICATION: This effort will provide new knowledge not available from existing studies. Acceptable results cannot be obtained from researching current literature and data, nor could a less costly study provide required results.

5. PRODUCT: Results from this effort will be reports used by the Congress or other parts of the Administration in policy development and are generally available to the public. Reports will be prepared both in-house and contracted out.

6. AMOUNT REQUESTED: \$525,000 in FY 94.

PLANNING RESEARCH AREA THREE

1. TITLE AND BRIEF DESCRIPTION OF THE STUDY: Ensuring the Efficiency of Future Urban Transportation Systems - This study will focus on the development of improved procedures and applications in maximizing transportation efficiency in suburban and urban centers. It is also designed to develop and disseminate improved planning methods as well as solutions to the urban congestion and air quality problems facing metropolitan areas.

2. SOURCE: This study is not mandated by law. However, the ISTEA and the CAAA highlight the need to foster efficiency in our transportation systems. The

responsibilities of MPOs and State Departments of Transportation have been substantially increased by the legislation to this end. The capacity of MPOs and DOTs to respond to these added responsibilities is a matter of significant interest to FHWA in our jurisdiction of technical assistance and implementation.

3.OBJECTIVE: This project will uniquely streamline many of the objectives of the ISTEA and CAAA with regard to planning tools which promote system efficiency. It will prepare, print and disseminate analyses of application and development of these tools, and produce guidelines for MPO and DOT staff in the planning and design of facilities and procedures relating to air quality, land use, activity centers, and facility operations.

4.JUSTIFICATION: The portion of the study proposed for next fiscal year under the overall research area will provide new knowledge on the physical design and institutional mechanisms needed to ensure that existing and new suburban activity centers (SACs) are efficient from a transportation standpoint. This information is not available from studies already conducted by FHWA or elsewhere, since suburban centers are a relatively new phenomenon whose transportation and social implications are only now being recognized. Little literature exists on the subject, hence a major study effort is necessary.

5. PRODUCT: The result will be a publicly available report documenting the findings and a handbook for use by State and local governments in directing the evolution of efficient SACs. The study will be contracted out. The study will require a little over one person year. The end-product is anticipated to be available for distribution in October, 1995.

6. AMOUNT REQUESTED THIS FISCAL YEAR: \$300,000 -- Additional funding -- none for this study on Efficient SACs.

PLANNING RESEARCH AREA FOUR

1. TITLE AND BRIEF DESCRIPTION OF THE STUDY: Congestion Management - Congestion on our nation's transportation system has become a critical concern to officials at all levels of government. This concern has manifested itself by ISTEA's requirement for each State to develop, establish, and implement Congestion Management Systems (CMS). Research is devoted to the development of quantitative tools to assist in CMS development, congestion related data needs and requirements, and educational materials.

2. SOURCE: This study is not mandated by law. However, the ability of States, MPO's, local governments, and transit operators to effectively respond to the CMS requirements is of significant interest to FHWA and FTA.

3. OBJECTIVE: Congestion management research will focus on the policy, program, and institutional aspects of CMS development, establishment, and implementation. The results will be distributed to the States, MPO's, local governments, and other affected agencies in the form of reports, technical assistance, and formal course instruction. Without FHWA's coordination and administration of this work at the national level, congestion management topics will not be adequately addressed or researched.

4. **JUSTIFICATION:** The information provided by this research is not currently available from a national perspective. A project currently under way to analyze the State of the Practice of congestion management at the State, MPO, and local levels verifies the fact that many agencies are not actively addressing congestion reduction strategies, data collection, or interjurisdictional coordination. The level of knowledge regarding methods of analysis, development of strategies, and implementation also varies, with most agencies requiring significant guidance. The proposed research covers all of these elements.

5. **PRODUCT:** Studies will be publicly available through publications, technical assistance, conferences, and formal course presentations. Work will be contracted out and done in-house. Several products will become available soon after the final rule on congestion management systems is published.

6. **AMOUNT REQUESTED THIS FISCAL YEAR:** \$525,000 FY 94, with follow-on money of approximately \$400,000 in FY 95 to implement the research currently being initiated.

POLICY RESEARCH AREA FIVE

1. **TITLE AND BRIEF DESCRIPTION OF THE STUDY:** Improving Transportation Data Acquisition and Management - Research will: (1) improve efforts to gather and disseminate transportation data to support timely and informed decisionmaking; (2) identify and meet emerging needs for domestic and international transportation data; (3) coordinate transportation data collection activities within the public sector and in cooperation with the private sector, including development of consistent data collection standards; (4) support regular evaluation and reports on the state of the nation's highway system including its usage and expected demands; and, (5) support long-range multimodal planning and associated legislative, regulatory, budget, and program proposals.
2. **SOURCE:** This effort is not mandated by law, but it addresses significant public policy areas important to all levels of government in particular the FHWA and the DOT.
3. **OBJECTIVE:** The objective of this effort is to identify, collect, develop, exchange, and use timely and accurate information internally and with state DOTs and with the public in general. This effort supports the improvement of FHWA's abilities to provide a comprehensive, continuing data collection and dissemination activity that can furnish relevant and accurate information to the transportation community. Results will aid the FHWA and the DOT in developing legislative proposals related to financing Federal-aid highways and will be distributed to affected agencies, Congress, and the general public, as appropriate.
4. **JUSTIFICATION:** This effort will provide new knowledge not available from existing studies. Specific activities in this area include: the Highway

Performance Monitoring System (HPMS), which is in its second decade of providing factual, current information on the condition and performance of the nation's highway plant; the Travel Monitoring Initiative which provides guidance on the effective collection of vehicle characteristics data; the National/International Data Management and Dissemination Initiative provides for coordinated programs to track and disseminate information on changes on household travel, vehicle registrations, and driver licensing; and, the Highway Finance and Fuel Usage Monitoring Initiative provides for the collection, analysis, and dissemination of transportation funding information. Acceptable results cannot be obtained from researching current literature nor could a cheaper study provide required results.

5. **PRODUCT:** Policy research is more of a continuing and evolving type of research and must be responsive to new, often unanticipated, issues. Results include reports used by the FHWA, DOT, and other agencies in policy development and are generally available to the public. Reports will be prepared both in-house and contracted out.
6. **AMOUNT REQUESTED THIS FISCAL YEAR:** \$3,511,000 in FY 1993 with follow-on money of \$3,095,000 in FY 1994 and \$3,559,000 in FY 1995.

FLOW STUDY

SENATOR LAUTENBERG: What progress has been made on the multi-modal commodity and passenger flow survey that was initially requested in fiscal year 1992?

ANSWER: Responsibility for the multi-modal commodity and passenger flow surveys was assigned to the Bureau of Transportation Statistics. The commodity flow survey is currently underway, and the passenger flow survey is still being planned. The Bureau of Transportation Statistics has prepared a detailed progress report on the multi-modal commodity and passenger flow surveys in response to Report 102-351 of the Senate Appropriations Committee accompanying the 1993 Department of Transportation Appropriations Bill; that progress report currently is under review within the Department.

QUESTION: How does FHWA plan to reduce the scope of the study? When will the study be completed?

ANSWER: The Bureau of Transportation Statistics' progress report on the multi-modal commodity and passenger flow surveys describes in detail the scope of those two studies and their schedule. That report will be transmitted to the Committee as soon as the Departmental review process has been completed.

NATIONAL HIGHWAY SYSTEM

SENATOR LAUTENBERG: To what extent can the forthcoming NHS proposal be expected to mirror the illustrative map crafted in 1991?

ANSWER: Although it is too early to say with certainty, the rural component of the proposed NHS is expected to closely resemble the illustrative map. The illustrative NHS was developed with the active involvement of most States, and most routes meet the NHS criteria contained in Section 1006 of the ISTEA. The States were encouraged to use the illustrative NHS as the starting point for developing their proposed systems so a strong similarity between the two is expected.

SENATOR LAUTENBERG: What connectivity problems are evident from the illustrative 1991 National Highway System?

ANSWER: There are no specific connectivity problems that are evident from the illustrative NHS; however, the development of the illustrative system served to emphasize the importance, and the difficulty, of achieving connectivity between States and between rural and urban areas within each State. Based on the experiences gained in developing the illustrative NHS, the Federal Highway Administration is placing a great deal of emphasis on this area in working with the States and the metropolitan planning organizations to develop the proposed NHS.

THE INTERACTION OF TRANSPORTATION AND AIR QUALITY

SENATOR LAUTENBERG: The Clean Air Act Amendments (CAAA) of 1990 emphasized demonstrating that federally supported highway and transit plans and projects will not create or exacerbate air quality problems in areas that are non-attainment for transportation-related air pollutants. How has the Federal Highway Administration's (FHWA) environmental research program improved the integration of transportation and air quality planning?

ANSWER: Satisfying the transportation requirements of the CAAA will be a major challenge for the transportation community and will require difficult decisions at the State and local levels of Government. A variety of research efforts in three general areas are underway to assist in this effort. The first is activities to insure that the new requirements are understood and to improve dialogue between the transportation and air quality communities. The second is to examine current analytical methods and where possible expand and update the current knowledge and understanding of the relationships between transportation and air quality. Finally, efforts are underway to develop a new generation of evaluation techniques to respond to air quality concerns that present techniques cannot address.

SENATOR LAUTENBERG: What tools is FHWA developing to better gauge the impact of proposed transportation decisions on air quality?

ANSWER: The following is a listing of major activities that are currently underway:

1. Improve the Integration of Transportation and Air Quality Planning.

Purpose: This project is a joint grant by EPA and DOT to the National Association of Regional Councils (NARC) to research and help facilitate the development and implementation of transportation/air quality techniques and procedures needed by Federal, State, and local transportation and air quality agencies to comply with the transportation provisions of the CAAA of 1990. In addition to providing an interagency forum

for discussion and coordination, it provides for panels to look into technical matters needing further research and analysis.

2. Air Quality Technical Services

Purpose: This research will facilitate development of transportation related air quality procedures such as developing case studies of the analytical procedures used for making conformity determinations; evaluating the effectiveness of transportation control measures; evaluating air quality violations for receptor location criteria and for air pollutant dispersion, transport, and persistence; evaluating existing guidance on the analysis of alternatives to achieve air quality standards, including the no-build alternative, alternative modes, and transportation system management and demand management options; synthesizing information and providing analysis of the merits and potential of various technological fixes; developing guidance to State Departments of Transportation and Metropolitan Planning Organizations on EPA emission models; and developing guidance related to Clean Air Act implementation.

3. Assessment of Highway Particulate Impacts

Purpose: This research includes (1) a critical review of existing knowledge of the highway system's contribution to the small particulate (PM-10) air quality problem; (2) studies to fill in gaps in the current understanding; and (3) if appropriate, the development of techniques to quantify and mitigate highway system impacts. This research is critical, because the new conformity provisions contained in the Clean Air Act Amendments (CAAA) of 1990 also apply to PM-10 nonattainment areas. Emissions data and analytical tools however, are currently lacking to make effective conformity determinations for this pollutant.

4. Analyze and Develop Improved Modeling Procedures for Determining CO Levels at Intersections, Including Overcapacity Situations.

Purpose: This research is a joint effort by FHWA and the National Cooperative Highway Research Program (NCHRP) and will involve an extensive collection (to provide a national perspective) of monitored CO, meteorologic, and traffic data at intersections for comparison with model outputs. It will also evaluate existing air quality intersection models against the new data sets under a range of assumptions, including signal timing, turning movements, queue lengths, etc. Finally, it will develop a new and more accurate air quality intersection model.

5. FHWA/FTA Joint Operational Action Program To Improve Mobility

Purpose: This program has been initiated and funded jointly with FTA to demonstrate innovative, multi-modal transportation projects. The types of projects receiving funds include: parking pricing, telecommuting, bus signal preemption, advanced vehicle identification/location, and incident management. Project demonstrations awarded FY 1991 and FY 1992. No additional demonstrations are planned.

6. Effective Travel Demand Management(TDM) Actions

Purpose: This research project is being conducted to develop guidance and technical assistance materials for public and private sector personnel responsible for implementing TDM actions. A microcomputer model to determine the effectiveness of TDM actions is also being developed under this research project. Training course is planned for FY 1994.

7. Traffic Control Hardware and Software Demonstration Project

Purpose: This project will demonstrate the capabilities of

various components of hardware and software to relieve congestion.

8. Highway Incident Management Demonstration Project

Purpose: This demonstration project titled "Highway Incident Management" is being developed as a two-day workshop to help establish incident management as a routine emergency response function. The demonstration project is part of FHWA's "Marketing Plan" and will be offered to State and local agencies.

9. Improve Travel Forecasting Techniques to Respond to the Requirements of the Clean Air Act Amendments and the Intermodal Surface Transportation Efficiency Act.

Purpose: A multi-agency (FHWA, FTA, EPA) research effort is underway to redesign the travel forecasting process in response to the Clean Air Act Amendments and the Intermodal Surface Transportation Efficiency Act requirements. This will lead to new techniques to forecast land development and travel impacts of new transportation policies.

10. TRANSIMS - Transportation Simulator

Purpose: This project, through the Los Alamos National Laboratory, will use state of the art computer technology to provide micro level simulation of region wide travel patterns. This project also supports the initiative to convert National Laboratory capabilities to civilian applications.

11. Evaluate the Effects of Land Use and Travel Demand Management (TDM) Policies on Travel.

Purpose: A research project to develop procedures for estimating the effects of land use and TDM policies on travel, both at the local (site) level and at the regional level.

12. Update Highway Performance Management System (HPMS) Analytical Process.

Purpose: The FHWA is updating the analytical relationships in HPMS to include traffic usage patterns, emission estimation, and user cost estimation. This will result in improved, more effective data analysis for air quality, VMT, and congestion monitoring and reporting of system performance. It will also include methods to capture, display and analyze HPMS data for use in transportation planning.

SENATOR LAUTENBERG: How does FHWA's environmental research efforts in this area interfere with such efforts conducted by the Environmental Protection Agency (EPA)?

ANSWER: We are not aware of any conflicts between the FHWA air quality research efforts and EPA activities. FHWA is attempting to include appropriate EPA personnel in the development of the research projects or in the review of work products as they become available in order to prevent conflicts or misunderstandings. In this way we are also learning of research results from EPA's past and current efforts.

SENATOR LAUTENBERG: What major transportation data needs arise from the CAAA of 1990?

ANSWER: EPA is requiring non-attainment areas to propose, by June 30, 1994, a method to estimate travel on "local" functional systems by a count based method. This will require enhanced traffic counting procedures. Further, in non-attainment areas, the travel forecasting process will need to be significantly improved in order to accurately forecast the impacts of future travel on air quality. This will include additional survey data on person trip-making in order to support the travel models. Additional data collection will also be necessary to monitor total travel. (See next question)

SENATOR LAUTENBERG: What data gathering efforts are planned to assess the travel impacts of implementation of clean air and congestion management actions?

ANSWER: To assess the impacts of implementation of clean air strategies, FHWA and EPA will be monitoring the change in travel in nonattainment and maintenance areas using FHWA's Highway Performance Monitoring System (HPMS). State and local officials will need to increase the number of traffic counts in most areas to provide the statistical validity requested by EPA.

For congestion management, under our proposed rules implementing the ISTEA congestion management system (CMS) requirements, State and local officials will be permitted to custom-tailor the CMS to meet their own needs. Thus, they will be able to develop their own performance standards to measure progress in reducing congestion. They may use the same information they collect for the HPMS or other measures. In all cases, FHWA and EPA will have improved traffic information in the future for all areas over 200,000 population.

STATE'S ASSUMPTION OF INCREASED RESPONSIBILITIES

SENATOR LAUTENBERG: Under Section 1016 of ISTEA, a State has considerable flexibility in establishing the degree to which the FHWA will be involved in the development of Federal-aid highway projects. FHWA has stated that the framework for its role recognizes that with an expanding program and the increased capabilities of the States, it is time to share more of the project review, oversight, and administration responsibilities with the States. How many States have elected to assume more oversight and administrative responsibilities for Federal-aid highway projects?

ANSWER: To date, nearly four-fifths of the States have taken advantage of the new oversight option and have exempted the FHWA from oversight of projects off the National Highway System (NHS). In addition, slightly over half of the States have exempted the FHWA from oversight of low-cost NHS projects. Nearly half the States are also using the certification acceptance process, which existed prior to the passage of the ISTEA, to limit FHWA's oversight role on higher-cost NHS projects.

SENATOR LAUTENBERG: What typical review, oversight and administrative responsibilities are the States assuming?

ANSWER: The States assume responsibility for developing the design of a project, approving a project's design, overseeing projects and administering contracts. Typically this removes FHWA oversight of design activities, plans, specifications and estimates approval, concurrence in award, and construction activities on individual projects.

SENATOR LAUTENBERG: What is the outlook for States continuing to exercise more self-administration of their Federal-aid highway projects?

ANSWER: Initial acceptance by the States of this new oversight responsibility is very encouraging. Our goal is to have all States under some form of oversight exemption within the next two years.

SENATOR LAUTENBERG: If States are assuming more Federal responsibilities, what effect does this have on FHWA's role and staff year requirements?

ANSWER: As States elect to assume more responsibility for design and construction of projects, the FHWA's oversight role on individual project development is greatly reduced, FHWA division offices report they are handling significantly less paperwork. In addition, freed from routine project evaluations on many State and local projects, division staff have been able to devote more staff resources and offer more expertise to the NHS projects where there is a higher Federal interest. Further, staff resources are now available to focus on other important issues such as safety, innovative and effective research, implementation and marketing of technology, and implementation of the new environmental and statewide and metropolitan planning requirements of the ISTEA.

PAVEMENT DESIGN LIFE OF LESS THAN 20 YEARS

In April 1992, DOT's Office of Inspector General (OIG) concluded that six asphalt projects in South Carolina should have been built stronger to last 20 years rather than 10 years.¹ The OIG noted that this longer design life would have reduced life-cycle costs by \$1,901,185. However, the OIG found the State's design process intentionally under-designs the asphalt pavement structure only to last approximately 10 years at forecasted traffic. FHWA responded that, since the projects were designed for 10 years, it is not correct to say they are "under-designed" by not being designed for 20 years. FHWA noted that other than the original Interstate construction, there is no requirement to use a 20-year design for pavements. Further, in many cases, asphalt pavements require resurface at an age of 10 to 15 years to correct functional problems.

SENATOR LAUTENBERG: When does FHWA require life-cycle cost analysis?

ANSWER: The FHWA recognized the need for the use of life-cycle cost analysis in pavement design by including the requirement for an economic analysis in the January 1989 Pavement Policy. As a result, the States perform an economic analysis of alternate designs for new and reconstructed pavements and for the major rehabilitation of pavements approaching terminal serviceability and exhibiting significant structural deficiencies.

SENATOR LAUTENBERG: What is FHWA's position on designing high traffic corridors to last longer than the Interstate's original 20-year design life?

ANSWER: The FHWA supports designing pavements on high traffic corridors to last longer than 20 years. We are constantly working with the States to improve their pavement design procedures. A number of States now have accepted pavement design procedures which call for pavement designs in excess of 20 years.

SENATOR LAUTENBERG: When would FHWA consider pavement "under-designed"?

¹Reports on Audit of Cost Comparison of Asphalt Versus Concrete Pavements State of South Carolina, R4-FH-2-132, April 22, 1992.

ANSWER: The FHWA considers a pavement under designed when the pavement thickness provided is less than that required by the State's pavement design procedure, for predicted traffic loadings during the design period.

SENATOR LAUTENBERG: If asphalt resurfacing may not be required until 15 years after construction, does it make sense to provide for a 10 year design life?

ANSWER: The selection of a pavement design life is based on a number of factors including the functional life of the pavement, an economic analysis of the various alternatives, and funding available to meet statewide needs. Individual project costs must be balanced with overall system needs. In cases where needs exceed available funding, shorter design lives may be required on individual projects to provide funds for other high priority projects.

SENATOR LAUTENBERG: European countries routinely design both new construction and resurfacing to last more than 20 years. What does FHWA's pavement research indicate as to the optimal design life?

ANSWER: A general conclusion on the optimal design life of a pavement has not been determined. The Long Term Pavement Performance program should provide data needed to aid in determining the design lives of various pavement materials under differing site conditions.

DO PAVEMENT MANAGEMENT SYSTEMS OVERLOOK MAINTENANCE?

A Pavement Management System is intended to provide for optimization, i.e., best service at least cost. The system is essentially a set of tools or methods for finding optimum strategies for providing and maintaining pavements in serviceable condition over a given period of time.

SENATOR LAUTENBERG: To what extent do existing Pavement Management systems recognize maintenance costs and allow for trade-off between corrective maintenance and more costly capital repair work?

ANSWER: Maintenance cost data is recognized as an important input for pavement management systems. States with established systems generally include maintenance considerations in their pavement decision processes. Those in the early development stages are developing historical data on maintenance costs and performance as parts of these pavement management databases.

SENATOR LAUTENBERG: What is FHWA's position on integrating maintenance into Pavement Management Systems?

ANSWER: The FHWA supports integrating maintenance into Pavement Management Systems. This is covered in our current policy guidelines and in the Rulemaking now underway.

SENATOR LAUTENBERG: ISTEAs requires a number of management systems, but not a maintenance management system. Is there a need for such a system?

ANSWER: The FHWA began in the 1970's to encourage and assist States in developing maintenance management systems. By the mid 1980's, nearly all States developed and implemented maintenance management systems. Based on this success, we do not believe it is necessary to take mandatory measures.

REQUIRED USE OF RECYCLED RUBBER

Section 1038 of ISTEA provides that each State satisfy a minimum utilization requirement for asphalt pavement containing recycled rubber, which begins with a 5 percent requirement for 1994 and increases to 20 percent for fiscal year 1997 and subsequent years. However, this requirement can be set aside for 3 years under certain circumstances, such as a finding that asphalt pavement containing recycled rubber substantially increases the threat to human health or the environment compared to the threats associated with conventional pavement.

SENATOR LAUTENBERG: What is DOT's position on the advisability of imposing a minimum state utilization requirement for asphalt pavement containing recycled rubber in 1994?

ANSWER: The main concern with implementing the minimum utilization requirements in 1994 is that only a few States have experience in using this technology. To help them, we developed and presented 2-day workshops in Atlanta, Albany, Chicago, Denver, Dallas, Reno, and Spokane in February/March of this year. Over 1400 from the States and the asphalt paving industry attended. We have encouraged the States to construct trial projects prior to 1994 to gain "hands on" experience before the minimum utilization requirements become effective. Most States are expected to do so. At this time, we anticipate the States will be able to meet the minimum utilization requirements.

SENATOR LAUTENBERG: What is the status of the DOT and EPA study on asphalt pavement containing recycled rubber?

ANSWER: FHWA and EPA have worked closely on the studies since passage of ISTEA. The initial phase of the studies required by Section 1038 is nearing completion, and we are jointly preparing the report required by 1038(b)(5). We plan to continue evaluating long term performance and recycling.

SENATOR LAUTENBERG: What is known at this time about the health and environmental consequences of using recycled rubber in asphalt pavements?

ANSWER: Information on the chemicals involved is being evaluated by EPA. We have information from seven studies of the environmental effects of using recycled rubber in asphalt pavement. Our joint report to Congress will address this issue.

SENATOR LAUTENBERG: What is the recycling potential and limitations of asphalt pavement using recycled rubber?

ANSWER: To date, data is available on only two projects, one in Ontario, Canada, constructed in 1991, and one in New Jersey, constructed in 1992. No problems attributable to the rubber content of the pavement were encountered during the recycling operations. It is too early to predict differences in performance due to the presence of rubber.

SENATOR LAUTENBERG: What degree of performance variability could be expected for asphalt pavements containing recycled rubber based on various climatic and use conditions?

ANSWER: Use of asphalt pavements containing recycled rubber has not been widespread. Arizona and California have used more than the rest of the States combined. They have experienced good performance in their uses, in their climates. Attempts to predict performance for other uses, and under other climatic conditions, based on those two States' experiences, would be risky, at best.

SENATOR LAUTENBERG: How do asphalt pavements containing recycled rubber compare with conventional asphalt pavements?

ANSWER: Crumb rubber is one of a family of materials used to modify the properties of asphalt cement (binder). The modifiers are used to change the characteristics of the asphalt cement to meet specific needs of an asphalt pavement. As an example, rubber might be added to increase the high temperature viscosity of the asphalt as a measure to reduce susceptibility to rutting of the pavement in hot climates. It is difficult to make general comparisons between asphalt pavements containing recycled rubber and conventional asphalt pavements, unless usage, climate, etc., are specified.

SENATOR LAUTENBERG: What is the cost differential between conventional asphalt pavements and those containing recycled rubber?

ANSWER: Present costs are 20 percent to upwards of 100 percent more for asphalt pavements containing recycled rubber, depending on the process involved. As use increases, we would expect the price to come down, perhaps to the 20 percent to 75 percent range.

SENATOR LAUTENBERG: ISTEAs tasks DOT and EPA with studying the health and environmental effects of asphalt pavement containing recycled rubber; the degree to which asphalt pavements containing recycled rubber can be recycled; and the performance of asphalt pavement containing recycled rubber under various climate and use conditions. Has EPA participated sufficiently in the required studies/tasks?

ANSWER: The EPA and the FHWA formed a joint inter-agency coordination group in January 1992. The EPA has been responsive and jointly we will conclude our studies and report to the Congress.

INTELLIGENT VEHICLE/HIGHWAY SYSTEMS (IVHS)

SENATOR LAUTENBERG: Since last year, what progress has been made in addressing the key research questions facing the implementation of a successful National IVHS Program?

ANSWER: We have taken significant strides in the past year to advance IVHS research in virtually every key area. We are very pleased with the nature of the public input that was obtained during the past year that will be excellent for use in preparing the ISTEAs mandated report to Congress on non-technical barriers to IVHS deployment. Also, work continued on the several ongoing contracts addressing the implications of human factors on various IVHS areas.

The area of information collection and communication was advanced last year under contracts to improve methods to identify and predict the impact of incidents on traffic flow so as to minimize the ensuing congestion and secondary accidents, to investigate deployment issues of traffic surveillance systems, and to test and evaluate potential communication alternatives for IVHS information transfer among traffic management centers, roadside, and individual vehicles.

Similarly, traffic management and route guidance will benefit from studies just started that will determine optimum ways of identifying roadway segments and representing map databases to achieve compatibility

among all the different private and public sector providers users, provide better analytical tools to incorporate fuel consumption and emissions calculations in operating strategies, and develop simulation models which can accommodate IVHS operating strategies (such as real-time traffic signal control) for off-line testing.

Trucking and other commercial vehicle operations are being served by a study to develop systems to address commercial fleet management and information needs, and by an effort to examine the feasibility of establishing a National Automatic Vehicle Identification (AVI) standard to ensure compatibility among competing systems; AVI technology facilitates, for example, automatic safety or size and weight regulatory compliance for commercial vehicles, saving the valuable time currently involved in stopping and having these functions performed manually. Although systems to augment driver abilities is largely a NHTSA responsibility, the FHWA responsibilities in this area are being served by the initiation of work to improve safety through the development of systems to provide warnings and control during situations involving adverse visibility conditions, and development of advanced forms of work zone control.

Automated control systems were advanced by the award of some 15 contracts in response to a Broad Agency Announcement on "Precursor Systems for Automated Highway Systems (AHS)" to examine AHS requirements, issues, and risks. These efforts are expected to provide a knowledge base for the subsequent full system development for the required 1997 prototype demonstration.

It should be noted that the National IVHS Program Plan described in the answer to question 11c. above, separates IVHS into a set of specific end user services and defines the sequences of activities needed to develop and deploy those services. Thus, the Program Plan includes the key research questions such that we will track progress by advances towards deployment of user services.

AUTOMATED HIGHWAY SYSTEM (AHS)

SENATOR LAUTENBERG: How does the Department plan to pay for the 1997 prototype of the AHS? Have you developed and published a strategic five-year plan for the AHS that estimates its costs, sets forth its objectives, and presents milestones? What would be the value of developing such a plan?

ANSWER: The DOT expects to establish at least one consortium during 1993 to guide both the required demonstration of a prototype Automated Highway System (AHS) in 1997 and the design of a deployable, practical and affordable system. The preliminary estimate of funding for the FY 1994 - 1997 period is \$180 million. Assuming a cost split between Federal funds and non-Federal funds is 80/20, the Federal share of the funding would be \$145 million and the portion from the private

sector and State and local governments participating in the consortium/consortia would be \$35 million.

The DOT has developed a high-level, long term program plan for the full AHS program, consisting of an analysis phase which is currently underway, a demonstration phase which will culminate in the 1997 demonstration, and an operational evaluation phase resulting in a system specification which can be used for AHS deployments. The cost estimate above does not include this last phase. Due to the necessity of obtaining broad based private sector and State and local government support for AHS technologies, a detailed program plan is properly the responsibility of the consortium/consortia.

SENATOR LAUTENBERG: Does the FY 1994 budget have funding in it for the consortia that will be necessary to demonstrate a prototype of the AHS?

ANSWER: The President's "Rebuild America" initiative includes the necessary funding in FY 1994 for the AHS program.

SENATOR LAUTENBERG: Why haven't you issued a solicitation to partner the AHS prototype with non-Federal entities? When will such a solicitation be issued?

ANSWER: The AHS consortium activities are still scheduled to begin in late 1993. The solicitation for this public/private partnership is being prepared and can be expected to be issued this summer with award by the end of calendar year 1993. Department oversight to proceed with this size of procurement normally requires high level approval resulting from a departmental acquisition review process. This process has been temporarily delayed by the change in administrations.

APPLICABILITY OF CRADA PROVISIONS OF ISTEA TO IVHS ACT OF 1991

SENATOR LAUTENBERG: Section 6001 of ISTEA, paragraph 23 U.S.C. 307(a)(2), authorizes the Secretary to undertake "on a cost-shared basis, collaborative research and development with non-Federal entities." Will CRADAs carried out and funded by the IVHS Act (ISTEA sections 6051-6059) be eligible for the Federal cost share? If not, does this restriction adversely affect FHWA's capability of promoting research or cooperative agreements to advance IVHS? Please be specific in your answer.

ANSWER: The FHWA Chief Counsel has determined that ". . . the statute authorizing Federal cost-sharing is limited to CRADAs entered into under . . . 23 USC 307(a)(2). CRADAs carried out and funded by other provisions of law are not eligible for the Federal cost

share. This included CRADAs to carry out activities authorized by the IVHS Act (ISTEA sections 6051-6059) and funded by the ISTEA section 6058."

This restriction does not adversely affect our capability of promoting research or cooperative agreements at this time. However, as the need for accelerating the development of technologies grows and other technologies move into the operational test phase, the removal of the prohibition in the Stevenson-Wydler Technology Innovation Act of 1980, as amended, against the transfer of funds by Federal laboratories to non-Federal parties under a cooperative research and development agreement would enhance our ability to advance IVHS.

UNIVERSITY TRANSPORTATION CENTER

SENATOR LAUTENBERG: How can you assure the Committee that Federal Highway Administration (FHWA), together with RSPA, is effectively overseeing the management and implementation of the highway component of the University Transportation Centers Program?

ANSWER: The FHWA, together with RSPA, has taken a number of steps to assure the effective oversight of the University Transportation Centers Program. Beginning in 1989, FHWA Headquarters and field staffs have participated in the annual reviews of the University Transportation Centers. With the FHWA's encouragement, these reviews have included at least one professional from a State highway agency in the region. These reviews covered the management of the centers, education programs supported, research projects, and technology transfer activities.

For significant university research projects, the FHWA has involved FHWA technical experts who provide input and coordination with other related research in the Nationally Coordinated Program of Highway Research, Development, and Technology.

Effective implementation of research begins at the inception of a research project. With the FHWA's encouragement, the Centers have involved State highway agency professionals in the University research projects. The active involvement of these people assure that the research results will meet the needs of the agency, and that the research products will have an implementation advocate in the agency.

Lastly, the Centers have established a University Transportation Centers Clearing House to provide a central source of information on the program's research results and activities. This will enable transportation professionals to obtain up-to-date information on university research projects and reports.

IVHS AND MOTOR CARRIER SAFETY

SENATOR LAUTENBERG: Please discuss how the National IVHS Program will help the effectiveness and efficiency of MCSAP. What advances have been made thus far? Please breakdown how the \$900,000 provided in the last year's conference report to improve efficiency and effectiveness of MCSAP is being used.

ANSWER: The FHWA is working with the States, industry, and other safety interests on plans for the development, evaluation, and deployment of advanced technologies for IVHS commercial vehicle operations. MCSAP will benefit directly from IVHS because it will provide a nationwide network of automated safety inspection and monitoring systems.

Long range plans include the development of automated technologies to measure vehicle safety and provide access to safety records at the roadside. These systems will allow the States to increase the efficiency of their current enforcement programs through more accurate, streamlined inspections and access to data on carriers and drivers.

The \$900,000 provided in the conference report is being used to fund several projects to improve the efficiency and effectiveness of MCSAP inspections. Of these funds, \$355,000 will fund work by the Commercial Vehicle Safety Alliance (CVSA) on planning, technical assistance, and marketing support to FHWA and the States on the development of IVHS technologies. Approximately \$150,000 will fund analyses of ways to enhance the Motor Carrier Management Information System to provide real-time access to the information from this system for enforcement officers.

The remainder will fund deployment, evaluation, and testing of several advanced vehicle inspection devices including rolling dynamometers, skid pad devices, and infrared sensors. Several States are purchasing these advanced vehicle inspection devices with MCSAP research and development funds. Some of the States will be using funds to conduct operational tests and evaluations of this equipment. The NHTSA's Research and Test Center in East Liberty, Ohio, will also be provided funds to continue conducting laboratory tests and evaluations of these devices before they are field tested by the States.

SENATOR LAUTENBERG: Other than the project in Colorado that you are considering for funding, does FHWA plan to sponsor or conduct operational tests during FY 1993 or during FY 1994 involving commercial motor vehicles in which safety dynamics will receive prominent attention? What is the amount of funding reserved for the safety component of CVO projects in your FY 1994 budget? How much of the FY 1993 budget is being used for this purpose? For the last two questions, please separate out the safety components directly related to enforcement activities.

ANSWER: Yes, the FHWA does plan to include a request for operational testing involving commercial motor vehicle and driver safety during FY 1994. This Summer FHWA will initiate an effort to automate the inspection process and the monitoring of out-of-service vehicles and drivers. Except for the Colorado CVO project, additional FY 1993 operational test funds are not being used for CVO safety activities.

SENATOR LAUTENBERG: Will FHWA likely have to conduct its own operational tests to evaluate the feasibility of using a variety of IVHS or other advanced technologies to aid MCSAP inspectors? Do you plan to initiate such a project during FY 1994?

ANSWER: The FHWA will conduct laboratory tests of new technologies such as rolling dynamometers, skid pad devices,

and infrared sensors. Several States will conduct the operational tests of these new devices. Testing of several new devices began this year and will continue in FY 1994.

SENATOR LAUTENBERG: Other than supporting the current and expanded use of the CVSA decal, what is FHWA doing to provide information to MCSAP inspectors at the roadside that might help them make more informed decisions about which vehicles should be subject to either a Level I or II inspection? Couldn't IVHS-type systems be of benefit to these MCSAP officers?

ANSWER: The FHWA is developing data systems that will provide information to MCSAP officers at the roadside to help target their inspection activities. These systems should allow MCSAP officers to access and input the most current inspection information on the carrier and driver. This linking may involve linking current on the driver and motor carrier. The FHWA is also working with the States to evaluate current computer hardware, data entry techniques, communications, and software that is appropriate for roadside use. Further, through IVHS, FHWA also plans to examine available on-board vehicle technologies to obtain the safety condition of the vehicle and driver.

SENATOR LAUTENBERG: Before deciding to spend 30 or 40 minutes on an inspection, would it be worthwhile for MCSAP officers to use an advanced information system to query the past inspection record of the company involved, the safety rating of that carrier, how many times a particular vehicle has been inspected during the last 12 months, or how many inspections have been performed on a specific company during the last 12 months and its out-of-service ratio? Please discuss the value of each of these factors to MCSAP inspectors in terms of improving the efficiency of the overall program.

ANSWER: Yes, it would be a worthwhile to have this information. One of the objectives of IVHS is to provide this information to enforcement officers at the roadside.

The FHWA already uses a carrier's past safety record on audits, safety ratings, accident rates, and roadside inspections results to target carriers for reviews. All of these factors may be indicators of vehicles that are likely to have current safety problems and should be stopped and fully inspected. As part of the development of these data systems, FHWA will evaluate the effectiveness of these, and other factors, as indicators of vehicles that should be targeted for roadside inspections.

SENATOR LAUTENBERG: When do you plan to translate such an IVHS concept into a nationwide system covering key MCSAP inspection sites?

ANSWER: The FHWA anticipates that nationwide roadside access to safety information will be implemented incrementally over several years. Several States are now evaluating computers and software for use at the roadside to enter data. Others are testing cellular, cable, and microwave communications to access the Commercial Driver License Information System and other databases. As the new computer systems and software which are planned become available, MCSAP officers will have access to more data.

SENATOR LAUTENBERG: How much would it cost to provide this information at 300 MCSAP inspection sites? How much would it cost to link access to CDLIS, AAMVANETS, MCMIS, and/or SAFTEYNET and an expert decision-making system regarding inspection prioritization so various queries would be possible at the roadside? How did you calculate this?

ANSWER: The FHWA has not calculated the cost. The cost will be based on the requirements and architecture of a system identified during the development. The requirements being considered include the number of users, number of data elements, timeliness of the data, individual size and weight, fuel tax, and registration data, and individual data needs of each State. The FHWA and the States are also currently evaluating roadside computer and communication systems that could be used by MCSAP officers on the roadside and have not yet made recommendations on the requirements and specifications for this equipment.

MEASURES OF PROGRAM EFFECTIVENESS

SENATOR LAUTENBERG: NHTSA provides this Committee with estimates that project how many lives were saved each year because of specific regulations they issue or because of specific laws or programs they promote. What similar measures does the Office of Motor Carriers have regarding its effectiveness?

ANSWER: We believe it is impossible to establish a direct cause and effect relationship between our enforcement programs and the fatality rate. An analysis of 7,000 compliance reviews (CR) performed in FY 1992 shows that nearly 65 percent of the CRs resulted in the motor carrier receiving an improved safety rating. The favorable trend in the reduction of the fatal accident rate is an adequate measure of program improvements.

SENATOR LAUTENBERG: Please present information showing different indicators of improvement in motor carrier safety the last three to five years. (Whenever possible, please show these data for different types commercial motor vehicle configurations.) What percentage of these improvements are related to the OMC activities? What measures of productivity do you have of these efforts during the last three to five years? Please include several different measures of your productivity and industry's compliance record including different out-of-service rates during this period.

ANSWER: Fatal accident rates for combination vehicles and medium and heavy trucks have declined over the last five years.

FATAL ACCIDENT RATES
(Per 100 Million Miles of Travel)

Year	Fatal Accident Rate Combination Vehicles	Fatal Accident Rate Medium & Heavy Trucks	Fatal Accident Rate All Vehicles
1987	4.4	3.5	2.2
1988	4.4	3.5	2.1
1989	3.9	3.2	1.9
1990	3.7	3.0	1.9
1991	3.2	2.7	1.7

We believe some of this decline can be attributed to MCSAP and Federal enforcement activities. An exact percentage of the improvements in motor carrier safety attributable to our programs cannot be specified.

The vehicle out-of-service (OOS) rate has declined in each of the last three fiscal years:

<u>FY</u>	<u>Total</u> <u>Inspections</u>	<u>Out-of-</u> <u>Service</u> <u>Vehicles</u>	<u>Percent</u> <u>Out-of-</u> <u>Service</u>
1990	1,601,230	541,575	33.8%
1991	1,574,188	497,117	31.6%
1992	1,655,668	461,715	27.9%

COMMERCIAL DRIVER'S LICENSE PROGRAM

The initial issuance of commercial drivers licenses (CDL) was completed in April 1992 with over 5 million CDLs issued.

SENATOR LAUTENBERG: How many total CDLs have been issued since April 1992, and how many total CDLs have been issued to date?

ANSWER: There were 1.3 million CDLs issued since April 1992, and a total of 6.3 million CDLs were issued by April 30, 1993.

SENATOR LAUTENBERG: What has the annual cost of operation been and was this comparable with what was projected? Is the CDL Information System (CDLIS) annual operational cost being fully funded by state user fees? If not fully funded by user fees, what other funding has been used? For what purpose will Motor Carrier Safety Assistance Program (MCSAP) funding on CDL requirements be used?

ANSWER: The annual cost of operation for CDLIS was \$5,082,921 for the year ending September 30, 1991, and \$7,684,505 for the year ending September 30, 1992. These costs are comparable to what was projected. The annual operational cost of CDLIS is being fully funded by State user fees. The MCSAP funding will continue to be used in the area of CDL enforcement.

SENATOR LAUTENBERG: Does FHWA have an objective measure of the effectiveness of the CDL program?

ANSWER: The FHWA plans to review the effectiveness of the CDL program. Preliminary work is underway with the American Association of Motor Vehicle Administrators.

SENATOR LAUTENBERG: What monitoring is FHWA doing to ensure that the States are implementing their CDL program according to FHWA requirements? What are these requirements?

ANSWER: The FHWA field office in each State is in constant contact with the State licensing and enforcement agencies to monitor implementation and enforcement activities. The FHWA follows up on complaints from drivers, companies or other interested parties about possible violations of the CDL requirements. In addition, FHWA will soon publish a Notice of Proposed Rulemaking for determining State compliance with the requirements for State participation contained in the Commercial Motor Vehicle Safety Act of 1986. The requirements are:

1. Adopt and administer CDL testing program that meets minimum Federal standards.
2. Issue CDLs to persons who pass CDL tests.
3. Adopt and enforce the .04 percent blood alcohol content standard for determining driving while intoxicated.
4. Issue CDL's meeting minimum driver information requirements as specified in the Federal regulations.
5. Check CDLIS to determine person's eligibility to be issued a CDL.

6. Check person's State driving record for eligibility before issuing a CDL.
7. Notify CDLIS of issuance of a CDL.
8. Notify CDLIS and issuing State of any driver disqualification action.
9. Transmit out-of-State CDL convictions to driver's home State.
10. Do not issue CDLs to persons currently disqualified from operating CMVs or license is suspended, revoked, or cancelled.
11. Do not issue CDLs to persons currently holding a CDL from another State until old CDL is surrendered.
12. Issue CDLs only to persons domiciled in that State.
13. Impose appropriate penalties for driving CMV without a State CDL or driving with suspended, revoked or cancelled CDL.
14. Allow any holder of a valid CDL to operate a CMV within the State.
15. Adopt minimum one-year disqualification for first violation of DWI, leaving scene of accident involving a CMV, or using CMV in commission of felony.
16. Adopt lifetime disqualifications for violations of more than one DWI, leaving accident scene, commission of felony, or a combination of more than one of the above.
17. Adopt lifetime disqualification for persons using CMV in commission of felony involving controlled substances.
18. Adopt minimum 60-day disqualification of two serious violations for conviction involving a CMV (in a 3-year period).
19. Adopt minimum 120-day disqualification for conviction of three serious traffic indications involving a CMV (in a 3-year period).
20. Check NDR on non-CMV driver disqualifications, license revocations, cancellations, or suspensions before issuing CDLs.
21. Adopt out-of-service regulations for violations of .04 percent BAC standard.
22. Adopt disqualification for violations of out-of-service orders.

The ISTEPA of 1991 added a 23rd requirement that a State adopt a violation of an out-of-service order as a serious traffic violation.

SENATOR LAUTENBERG: Have States experienced any problems inputting the convictions for serious/disqualifying violations to the central information system CDLIS? If so, please explain.

ANSWER: Information on convictions is part of the overall driver record maintained by the issuing State. Some States take up to four months to post a conviction to the licensing agency driver record, when the information is not electronically transmitted by the State's courts.

SENATOR LAUTENBERG: What is being done to assure that all convictions are being inputted into the CDLIS on a timely basis?

ANSWER: Some State courts post conviction data electronically, thus avoiding delays to the Department of Motor Vehicles. All States are being encouraged to do this. Other States are trying to work with their court systems to obtain more timely transfer of data.

SENATOR LAUTENBERG: How current are the convictions being submitted -- is there a lag time between conviction and reporting to CDLIS in many states? How much of a delay?

ANSWER: States that have electronic data entry by the courts are posting convictions on their driver records, thus making them available through CDLIS as soon as they are entered by the courts. The process is slower for those States re-entering data from the courts; in some States it may take up to four months to post a conviction on a driver record.

SENATOR LAUTENBERG: Have there been any problems in converting one state's violation codes to that of the home state's in order for all convictions to be captured by the home states?

ANSWER: Yes, the 51 U.S. jurisdictions have some difficulty electronically exchanging noncommercial conviction and withdrawal information. To address this problem, the ANSI D-20 Conviction and Withdrawal Codes, which were developed over twenty-five years ago, are currently being revised to include actions associated with noncommercial offenses.

During design and development of the Commercial Driver's License Information System (CDLIS) a comprehensive set of additional codes was added to the ANSI D-20 Conviction and Withdrawal Codes. This group of codes addresses conviction and withdrawal actions associated with disqualifying offenses committed in a commercial motor vehicle. It was developed specifically for CDLIS and to meet the needs of the States for internal processing and interstate exchange of CDL information.

SENATOR LAUTENBERG: How many drivers have been suspended or disqualified based on this information? In which states?

ANSWER: AAMVAnet, Inc., the operator of CDLIS, recently asked States to provide the number of suspensions, revocations and disqualifications for commercial violations, based on the CDL requirements in the safety regulations. The total count as of February 28, 1993, was 2,584. Actual numbers ranged from 430 in Florida to zero in 20 jurisdictions that either did not report at all or reported no actions. Four other States reported over 200 actions: Georgia--289, Tennessee--245, Virginia--208, Wisconsin--228.

SENATOR LAUTENBERG: Please specify how you know that at least \$1.0 million was used in FY 1992 and in FY 1993 for CDL enforcement. What did each MCSAP State spend on CDL enforcement during each of these years?

ANSWER: All States participated in the CDL enforcement program. Funds (\$1,000,000) have been allocated by formula for CDL enforcement into States' basic grant. Some States have received supplemental funding above their basic allocation through reallocated funds for CDL enforcement.

SENATOR LAUTENBERG: How much is the Department requesting in the FY 1994 budget for the improvement and maintenance of the CDL testing mechanism?

ANSWER: The FHWA has not requested any funding in the area of CDL testing for FY 1994. In FY 1993, the FHWA awarded a grant to Michigan to improve and enhance the quality and overall effectiveness of the model CDL testing system. The work is expected to continue into FY 1994 under the grant.

SENATOR LAUTENBERG: Has the NDR been effective in identifying all commercial drivers with suspended or revoked licenses? From FHWA's perspective, what improvements are needed in the NDR to make it more effective?

ANSWER: The NDR is effective in identifying commercial drivers with suspended or revoked licenses. The NDR checks are

made by States who generally do not keep data on how frequently they check NDR. When inquiries are made, the NDR has properly identified drivers.

COMMERCIAL VEHICLE INFORMATION SYSTEM

SENATOR LAUTENBERG: What specific progress has FHWA made in establishing pilot tests of the Commercial Vehicle Information System? What specific contracts have been let? What percentage of FY 1992 and 1993 funds have been committed? For what purposes? What other States besides Iowa have received funds to pilot this system?

ANSWER: Work on the Commercial Vehicle Information System (CVIS) project is progressing well. The Iowa DOT is the lead State in the CVIS project. A steering committee, comprised of State and Federal officials, is overseeing the project and developed a work plan.

Four States--Colorado, Nebraska, Indiana, and Oregon--have expressed interest in becoming pilot States. The pilots are expected to begin next year. The CVIS will use information such as a carrier's safety rating, and accident and inspection history. The report to Congress on the feasibility of the project is due January 1, 1995.

All of the FY 1992 and FY 1993 funds totaling \$3.5 million have been committed to Iowa DOT to develop and test the CVIS. We expect to provide grants to other pilot States this Fall.

SENATOR LAUTENBERG: Which States, if any, already have the capability to tie their registration process to their records of carrier safety fitness, results of MCSAP inspections or accident records?

ANSWER: To the best of our knowledge, no State is currently electronically tying its registration files to records of carrier fitness, MCSAP inspections, and accident records. Through SAFETYNET, a State could check the safety fitness rating of an interstate motor carrier. Such a check would have to be done manually because there is no automated electronic linkage between the State vehicle registration system and safety records. The development and testing of the Commercial Vehicle Information System will provide States with the capability to electronically link vehicle registration with safety fitness ratings, as well as carrier accident and inspection history.

MOTOR CARRIER SAFETY ACT OF 1990

SENATOR LAUTENBERG: The Motor Carrier Safety Act of 1990 clearly directed the OMC to get tough with the motor carriers that violate the safety regulations. Has the number of new enforcement actions in some of your regions been decreasing during the last six months? Please use your enforcement management information systems, which has been supported for many years by this Committee, to provide data on the number of enforcement cases initiated by each of your regions during FY 1991, FY 1992 and thus far during FY 1993. If the data show that the number of actions is decreasing in any region since the Spring of 1992, please explain why.

ANSWER: There has not been a decrease in the number of enforcement cases initiated since the Spring of 1992. The total number of enforcement cases initiated by the FHWA's regions increased from 2,245 in FY 1991 to 2,473 in FY 1992. Over 1,300 enforcement actions have been initiated thus far during FY 1993.

SENATOR LAUTENBERG: Please provide data updating us on the number of enforcement actions that resulted from the first contact with a motor carrier since the issuance of operational procedures designed to ensure that serious safety violations were pursued as a result of any Federal audit or review of a motor carrier.

ANSWER: The Office of Motor Carriers' policy on serious safety violations went into effect on January 1, 1991. Since then, approximately 341 cases were initiated as a result of a first contact with a motor carrier.

LONGER COMBINATION VEHICLES

Longer combination vehicles (LCV), configured with longer double trailers and 26 to 28-foot triples trailers, are commonly known as Rocky Mountain doubles, turnpike doubles, and triples. LCVs have operated for up to 30 years in 14 Western states and on designated turnpikes in 6 other states. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) prevents further expansion of LCVs into states that did not allow them before June 1, 1991, and requires the Federal Highway Administration (FHWA) to compile a listing of state LCV requirements as of that date. A March 1992 report by GAO concluded that existing truck accident and travel data have shortcomings, that study outcomes were mixed for a variety of reasons, and that the actual impact of LCV operation is not known. (Truck Safety: The Safety of Longer Combination Vehicles is Unknown, GAO/RCED-92-66, 3/11/92)

SENATOR LAUTENBERG: Last year FHWA discussed a truck travel data conference that was expected to address how to better determine truck travel data and truck accident data. What actions have been taken as a result of that conference?

ANSWER: The June 10-12, 1992 Conference on FHWA Truck Travel developed 12 recommendations. The recommendations and responses are as follows:

Proposal 1 - Dynamic Grouping Capability. There should be a dynamic grouping capability for vehicle classification equipment. There is also a need to redefine data transfer formats to FHWA to allow for the retention of nested data elements and individual vehicle records collected by current and recommended technologies.

Response: FHWA is working with the American Society for Testing and Materials (ASTM) to develop standards that allow for the analysis of individual vehicle records for vehicle classification. The FHWA sponsored equipment testing by the Georgia DOT is underway which includes the assessment of devices that retain individual axle records. Current FHWA research is also reviewing the feasibility of using neural network technology to support dynamic grouping. The FHWA is also working with ASTM committees that are promoting the development of common data formats among various types of traffic monitoring equipment.

Proposal 2 - Alternative Precision Levels. A study is recommended to assess the costs and benefits associated with alternative precision levels for vehicle classification, by roadway classification.

Response: The recommended study is part of FHWA's proposed FY 1994 research program.

Proposal 3 - Phased Implementation. State implementation of a recommended precision level for vehicle classification data should be phased by roadway classification.

Response: This long-standing FHWA recommendation is extended to reflect that any such phasing should give emphasis to those arterials on the NHS over those not on the NHS.

Proposal 4 - Urban Area Emphasis should be given to automated urban vehicle classification and weighing technologies. Coordination and sharing of data with [transportation management] and other systems that monitor traffic in urban areas is recommended.

Response: Proposed FHWA FY 1994 research is specifically focused on the special needs in urban areas. FY 1993 research is directed towards the integration of traffic operations and traffic data collection.

Proposal 5 - Vehicle Classification Procedure. A study is recommended to develop a national vehicle classification algorithm procedure. A recommendation is that FHWA should continue cooperation with standard setting organizations and actively encourage the creation of national standard algorithms for vehicle classification and WIM equipment.

Response: FHWA staff is participating with ASTM Subcommittee E17.42, Traffic Characteristics, to develop improved classification algorithms.

Proposal 6 - Truck Safety Studies. A study is recommended to develop and initiate a series of truck safety monitoring efforts aimed specifically at obtaining better estimates of accident rates for different truck configurations. A case study approach, addressing safety issues of particular vehicle configurations, is the preferred method. Upon adoption of the case studies, we recommend that the current Large Dimensioned Vehicle Study (LDVS) be terminated and a final report be developed.

Response: The FHWA will be terminating the LDVS in the immediate future and a final report is planned within the calendar year. Concurrent with the termination of the LDVS, FHWA will be initiating a series of truck fleet and state case studies to focus on large truck safety concerns.

Proposal 7 - Truck Driver Survey. In summary, and following a lengthy discussion, it was concluded that a special survey of truck drivers does not seem necessary.

Response: As suggested by the Conferees, FHWA will not be initiating truck driver surveys.

Proposal 8 - New Truck Travel Data Sources. More accurate information on annual travel per truck by various configurations would be beneficial for several reasons. A first step would be a short-term contract study to inventory and document current sources of truck registration data.

Response: FHWA sponsored research initiatives are evaluating various aspects of determining the size of the truck universe. This includes on going research to estimate heavy vehicle fuel economy and efforts to assess differences in vehicles in use by time of year. Other FHWA research will review truck activity for a select sample of trucks.

Proposal 9 - Assessing the Magnitude of Overweight Trucks and Their Impact on ESALs. It has been proposed that there be a study assessing the magnitude of overweight trucks and their impact on Equivalent Single Axle Loads (ESALs). It would be helpful for the work that has been completed to be summarized and reported. It is recommended that there be a synthesis of

practice to identify the diverse and complex overweight truck issues.

Response: This proposal is being evaluated to assess the most cost-effective method of addressing the issue. The data being gathered in support of the long-term pavement performance initiative as well as the Truck Weight Study will give valuable indications of the frequency and magnitude of overweight axles. Truck weight data to be collected in support of the Pavement Management Systems called for by the ISTEA will also provide valuable system level information on this issue.

Proposal 10 - Coordinating Administrative Records with Road Data. A small study is recommended to become aware of practices on existing use of administrative records by individual States for linking or estimating vehicular and traffic information.

Response: A number of the activities identified in proposal 8 are germane to this proposal also. In particular is the ongoing effort to better understand how registrations can be related to the actual number of vehicles in use over a year's duration.

Proposal 11 - Long-Run Strategic Plan for Truck Data. The purpose of this effort is to create a long-run strategic plan for developing national truck data systems.

Response: The scope of this effort is felt to be most appropriate to other national organizations such as the TRB. FHWA is willing to participate with an organization or organizations that may wish to sponsor the development of such a plan.

Proposal 12 - Policy Study of Overweight Truck Travel. The objective of this study is to determine the information on overweight trucks that the federal government needs for the purpose of: (1) cost allocation, revenue forecasting, and highway safety analysis; (2) developing intermodal freight policy; (3) evaluating State weight enforcement programs; and (4) evaluating alternative user fee structures. The study must also determine the type and amount of data needed, identify alternative sources of the data, and recommend the methods of collection.

Response: The FHWA provides ongoing review of a wide variety of issues related to truck operations including the impact of weight/dimensions. This review is expected to continue as is the regular analysis and reporting on the impacts of size and weight trends on safety and cost responsibility.

SENATOR LAUTENBERG: Will any planned actions provide improved travel and accident data by truck configurations so LCV data can be separately identified? Please discuss how this will be accomplished and when such data will be available.

ANSWER: The FHWA is investigating the feasibility and costs of conducting studies to obtain more definitive safety data. The alternatives include more detailed analysis of current data as well as new truck fleet or State case studies focused on LCVs.

Because of their scarcity, it is difficult to obtain sufficient LCV accident data from which to derive conclusive results. This is also true for LCV travel data, necessary for making accident rate comparisons. Virtually all the fatal truck involvements in the TIFA national database now include individual trailer length and gross vehicle weight, key items for identifying LCVs. Fatal accident involvements alone, however, cannot provide the desired results. Obtaining uniform

national data on all accidents and travel in sufficient detail to identify LCVs is currently not feasible. This is why the State-specific and carrier-specific studies mentioned elsewhere currently offer the greatest promise for producing meaningful LCV safety comparisons.

FHWA plans to conduct a study, using individual company accident and travel records, to compare accident rates for tractor semitrailers and LCVs. FHWA expects to award a contract for this study this year with a final report scheduled for April 1995.

SENATOR LAUTENBERG: What has resulted from the research into traffic monitoring equipment and improved traffic data sampling designs that was planned last year? Has any action been taken that will improve the collection of LCV-specific travel data?

ANSWER: The Georgia Department of Transportation is currently field testing automatic vehicle classification (AVC) equipment and sampling designs. A report is expected late this summer. LCV trailer lengths vary considerably. This variation makes it quite difficult to use AVC equipment to identify LCVs since overall length or axle spacing is used in the classification process. The FHWA is considering a study that would combine both overall truck length and axle spacing to allow better classification of LCVs.

SENATOR LAUTENBERG: Does the National Accident Sampling System (NASS) sampling areas include areas that allow LCVs? If not, are there any plans to include a sample of LCV areas?

ANSWER: While the NASS includes areas that allow LCVs, the sampling framework is insufficient to capture a sufficient number of LCV accidents to draw conclusions about accident trends. In addition, the reported data extracted from State and local police accident reports do not include trailer length needed to identify LCVs. There are no plans to expand NASS to specifically collect LCV accident data.

SENATOR LAUTENBERG: What progress has been made in establishing DOT's Bureau of Transportation Statistics? Does FHWA have plans to use the National Governors Association (NGA) data reported to Safetynet to identify LCV accidents?

ANSWER: The Bureau of Transportation Statistics (BTS) was established on December 16, 1992. The BTS has produced a Transportation Data Sampler, begun a nationwide collection of multimodal commodity flow data with the Bureau of the Census, initiated development of a similar survey of passenger flows, and launched a program to make data from the 1990 Census more easily usable by States and metropolitan planning organizations.

The NGA data does not include trailer length. Therefore, the FHWA cannot use it to identify LCV accidents.

SENATOR LAUTENBERG: What progress has been made concerning FHWA/National Highway Traffic Safety Administration's (NHTSA) research concerning LCV operational characteristics and the technologies that affect safety? When will this research be completed? Does FHWA have any interim results?

ANSWER: Antilock braking systems (ABS) and double-drawbar dollies will be tested on 17 Rocky Mountain double and triple-trailer combinations. Data on in-use maintenance, operational practicality, ABS functionality, trailer lateral movement, and time histories with and without double-drawbar dollies will be collected for about a year starting late this summer. The study will be conducted cooperatively with a group

of fleets based in Oregon and Idaho which currently operate these vehicles.

SENATOR LAUTENBERG: Will any of the FHWA/NHTSA research compare the effects of driving LCVs with that of driving tractors with twin 28 foot trailers being used in the driver fatigue study?

ANSWER: Many of the same types of data such as steering actions, driver heartrate variability, eye-hand coordination, and reaction time will be collected from drivers in both the Driver Fatigue and Alertness Study and the LCV Driver Stress and Fatigue Study (the latter mandated by ISTEA). It may be possible to compare fatigue and stress for tractor semitrailer drivers and LCV drivers from the two studies.

SENATOR LAUTENBERG: What, if any, action does FHWA plan as a result of the list of state LCV restrictions in place as of June 1, 1991, submitted by the states? Does FHWA consider this a complete listing of all restrictions?

ANSWER: Documentation of LCV operations and restrictions continues. FHWA published a Supplemental Notice of Proposed Rulemaking on February 25, 1993; the comment period closes May 27, 1993. The FHWA will address all comments received and will prepare a final list of lengths, routes, and operating restrictions later this year. The FHWA will also issue regulations to establish criteria for States to make minor adjustments to route designation and vehicle restrictions for specific situations due to safety purposes and road construction.

RADAR/LASER DETECTORS

Due to concerns about highway safety and commercial motor vehicles exceeding the speed limit, the Congress, in the Department of Transportation (DOT) appropriations act for fiscal year 1992, required DOT to publish a proposed rulemaking to prohibit the use of radar detectors in operating commercial vehicles. The proposed rulemaking was published on January 24, 1992, with comments due by May 26, 1992.

SENATOR LAUTENBERG: What is the status of the rulemaking on this matter?

ANSWER: The public comment period for proposed rulemaking closed on May 26, 1992.

Of the more than 26,000 responses to the docket, approximately 6,400 responders supported a ban and 19,700 opposed a ban. FHWA is considering the pros and cons of proceeding to a final rule.

SENATOR LAUTENBERG: What type of comments were provided during the rulemaking process and when will the rulemaking be completed?

ANSWER: Of the more than 26,000 responses to the docket, approximately 6,400 responders support a ban included representatives of the petitioners, the insurance industry, State Department of Transportation/Division of Motor Vehicles, State and local police, medical interests and highway safety oriented groups. Approximately 19,700 opposing a ban including driver and driver associations, the radar detector industry, the legal profession, and other individuals. FHWA is currently considering the pros and cons of proceeding to a final rule.

SENATOR LAUTENBERG: About how many trucks use radar detectors?

ANSWER: The FHWA does not have a valid, reliable data on the number of trucks using radar detectors.

SENATOR LAUTENBERG: Are there data available showing the relationship between accidents and speed, particularly in commercial vehicles?

ANSWER: There are no definitive data which directly link speed as the single cause of accidents in commercial motor vehicles. When a driver is speeding, it takes longer for the vehicle to stop; this could be the difference between an accident occurring or not occurring. The severity of an accident is greater when speeding is a contributing factor, and the likelihood of an accident increases with variations from the mean speed.

SENATOR LAUTENBERG: How many States currently prohibit the use of radar detectors?

ANSWER: Only Virginia and the District of Columbia ban the use of radar detectors in all vehicles. Illinois and New York ban them in commercial vehicles. Connecticut, which in June 1992 eliminated its total radar detector ban, is reportedly considering a ban in commercial motor vehicles only.

SENATOR LAUTENBERG: Is FHWA planning any action to ban laser detectors before they are developed and marketed? If not, why not?

ANSWER: In the Notice of Proposed Rulemaking on radar detectors, the FHWA requested comments on whether the definition of "radar detector" should be expanded to include other devices that may detect advanced speed limit enforcement technology such as laser beams. Of the 26,000 comments received on the NPRM, fewer than 50 addressed this issue. FHWA is currently considering the pros and cons of proceeding to a final rule on radar detectors.

IMPACT OF ISTEA ON MCSAP

SENATOR LAUTENBERG: What have been ISTEA's major impacts on the MCSAP program in the first year? What action has FHWA taken to assist States in accomplishing the new responsibilities?

ANSWER: Since the implementation of the ISTEA, the MCSAP has become more comprehensive, giving the States more options and the flexibility to design motor carrier safety programs to meet their unique needs. ISTEA has had a positive effect on MCSAP by increasing the funding for States and expanding the scope of MCSAP activities for size and weight, drug interdiction, traffic enforcement, hazardous materials training, research and development, and public education. In the ISTEA, funds are now available for two years, giving States greater control of their programs.

The FHWA continues to encourage the States to develop and test innovative programs and enforcement strategies that may improve motor carrier safety. For example, States are testing a device designed to check commercial vehicle brakes without an inspector having to get under the vehicle.

SENATOR LAUTENBERG: Please discuss progress made in each of the following areas: size and weight, drug interdiction, hazardous materials (Hazmat) training, truck and bus accident data, traffic enforcement, commercial drivers license (CDL) enforcement, research and development, and public education.

ANSWER: Under the ISTEA, funds are earmarked for the activities you have mentioned. The MCSAP requires States to identify in the State Enforcement Plan their level of activity in each program.

Drug interdiction and size and weight enforcement activities are now integral elements of the basic MCSAP grant, and are reimbursable activities when conducted in conjunction with an appropriate level of inspection. States are using MCSAP funds to support training of enforcement personnel to detect signs of illegal use or transportation of drugs. Indiana is discouraging circumvention of inspection sites by increasing mobile patrol using with portable scales.

Hazardous materials training funds have been allocated by formula to all States along with their basic and supplemental grant request. For example, Idaho personnel are receiving training in cargo tank and hazardous materials enforcement and compliance.

In FY 1993, \$1 million was allocated to the States for NGA-related activities. Currently, 22 States are submitting information on motor vehicle accidents consistent with the NGA elements.

Forty-six States are using MCSAP funds to carry out traffic enforcement activities in conjunction with roadside inspections. For example, Kansas uses the funds to increase enforcement in high-accident areas.

Funds for CDL enforcement are included in the basic formula allocations to all States. Washington enforcement personnel check for CDL violations on commercial vehicle operators who have been stopped for traffic violations. Minnesota is training additional State Patrol troopers to participate in CMV traffic enforcement activity (including CDL checks).

States are assessing new technologies that will improve the roadside inspection process by reducing the time needed to conduct an inspection. Included are a mobile inspection trailer, a combination brake testing and weighing device, and an infrared brake testing device.

Maryland was awarded a \$350,000 MCSAP grant for a multi-year project to develop and implement a national "Share the Road" educational campaign.

SENATOR LAUTENBERG: Will States have adequate resources to carry out these new responsibilities while maintaining their existing inspections activity? How will FHWA monitor to ensure that this takes place without decreasing roadside inspection activity?

ANSWER: The ISTEA provides adequate resources for an expanded MCSAP. We believe that States will meet the major goals for MCSAP under the requested funding level for FY 1994.

MCSAP -- ROADSIDE INSPECTION/REINSPECTION ACTIVITIES

SENATOR LAUTENBERG: How many roadside inspections were conducted in fiscal year 1992 compared with fiscal year 1991, and what percentage of vehicles and drivers were placed out-of-service for violations?

ANSWER: In FY 1992, States conducted 1,655,668 roadside inspections, compared with 1,574,188 in FY 1991. Twenty eight percent of the vehicles inspected were placed out-of-service in FY 1992 (compared with 32 percent in 1991), while 7 percent of drivers were placed out-of-service (compared with 8 percent in 1991).

SENATOR LAUTENBERG: How has the mix of inspections changed and why?

ANSWER: From FY 1991 to FY 1992, the rate of level I inspections (a comprehensive vehicle and driver inspection) decreased from 64 percent (1,013,017) to 60 percent (999,556). During that same period, Level III inspections (driver only) increased from 6 percent (99,561) to 9 percent (152,331). The percentage of Levels II, IV, and V inspections has remained roughly the same.

The slight shift toward the driver-only inspection may reflect the growing awareness of the driver's role in safety.

SENATOR LAUTENBERG: How many of the inspections performed in 1992, compared with 1991, were the more comprehensive level I inspections, and how did the out-of-service rates compare on these for both drivers and vehicles? Level IIs?

ANSWER: Of the 1.6 million roadside inspection performed in 1992 and 1.5 million in 1991, approximately 1 million were the more comprehensive level I, North American Standard inspection. In 1992, 35 percent of vehicles were placed out-of-service while 39 percent were placed out-of-service in 1991. For drivers, 6 percent were placed out-of-service in 1992 and 6.7 percent in 1991.

Over 475,000 level II walk around driver and vehicle inspections were performed in 1992, compared with 440,000 in 1991. The percent of vehicles placed out-of-service under a level II inspection remained approximately 21 percent for both 1992 and 1991. In 1992, 7 percent of drivers were placed out-of-service while 8 percent were placed out-of-service in 1991.

SENATOR LAUTENBERG: Are Level II inspections done in conjunction with stops for moving violations resulting in more driver out-of-service violations, given their surprise nature compared with those conducted at weigh stations?

ANSWER: The conduct of inspections in conjunction with traffic stops is a new MCSAP initiative and data on the results of this particular activity are just becoming available. The FHWA is examining ways to improve the effectiveness of all levels of inspections, particularly driver inspections and enforcement. We expect to have more definitive data on the impact of conducting Level II inspections in conjunction with stops for moving violations on the out-of-service rate this year.

MCSAP -- SAFETYNET

SENATOR LAUTENBERG: What progress and improvements have been made on the inspection and accident modules of SAFETYNET, FHWA's management information system?

ANSWER: The progress and improvements made on the inspection and accident modules of SAFETYNET include the following:

- providing information about "repaired at scene" versus "repaired away from scene" in verification of out-of-service defects;
- adding new data items required by ISTEPA (e.g., traffic enforcement and size and weight initiatives);
- using a faster, more reliable communications system for transmitting data to FHWA's mainframe computer and to download national reports; and
- improving the general operation of the system.

Forty-seven MCSAP States are routinely transmitting inspection data to FHWA.

The accident module was recently modified to collect all 22 data elements recommended by the National Governors' Association. Modifications were also made to improve the

general operation of the system. Twenty-two MCSAP States are routinely transmitting accident data to FHWA.

SENATOR LAUTENBERG: How many of the states have all of the required 1992 inspections uploaded to SAFETYNET? How long after the end of the year did this take? What is the major cause of delays? Which states have delays, and what is being done to improve the situation in those states?

ANSWER: Thirty-eight States have transmitted all the required 1992 inspections. A major cause of delays was the new release of SAFETYNET in June 1992. States that maintained their inspection data on a local mainframe had to reformat and convert these data files from the old format to the new one.

The following States had delays: New Jersey, New York, West Virginia, Indiana, Michigan, Ohio, Arizona, Alaska, and Idaho. We are working with the States to solve their problems and achieve timely data entry.

SENATOR LAUTENBERG: How many States have modified their accident reporting forms and reporting criteria to include all of the National Governors' Association (NGA) accident data elements? When will all States have this process completed?

ANSWER: The FHWA estimates that about one-third of the States have adopted the NGA accident data elements and accident reporting criteria. To get better information, our division personnel are now conducting process reviews in each State to assess the extent of the progress and identify problem areas confronting the States. After completion of the process reviews, the FHWA will devise strategies to help States move toward full adoption of the data elements and reporting criteria.

We do not expect all States to complete the process of adopting the data elements and reporting criteria, modify their State-accident report forms, collect data and report the results through SAFETYNET until 1997.

SENATOR LAUTENBERG: How many states consistently upload all of the NGA accident elements into SAFETYNET's accident module as opposed to only those entered under Phase I? How many are consistently entering only the Phase I data? (Last year's testimony indicated that although 20 States had uploaded accident information, only 9 were consistently doing so.)

ANSWER: Fifteen States are consistently uploading all of the NGA accident elements to FHWA; seven States are uploading only Phase I data.

SENATOR LAUTENBERG: What are the planned timeframes to get all states to enter all of the NGA elements in a timely fashion? Is additional emphasis being placed on this since the 50T accident reporting requirement has been dropped?

ANSWER: The FHWA is requiring that all NGA reportable accident data investigated by State police be uploaded to FHWA by January 1, 1994. NGA reportable accident data investigated by local police is to be uploaded by September 30, 1997. Since the 50T accident reporting requirement has been dropped, the FHWA is placing greater emphasis on providing technical guidance and training on NGA accident data reporting to the States.

SENATOR LAUTENBERG: Are there plans to include intrastate accidents in the SAFETYNET database to get a more complete picture of truck accidents since the 50T requirement has been dropped?

ANSWER: The SAFETYNET accident module has been changed to include accidents involving interstate and intrastate carriers and to provide more complete data.

SENATOR LAUTENBERG: What have been the primary problems in getting states to upload accident information in a timely fashion?

ANSWER: The primary problems FHWA has encountered are:

- State regulatory, legislative, and budgetary barriers that must be overcome to change State police accident reports to include all 22 NGA accident data elements;
- the time required to train State and local police accident investigators;
- difficulty in coordination between the MCSAP agency that must report data to FHWA and the State agency that collects accident reports; and
- delays between State and local jurisdictions in processing accident reports.

SENATOR LAUTENBERG: What assurances does FHWA have that all interstate accidents that meet the NGA criteria are actually being reported to SAFETYNET?

ANSWER: The FHWA is working with States to ensure they report all accidents using the NGA-recommended data elements. The FHWA has provided guidelines outlining reporting requirements. The FHWA also is conducting process reviews, providing assistance to States to overcome legislative, budgetary and regulatory obstacles, and providing technical support.

SENATOR LAUTENBERG: Please explain the progress on other facets of SAFETYNET, such as the Enforcement and Driver modules. What are the revised time frames for completion of these modules?

ANSWER: Driver traffic violations have been added to the SAFETYNET inspection module. Violations are tracked when a traffic citation is issued in conjunction with an inspection. The FHWA has also initiated a procurement action to provide the capability for Federal and State MCSAP investigators to electronically access CDLIS to check driver CDL license status. We expect to implement this portion of the driver module in 1994. The FHWA is working with the States to add carrier identification (DOT I.D. number) to traffic citations that are issued during a MCSAP inspection. We hope to have this new information added to SAFETYNET to help identify carriers which may need to be reviewed.

TRAFFIC ENFORCEMENT AND MCSAP

The Motor Carrier Act of 1991 requires the Secretary to allocate not less than \$4.25 million for each of fiscal years 1993, 1994, and 1995 to the MCSAP States to conduct traffic enforcement activities. I am told that this relatively new activity has been rather successful.

SENATOR LAUTENBERG: Please provide data on the number of citations or traffic stops and the specific allocation for traffic enforcement activities for each MCSAP State using these specified funds.

ANSWER: The preliminary data for first quarter FY 1993 indicate that 5.3 percent of roadside inspections conducted under MCSAP were initiated by traffic enforcement stops. Below are the States and the allocation amounts they received for traffic enforcement:

<u>STATE</u>	<u>FY 1993 ALLOCATION</u>	<u>STATE</u>	<u>FY 1993 ALLOCATION</u>
Alabama	103,763	Missouri	142,143
Alaska	25,000	Montana	41,000
Am. Samoa	25,000	Nebraska	72,316
Arizona	69,191	Nevada	34,402
Arkansas	*	New Hampshire	25,000
California	265,074	New Jersey	106,204
Colorado	78,768	New Mexico	37,056
Connecticut	45,217	New York	226,679
Delaware	25,000	N. Carolina	145,035
Dist of Col.	*	North Dakota	27,550
Georgia	158,133	Ohio	213,700
Guam	25,000	Oklahoma	99,044
Hawaii	25,000	Oregon	89,671
Idaho	40,537	Pennsylvania	240,113
Illinois	221,903	Puerto Rico	25,000
Indiana	137,429	Rhode Island	25,000
Iowa	105,200	S. Carolina	*
Kansas	98,881	Tennessee	109,530
Kentucky	93,907	Texas	*
Louisiana	81,687	Utah	40,000
Maine	*	Vermont	25,000
Maryland	80,880	Virginia	121,451
Massachusetts	83,372	Washington	110,762
Michigan	175,347	West Virginia	3,902
Minnesota	116,965	Wisconsin	113,840
Mississippi	62,757	Wyoming	31,591

* Did not request Supplemental funds in their SEP.

SENATOR LAUTENBERG: Please discuss in detail how you are implementing Section 4014 of ISTEA?

ANSWER: The FHWA has modified the criteria used to identify commercial motor carriers that present the greatest potential risk to highway safety and determine priorities for conducting on-site reviews. The criteria includes four factors: (1) potential severity of accidents in which the carrier is likely to be involved, (2) the mileage travelled or exposure of the motor carriers on the Nation's highways, (3) the safety performance of the motor carrier, including results of roadside inspections, and (4) the past compliance of the motor carrier with the Federal safety and hazardous materials regulations.

SENATOR LAUTENBERG: Are agencies receiving MCSAP funds for traffic enforcement activities required to place a U.S. DOT identification number on the traffic ticket so that OMC will be able to decide which companies are having "too many" traffic tickets? If not, why?

ANSWER: The FHWA does not require States receiving MCSAP funds for traffic enforcement activities to place the U.S. DOT identification number on all traffic tickets for violations committed by truck or bus drivers.

The FHWA is encouraging States to include this information on traffic tickets. Several States have agreed to change their citations, while others are encountering legal, administrative, and data processing problems. FHWA has formed a working group of State representatives active in the American Association of Motor Vehicle Administrators, the Commercial Vehicle Safety Alliance, and the International Association of Chiefs of Police. The working group will identify ways to overcome the barriers to implementing the concept nationwide.

The FHWA prefers to work collectively with the States to incorporate such changes into enforcement activities while

limiting the number of prescriptive requirements as a condition for Federal funding.

COST-EFFICIENCY AND MCSAP

SENATOR LAUTENBERG: The Motor Carrier Act of 1991 requires FHWA to conduct a rulemaking to determine a revised allocation formula for disbursement of MCSAP funds. How does your new formula for disbursement of the basic grant of MCSAP funds reward cost efficiency or effective programs? If it doesn't, why not?

ANSWER: The FHWA allocates most MCSAP funds among participating States and jurisdictions using a formula with the following factors: (1) road mileage (all roads), (2) vehicle miles traveled (all vehicles), (3) number of commercial vehicles over 10,000 pounds gross vehicle weight rating (registered), (4) population (current Census), and (5) special fuel consumption (net after reciprocity adjustment). The formula establishes minimum and maximum amounts that each State may receive. The FHWA redistributes unallocated or unused funds to enhance existing programs or foster innovative initiatives in order to help improve the effectiveness and efficiency of a State's or the National program.

The FHWA conducted a rulemaking to determine whether revisions were needed as required by the ISTEA. The FHWA issued final regulations with an updated formula last Fall. Based on the rulemaking and our working relationship with States, the FHWA believes the use of the formula is widely accepted and accounts for differing needs of States.

DATA FOR MONITORING TRUCK SAFETY

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) contains several provisions to improve transportation data, including creation of a Bureau of Transportation Statistics and an advisory council on transportation statistics, the truck and bus accident data grant program, the commercial vehicle information system program, and the requirement for a National Academy of Sciences study of Department of Transportation (DOT) data needs.

SENATOR LAUTENBERG: What progress has been made in establishing DOT's Bureau of Transportation Statistics? Does FHWA have plans to use the National Governors Association (NGA) data reported to Safetynet to identify LCV accidents?

ANSWER: The Bureau of Transportation Statistics (BTS) was established on December 16, 1992. The BTS has produced a Transportation Data Sampler, begun a nationwide collection of multimodal commodity flow data with the Bureau of the Census, initiated planning for a similar survey of passenger flows, and launched a program to make data from the 1990 Census more easily usable by States and metropolitan planning organization.

Because NGA data does not include trailer length, the FHWA cannot use it to identify LCV accidents.

SENATOR LAUTENBERG: What progress has been made on the Commercial Vehicle Information System pilot project, which the Motor Carrier Safety Assistance Program (MCSAP) funds at up to \$2 million per year?

ANSWER: Work on the Commercial Vehicle Information System (CVIS) project is progressing well. Iowa DOT is the lead State in the CVIS project. A steering committee, comprised of State and Federal officials, is providing oversight to the project and has developed a work plan.

Four States--Colorado, Nebraska, Indiana, and Oregon, have expressed interest in becoming pilot States. The pilots are expected to begin next year. A major component of the CVIS will use standardized data such as a carrier's safety rating, and accident and inspection history. The report to Congress on the feasibility of the project is due January 1, 1995.

SENATOR LAUTENBERG: How many states have the capability to tie their registration files to their records of carrier fitness, MCSAP inspections, and accident records? What actions will be taken to encourage more states to develop this capability?

ANSWER: To the best of our knowledge, no State is currently electronically tying its registration files to records of carrier fitness, MCSAP inspections, and accident records. Through SAFETYNET, a State could check the safety fitness rating of an interstate motor carrier. Such a check would have to be done manually because there is no automated electronic linkage between the State vehicle registration system and safety records. The development and testing of the Commercial Vehicle Information System will provide States with the capability to electronically link vehicle registration with safety fitness ratings, as well as carrier accident and inspection history.

TRUCK WEIGHT ENFORCEMENT

Overweight trucks pose safety hazards and result in more rapid highway and bridge deterioration. Yet, FHWA notes that data from weigh-in-motion surveys and weight scale bypass studies indicate that overall as many as 10 to 20 percent of trucks are overweight.

SENATOR LAUTENBERG: What were the results of FHWA's latest "Overweight Vehicles - Penalties and Permits" report with respect to trucks weighed, divisible load multiple-trip permits issued, and citations issued? How do these figures compare with those of past years?

ANSWER: The 1989-1991 data are as follows:

	<u>1989</u>	<u>1990</u>	<u>1991</u>
Trucks Weighed	146,950,900	149,186,594	150,427,618
DLMT Permits	136,267	140,697	160,914
Citations Issued	692,673	667,954	663,204

SENATOR LAUTENBERG: How many of the trucks weighed were weighed by using the Weigh-in-Motion (WIM) technology at sites other than those to screen trucks at existing weighing sites? What are the results of weighing in nontraditional sites? Does FHWA have these data from any states?

ANSWER: In FY 1991, 33.7 million trucks were weighed using WIM and 2.5 million trucks were weighed on portable or semiportable scales. Because citations are reported by type of violation and not by the type scale used, the FHWA does not know the number of citations by scale type. We believe that most of the WIM weights are from sorter scales located at permanent stations.

Federal regulations require States to report the number of trucks weighed by type of scales (permanent, semiportable, or portable).

SENATOR LAUTENBERG: What progress has been made in assessing the damage done by trucks using the divisible load, multiple-trip permits? What steps has FHWA taken to discourage state issuance of divisible load, multiple-trip permits?

ANSWER: The FHWA has prepared a draft Advance Notice of Proposed Rulemaking (ANPRM) with intent to revise its vehicle size and weight monitoring regulation 23 CFR 657. As part of the ANPRM, FHWA intends to ask the following questions:

- Has the State determined pavement and bridge costs attributed to vehicles operating under special permit? If so, please describe the methodology.
- Does the State have a computerized permit data management system that reports permits by type, i.e., single trip non-divisible load, single trip divisible load, multiple-trip non-divisible load, and multiple-trip divisible load. If so, please describe the program used.
- Can the State determine from its permit application system the number of trips made under multiple-trip permits, the length of each trip, or axle weights?
- Please provide your ideas on the feasibility of determining pavement and bridge, enforcement, and administrative costs of the special permit program.

State comments, as well as other docket responses, will be used to determine the need to document the amount of pavement wear due to trucks operating under overweight permits and to develop FHWA policy regarding divisible load, multiple-trip permits. The FHWA will use its annual program review of State enforcement activities and its review of a State's enforcement plans to encourage changes in permit policy.

The FHWA believes the information obtained will help assess the damage done by trucks operating under divisible load permits.

SENATOR LAUTENBERG: Studies have shown that overweight axles do considerably more damage to roads and bridges than do trucks that have gross vehicle weight violations. How many states have more severe penalties for axle overloads than for gross weight overloads? Can FHWA use the annual size and weight plan approval process to encourage more attention to this area?

ANSWER: The information contained in the most recent Overweight Vehicles - Penalties and Permits, April 1992, indicates that 4 States (Florida, Iowa, New York, and Utah) have more severe penalties for axle overloads than for gross weight overloads.

The FHWA uses the annual size and weight enforcement plan approval process to encourage improvements to a State's size and weight enforcement program. In addition, we will soon be asking States, through the rulemaking process, to review the basis for current fine structures. We will assess ways to improve the fine structure to account for overweight axles.

SENATOR LAUTENBERG: FHWA noted last year that some states charge as little as \$5 for an overweight permit and that this would not even cover the administrative cost of issuing such permits. Does FHWA have any plans to question these states' certifications based on their refusal to charge fees that would cover pavement and bridge damage? If not, why not?

ANSWER: The amount of fees or fines imposed traditionally has been a State prerogative. The FHWA is preparing an Advance Notice of Proposed Rulemaking (ANPRM) with intent to revise its vehicle size and weight monitoring regulation. As part of the ANPRM, we intend to ask the following questions: What is the basis for the current overweight permit fee and fine structures? Do the fees and

finer include the cost of pavement and bridge wear? What are administrative costs and enforcement costs? The objectives of the rulemaking are to help determine what information is available and whether it is appropriate to require States to provide FHWA additional data and information as part of their certification of weight enforcement activities.

SENATOR LAUTENBERG: What has been the result of adding selected size and weight enforcement to MCSAP activities? Have the multiple state agencies previously involved complicated the process?

ANSWER: Adding selected size and weight enforcement to MCSAP activities has made the MCSAP a more comprehensive program and gives the States more flexibility in designing their commercial motor carrier programs. These activities, as well as the purchase of portable scales, have been added as eligible costs so long as they do not diminish the effectiveness of the State's commercial motor vehicle safety program. The multiple State agencies previously involved in MCSAP do not further complicate the process. Rather, the additional activities that are now eligible make the grant process more complex to monitor and track.

DRUG TESTING

The Federal Highway Administration (FHWA) issued its final rule on August 16, 1991, requiring random and post accident drug testing by interstate motor carriers. This rule was effective on November 14, 1991, for motor carriers with 50 or more drivers subject to testing, and on January 1, 1992, for all other motor carriers.

SENATOR LAUTENBERG: What methods are carriers using to comply with testing their drivers? What have been the results of these tests?

ANSWER: To comply with the random drug testing requirements, many smaller motor carriers utilize a consortium-based testing program. Carriers join a local consortium with the expertise to develop and manage a computerized selection system. The carriers are notified of the random selection and drivers are instructed to report to a collection facility. Larger carriers are able to develop and document their own random testing program procedures.

Commercial motor carriers use a variety of methods to ensure post-accident drug testing. In the event a driver is involved in an accident, the driver may be directed by the motor carrier to report to the nearest collection site. Many carriers have contracted with such collections sites in their operating areas part of their post-accident testing program. To ensure use of appropriate drug testing materials, some carriers place a collection kit in each of their vehicles for use by qualified collection site personnel. Other carriers employ their own collection personnel who are sent to the accident site for driver testing.

Motor carrier compliance with the drug testing requirements is evaluated as part of Federal and State carrier reviews. The FHWA does not collect the results of drug tests. To protect the privacy of individuals, test results are sent to a medical review official designated by the motor carrier. Under Federal safety regulations, an individual who tests positive is prohibited from driving until he tests negative. The FHWA penalizes motor carriers who do not comply with drug testing requirements.

SENATOR LAUTENBERG: Are checks made during safety reviews adequate to determine whether carriers are complying with random testing, given the relatively small percentage of

carriers visited each year? Are any other monitoring or enforcement activities planned to check compliance?

ANSWER: Yes, we believe the checks made during carrier safety reviews by FHWA safety specialists and State officials are adequate to determine whether carriers are complying with random testing. At this time there are no other monitoring or enforcement activities planned to check compliance.

SENATOR LAUTENBERG: How many post-accident drug tests have been given and what have been the results?

ANSWER: For FY 1992, 2,237 post-accident drug tests were conducted. This is approximately 0.8 percent of all the drug tests conducted for FY 1992. Of these tests, 128 were positive, which is approximately 5.7 percent of the post-accident drug tests conducted.

SENATOR LAUTENBERG: Based on the first quarter results of the pilot drug and alcohol testing program conducted under MCSAP, what are the use rates of these substances in the motor carrier industry? What were the results for operators of commercial buses?

ANSWER: The first quarter results of the drug and alcohol testing programs conducted under MCSAP resulted in 6,443 drug tests conducted with a positive rate of 4 percent and 18,275 alcohol tests conducted with a positive rate of 0.2 percent of commercial motor vehicle drivers.

SENATOR LAUTENBERG: How many enforcement actions were closed last year against motor carriers for using drivers that had tested positive on a drug test, but had not yet retested negative? How many of these cases were conducted against small trucking companies?

ANSWER: There were 43 enforcement actions closed in FY 1992 against motor carriers for using drivers who tested positive on a drug test. Data on the size of carrier are not readily available.

SENATOR LAUTENBERG: One labor organization has told committee staff that FHWA is not catching a sufficient number of owner-operators that drive when they are not qualified to drive because of a positive drug test. What is FHWA's response to this allegation?

ANSWER: We are not aware of any data that substantiate this allegation. The FHWA requires owner-operators to be tested for controlled substances the same as any other commercial vehicle driver who is subject to the controlled substances testing regulations.

ALCOHOL AND DRUG INTERDICTION ACTIVITIES UNDER MCSAP

The Intermodal Surface Transportation Efficiency Act of 1991 requires states to, among other things, promote alcohol and drug interdiction activities, under MCSAP.

SENATOR LAUTENBERG: How many States have begun to use MCSAP funds for drug and alcohol interdiction? What have been the results of these activities, i.e., trucks searched, arrests made?

ANSWER: Approximately a dozen States have used MCSAP funds to integrate effective drug interdiction activities and training strategies into their regular MCSAP activities. For example, Iowa served as the lead State (with 14 other States)

for coordinated drug interdiction checks carried out in conjunction with traffic enforcement and roadside inspections. Data on overall drug interdiction results are not yet available.

SENATOR LAUTENBERG: How many more States do you anticipate will participate in the program?

ANSWER: We expect all States will have an appropriate level of effort for alcohol and drug interdiction activities.

MOTOR CARRIER SAFETY REVIEWS

In a January 1991 report, GAO stated that the Federal Highway Administration (FHWA) was unlikely to meet its goal of providing safety fitness ratings by September 30, 1992, to the 129,000 interstate motor carriers that still needed to be rated. FHWA subsequently testified that it was reevaluating its goal of rating all carriers in favor of rating those with the greatest safety risk and that state participation in safety reviews was increasing.

SENATOR LAUTENBERG: What data do FHWA and the states use to identify carriers with the greatest potential risk? Has this process resulted in a greater percentage of carriers rated in the conditional and unsatisfactory categories? Please give the number of ratings conducted and the resulting ratings of the carriers for the last 3 years.

ANSWER: A carrier is prioritized for review based on the potential severity of accidents in which it is likely to be involved, its exposure on the Nation's highways, its past safety performance, and its past compliance with the motor carrier safety and hazardous materials regulations.

The number of ratings assigned during the past three fiscal years and the percentages of the total for each rating category are presented below:

	<u>FY 1990</u>	<u>FY 1991</u>	<u>FY 1992</u>
Satisfactory	10,244 (52%)	14,068 (55%)	12,221 (59%)
Conditional	6,603 (33%)	7,735 (30%)	5,339 (26%)
Unsatisfactory	3,066 (15%)	3,865 (15%)	3,080 (15%)
All Ratings	19,913 (100%)	25,668 (100%)	20,640 (100%)

SENATOR LAUTENBERG: For those carriers rated conditional and unsatisfactory, how much time lapses before they are visited again under the Selective Compliance and Enforcement program? Are those rated unsatisfactory visited more quickly?

ANSWER: The amount of time between visits (i.e., reviews) for conditional and unsatisfactory carriers varies based on the level of risk which the carrier presents to the public. The Selective Compliance and Enforcement program includes all carriers rated less than satisfactory, but recognizes that all carriers having the same (or worse) rating do not always present the same level of risk. In order to best focus FHWA's compliance and enforcement resources, a system for identifying high risk carriers using current information (SAFETYNET) has been developed for prioritizing compliance reviews. This process is applied to both conditional and unsatisfactory rated carriers and considers information such as the size of the operation, the number of accidents, time since the last review, the carrier's out-of-service rates, and previous noncompliance and rating history, among other factors. In some instances, this process results in a conditional carrier being reviewed prior to an unsatisfactory carrier. FHWA's position is that such a carrier presents a greater hazard to the public and should be visited sooner in the

interest of effectiveness. FHWA is evaluating the use of similar real time information for the safety rating process, which could result in rating reassignments on a quarterly basis.

SENATOR LAUTENBERG: What enforcement actions has FHWA taken for serious safety violations? How many motor carriers has FHWA closed down due to unsatisfactory safety ratings over the last 3 years? What have been the civil fines assessed and collected by this program over the last 3 years?

ANSWER: The FHWA takes appropriate civil enforcement actions for serious safety violations. The FHWA closed down 11 motor carriers which had continued non-compliance with the regulations during FY 1991 and 19 carriers in FY 1992. The total amount of civil fines assessed in FY 1990 was \$7,302,706; in FY 1991, \$8,200,243; and in FY 1992, \$10,155,278.

USE OF CONSENT ORDERS

SENATOR LAUTENBERG: I have heard some regional offices rarely if ever, use consent orders, while other regional offices frequently use this tool. Please specify how many consent orders each of the regional offices issued last fiscal year. What are you doing to increase the uniform and effective use of this enforcement strategy by all of your regions?

ANSWER: The total number of consent orders issued nationwide is unavailable. To increase the uniform and effective use of consent orders, they are being issued more frequently with out-of-service orders.

ENFORCEMENT POLICIES

SENATOR LAUTENBERG: I am told that OMC is expanding the number and types of officials that can issue claim letter and negotiate settlements. How many of your Officers-in-Charge now conduct this function? How is this arrangement working and will it be expanded to all States?

ANSWER: Officers-in-charge do not issue claim letters or negotiate settlements. Claim letters are issued by the Regional Directors. In some Regions, the claim letters are prepared by the division offices for signature by the Regional Director.

A pilot program is now underway in which a limited number of State Directors negotiate settlement agreements. The settlement agreements are reviewed and signed by the Regional Director.

SENATOR LAUTENBERG: Is it against the spirit of "due process" or the Administrative Procedures Act to have so many different people with different backgrounds who are generally not attorneys handle and process enforcement actions against motor carriers?

ANSWER: When necessary, the safety specialist or manager seeks the advice of FHWA legal counsel.

SENATOR LAUTENBERG: Please list and describe in detail all of the changes and improvements that were implemented during the last year in the policies, procedures, and strategy of OMC's Federal Enforcement Program. Separately, please respond similarly regarding your hazardous materials enforcement operations.

ANSWER: We are constantly fine-tuning our enforcement program and have not identified the need for major changes in the policies, procedures, and strategy of OMC's Federal Enforcement Program. We have continued to target our enforcement and compliance activities to motor carriers with safety problems and enhance our partnership with the States to develop comprehensive motor carrier safety programs.

HAZARDOUS MATERIALS

The Congressional Research Service has recently released a report that reviewed DOT's implementation of the 1990 Hazardous Materials Uniform Transportation Safety Act. The report found that two of the key provisions that have not been implemented were the responsibility of the FHWA. The report noted that the final regulation for improved routing, which was due last May, has not been issued and the final regulation on permitting, which was due in November 1991, remains in limbo.

SENATOR LAUTENBERG: Why have you failed to meet the deadlines in the 1990 Act?

ANSWER: The delay in meeting the deadlines in the 1990 Act was due to the large number of other high priority regulatory actions, many of which required extensive research, analysis and data collection. The rulemakings required coordination and concurrence with other agencies outside of the Department. Development of the NPRM was further delayed last year due to work on the regulatory moratorium. Departmental resources were also focused on development of the Congressionally mandated alcohol and drug testing regulations.

FHWA was the only modal administration to show a decline in the total amount of hazardous materials transportation penalties collected when FY 90 results were compared to FY 1991 results.

SENATOR LAUTENBERG: Why did this occur? Didn't the number of safety specialists increase during this period? What does comparable data look like for FY 1992?

ANSWER: In FY 1991 there was an overall increase in compliance by hazardous materials carriers and shippers with the safety and hazardous materials regulations. Although the number of safety specialists increased in 1991, the new specialists were not hired until the last quarter of the fiscal year and were not yet conducting carrier reviews.

SENATOR LAUTENBERG: What steps since last year have you taken to increase the vitality and vigor of OMC's hazardous materials enforcement program?

ANSWER: The FHWA has directed its attention to shippers and cargo tanks. We are developing a risk index for identifying problem shippers of hazardous materials and setting priorities for on-site reviews. We are developing and implementing an enforcement strategy for changes in the cargo tank requirements. The Hazardous Materials Technical Advisory Group targeted enforcement activities at port facilities, stepped up reviews of hazardous materials carriers and shippers, and increased training for State personnel.

SENATOR LAUTENBERG: Please present data on the number of hazmat enforcement cases, the size of penalties collected, the number of compliance reviews or audits conducted on shippers and carriers of hazardous materials during each of the last three fiscal years.

ANSWER: The data are as follows:

	<u>1990</u>	<u>1991</u>	<u>1992</u>
Number of HM enforcement cases	157	160	335
Penalties settled	\$613,753	\$564,675	1,181,590
Number of reviews (carriers)	1,947	2,280	3,189
Number of reviews (shippers)	1,515	2,002	2,889

SENATOR LAUTENBERG: How much of OMC's FY 1994 budget request will be used to support the hazardous materials permitting and registration group and other activities associated with this topic? Please specify each of these expenses and their objectives.

ANSWER: The FHWA estimates that \$150,000 in FY 1994 will be used for conducting State pilot projects related to Section 22 of the Hazardous Materials Transportation Uniform Safety Act of 1990. Section 22 requires the establishment of a working group to develop uniform procedures for registering and permitting hazardous materials motor carriers and shippers. The working group (the Alliance for Uniform HazMat Transportation Procedures), which is staffed by the National Governors' Association (NGA) and the National Conference of State Legislatures (NCSL) under a contract with the FHWA, will deliver final recommendations to the Secretary and Congress this year.

The FHWA will fund a State pilot test of the recommendations. Four States (tentatively California, Nevada, Ohio, and West Virginia) will participate in the pilot test. Project tasks include: (1) establishment of a repository to facilitate the exchange of information between the pilot States, (2) meetings of the steering committee, (3) reviews of the hazardous materials registration and permitting procedures of the pilot States, (4) reports to FHWA on the progress of the pilot test, and (5) recommendations to the Secretary on whether to modify the recommendations of the Alliance based on the experience gained from the pilot test. The results of the pilot test will be available in 1995.

SENATOR LAUTENBERG: HM-183 dealing with cargo tanks is an extremely technical rulemaking that poses specified inspection demands on OMC. What is the technical ability of OMC's field staff to ensure compliance with these regulations? Do you have any structural engineers with expertise in cargo tanks or engineers that understand ASME certification requirements pertaining to cargo tanks that can inspect cargo tank manufacturers?

ANSWER: The FHWA has access to the necessary technical expertise and training to ensure compliance with the cargo tank regulations. We draw upon the expertise of FHWA structural engineers to assist hazardous materials safety specialists in conducting on-site compliance reviews of cargo tank manufacturers using specific guidelines. We review calculations performed by the manufacturer to ensure the structural integrity of cargo tanks and related devices to help protect the tanks against accident damage. We have contracted with universities to help verify calculations when needed.

The 4-year-old Cargo Tank Technical Assistance Group, composed of Federal and State hazardous materials safety specialists, helps coordinate enforcement activities and sponsors training on cargo tank certification requirements.

MOTOR CARRIER SAFETY STATISTICS

SENATOR LAUTENBERG: Please update for the record with FY 1992 data each of the major charts or graphs presented in the Fiscal Year 1991 annual report of accomplishments and effectiveness of the Office of Motor Carrier Field Operations. Please be certain that you include information on the total amount of penalties collected, assessed, the number of safety and compliance reviews conducted by OMC staff, the number of officers, and the number of reviews of hazmat shippers, carriers, container manufacturers, and others subject to your jurisdiction. For each factor compare FY 1991 data to FY 1992 data.

ANSWER: The following is the information requested:

	<u>FY 1991</u>	<u>FY 1992</u>
Penalties	\$8,388,000	\$10,155,000
Federally conducted:		
Safety Reviews	8,700	3,883
Compliance Reviews	7,995	8,645
Number of Officers	366	397
Hazardous Material Shipper		
Reviews conducted	2,002	2,889
Cargo Tank Manufacturers		
Reviews conducted	Unavailable	32
Hazardous Material Carriers:		
Compliance Reviews Conducted	2,280	3,189

TRAINING OF SAFETY SPECIALISTS

I understand that OMC would like to move its training staff from the Transportation Safety Institute to the Washington, D.C. area and to co-locate training with the National Highway Institute.

SENATOR LAUTENBERG: Please present detailed estimates of expected cost savings to OMC associated with this proposal.

ANSWER: Based on a preliminary analysis of transferring the motor carrier training academy to the Federal Highway Administration and relocating the academy to the Washington area, we estimate an annual cost savings of approximately \$200,000.

Currently the FHWA is charged overhead expenses for the management and administrative costs of operating the training academy. In the event the training academy transfers to FHWA these overhead charges would be significantly reduced since current FHWA staff would absorb the majority of those responsibilities. In addition there will be savings as a result of the elimination of travel between Oklahoma City and the Washington area for both headquarters staff and instructors as well as the training staff located in Oklahoma City.

SENATOR LAUTENBERG: Is an Appropriations bill or report language needed to facilitate this move?

ANSWER: No. The move can be accomplished administratively within the Department.

SENATOR LAUTENBERG: Won't the per diem expenses of training be higher in the Washington, D. C. area than at TSI? Please include this consideration in the requested cost estimate.

ANSWER: Although the per diem rates in the Washington area are higher than Oklahoma City, due to the volume of

training conducted we plan to negotiate cost effective lodging and subsistence rates with local concerns which would be substantially lower than actual per diem allowances.

SENATOR LAUTENBERG: What are the advantages of maintaining the current training relationship with TSI? Doesn't TSI also offer hazmat training courses for OMC safety specialists?

ANSWER: The advantages of maintaining the Transportation Safety Institute (TSI) relationship is to retain the traditional, consistent delivery of training to Federal and State motor carrier students in a familiar environment and to maintain support of an established Departmental organization.

Motor carrier hazardous materials training courses for both Federal and State personnel are offered by TSI through the motor carrier training academy.

SENATOR LAUNTENBERG: What do the affected training employees think of a possible move to Washington?

ANSWER: The Transportation Safety Institute's motor carrier training staff are employees of the Research and Special Programs Administration. We understand those affected employees would be willing to transfer to FHWA with their current position if the motor carrier training function is relocated to the Washington area.

REPROGRAMMING OFFICE OF MOTOR CARRIER (OMC) FUNDS

SENATOR LAUTENBERG: At any time during the last year has OMC reshuffled its funds among different object classes? Please identify the amount and nature of these transfers that occurred during FY 1992 and 1993 to date. Was there any reprogramming or transfer among different OMC controlled budget accounts?

ANSWER: Since the formulation of the budget is 1 1/2 years prior to the receipt of an appropriation it is necessary to make minor adjustments between object classes to more accurately reflect the current funding needs of the organization and to accommodate any earmarkings.

The FHWA did not incur any reprogramming or transfers among budget accounts during FY 1992.

RESEARCH RESULTS

SENATOR LAUTENBERG: What have been the major accomplishments and benefits of Office of Motor Carriers (OMC)-sponsored research efforts during the last three years? How has this information been used in your rulemaking process?

ANSWER: During the past three years, FHWA's motor carrier research program has:

- assembled and piloted effective, new diagnostic equipment for measuring commercial driver fatigue and alertness during actual driving operations;
- obtained current information on a number of driver medical conditions, including cardiac, hearing and neurological disorders;
- evaluated the effectiveness of the motor carrier out-of-service vehicle criteria and identified defects for correction;
- piloted procedures to ensure maximum response rate and assure statistically valid responses to a survey of truck driver substance abuse;
- assembled and begun piloting various methodologies to perform random roadside testing for driver substance abuse;

- worked to develop and provide reliable and uniform accident data;
- successfully coordinated efforts among the States to simplify and make more uniform motor carrier registration and taxation requirements;
- provided (and continues to provide) support for motor carriers adopting uniform, standardized base-state procedures on vehicle registration and tax reporting; and
- conducted public hearings to identify performance-based standards for improving the Federal Motor Carrier Safety Regulations (FMCSRs), setting the stage for research to construct new FMCSRs.

Much of the motor carrier research effort is designed to evaluate the current FMCSRs and determine, from the evidence obtained, if revisions are needed. Research study recommendations are used frequently to formulate Notices of Proposed Rulemaking (NPRMs). Typically, the NPRM preamble will discuss the scientific determinations and lay the groundwork for proposals of alternative standards or procedures for public comment.

Examples of recent research leading to, or which will lead to, rulemaking include: the National Governors' Association study of accident data (new accident reporting guidelines), diabetes (NPRM on diabetes), vision (Advance NPRM and waiver on vision), fatigue (future NPRM on driver hours-of-service), and brake performance (revisions to braking standards).

SENATOR LAUTENBERG: Please prepare a list of OMC-sponsored research reports that have been entered into the National Technical Information Service (NTIS) along with their NTIS identification numbers during the last three years. Please also list OMC-sponsored research papers or reports (including their dates of completion) that have either not been published or have not yet been entered into NTIS for this same period. Why aren't all of your key research studies placed into NTIS which would promote broader dissemination?

ANSWER: The following list provides the names of the reports for which research has been completed and forwarded to NTIS. Explanations are provided for those reports not sent to the NTIS.

Contract Research Reports
Available from
National Technical Information Service

<u>Title</u>	<u>Accession Number</u>
Conference on Psychiatric Disorders and Commercial Drivers	PB91-236372/AS
Conference on Pulmonary/Respiratory Disorders and Commercial Drivers	PB91-236455/AS
Visual Disorders and Commercial Drivers	PB92-143015
Insulin-Using Commercial Motor Vehicle Drivers	PB92-183003
Influence of Braking Strategies on Brake Temperatures in Mountain Descents	PB93-137032

"Hearing Disorders and Commercial Motor Vehicle Drivers" has been forwarded to NTIS. FHWA has not been advised of the accession number.

Review of the report "Enforcement of Hours-of-Service Regulations" disclosed the lack of available statistical

results because the data collected was insufficient to provide reliable analysis.

Many of FHWA's research projects are multi-year projects. Interim reports are not required for these efforts and the final results do not result in a published report for several years. Other published studies are used solely to augment analysis conducted by staff and are not considered for NTIS distribution.

SENATOR LAUTENBERG: Please compare the research request submitted to the Congress for FY 1991 and FY 1992 against how these monies were actually allocated on a project-by-project basis or topic-by-topic basis.

ANSWER: The \$1.782 million appropriated for FY 1991 was requested and allocated by category as follows: motor carrier safety (\$1,000,000) and information and analysis (\$782,000).

The \$3.579 million FY 1992 appropriation differed from allocations as follows: motor carrier safety (\$2.6 million appropriated, \$2.3 million allocated), information and analysis (\$1.0 million appropriated, \$.8 million allocated). The combined \$.5 million not allocated to these categories was directed towards the support of a hazardous materials uniformity working group authorized under Section 22 of the Intermodal Surface Transportation Efficiency Act of 1991 which was enacted during the appropriations process.

SENATOR LAUTENBERG: Do you redesign the allocation of research funds to meet pressing research challenges that arise?

ANSWER: Research planning and administration demand a constant reassessment of resources. Fund allocations are changed for several reasons:

- differences between anticipated and budgeted research funds;
- difference between the planned (estimated) costs of individual projects and the prices ultimately negotiated with contractors;
- new funding required by projects not captured by the planning process (e.g., research necessitated by newly enacted statutory requirements);
- increases or decreases in the cost of active research, due to technical challenges, unanticipated problems or task delays.
- The need to advance or delay planned studies to an earlier or later fiscal year.

FATIGUE STUDY

SENATOR LAUTENBERG: Please summarize the status, challenges, and progress to date of all fatigue research sponsored with OMC funds.

ANSWER: Our objectives are to conduct research on a representative sample of commercial drivers, operating under a variety of schedules, operation, and equipment, with the goals of defining and disseminating effective fatigue countermeasures and scientifically determining if alternative hours-of-service standards should be enacted through Federal rulemaking. The fatigue research focuses initially on data gathering and analysis of driver activities, with subsequent testing of potential countermeasures under controlled and real-world conditions.

The FHWA has initiated studies to: (1) measure loss of alertness and onset of fatigue among commercial motor vehicle (CMV) drivers, and (2) review and analyze physiological data of CMV drivers. Field trials of monitoring equipment and analysis

procedures were conducted last summer. Data collection is planned to commence this year. We expect results in 1994.

A major challenge will be to assess the effects of longer combination vehicle (LCV) operation on driver stress and fatigue levels and fatigue-producing effects of LCV operation to that of conventional combination-unit truck operation.

SENATOR LAUTENBERG: What is the total amount requested for this research activity during FY 94? Please break down this request into specific components.

ANSWER: In FY 1994, \$567,000 is allocated to driver fatigue related research. This includes an estimated \$267,000 for research on driver rest and recovery cycles, \$150,000 to study fatigue problems of "on-call" bus drivers, and \$150,000 to study the effects of cargo loading and unloading on driver fatigue.

SENATOR LAUTENBERG: When will FHWA start the rulemaking process that could lead to a redesign of FHWA's hours-of-service regulations?

ANSWER: It is premature to judge whether the study results will warrant a change in the hours-of-service regulations.

OMC TRAVEL

SENATOR LAUTENBERG: In what ways have you attempted to reduce travel expenses?

ANSWER: FHWA uses Federal contract air carriers and negotiates hotel rates below standard per diem whenever possible to minimize travel expenses. In addition, FHWA schedules multiple carrier reviews within close geographical proximity to help reduce travel time and costs.

SENATOR LAUTENBERG: How often and why does FHWA waive the government per diem rates for travel by OMC employees and allow actual expenses? How many waivers were granted last year?

ANSWER: Approval of travel expenses above government per diem rates is rarely given and only when suitable hotel accommodations at per diem rates are unavailable. During FY 1992 6 waivers for actual expenses were given.

SENATOR LAUTENBERG: Please break down travel expenses requested for FY 1994.

ANSWER: Office of Motor Carriers travel funding by category:

(\$ in thousands)

FY 1994

Program(inspections, review, etc.)....	\$3,164
Washington Office Directed.....	282
Regional Conferences.....	622
Training.....	745
Change of Station.....	79
Foreign Travel.....	61
Inflation Factor.....	134

TOTAL.....	\$5,087

REGULATORY BACKLOG

SENATOR LAUTENBERG: How many regulatory dockets are now under consideration by the OMC? Please prepare a list of these dockets and their date of origin. What are the points of delay in the regulatory review process, i.e., which offices at DOT take the longest in approving proposed regulatory actions?

ANSWER: There are currently 18 rulemaking dockets open. The regulatory review process within FHWA and OST consists of several levels of review to ensure any regulatory and economic burdens placed on the industry in order to improve the safety of the motoring public. Each level has a responsibility to review different aspects of a rule. The length of review at each level varies and depend on the complexity of the aspects of the issues.

<u>DOCKET NUMBER</u>	<u>TITLE</u>	<u>DATE OPENED</u>
MC-88-15	Private Carriage of Passengers	2/89
MC-87-17	Diabetes	10/90
MC-91-8	Safety Fitness Procedures; Safety Ratings	1/91
MC-90-14	Radar Detectors	1/92
MC-91-1	Vision	2/92
MC-92-15	Restrictions on LCVs	3/92
MC-92-35	Studies of the Regulation of Emergency Vehicles on the Interstate System and Transporters of Water Well Drilling Rigs on Public Highways; Request for Comments; Notice	10/92
MC-92-19	Alcohol Testing Rules	12/92
MC-93-2	Qualifications of Drivers; Controlled Substances Testing (MIS)	12/92
MC-92-23	Drug Testing Rules	12/92
MC-93-3	Controlled Substances and Alcohol Use and Testing: Foreign-based Motor Carriers and Drivers	12/92
MC-92-13	Violations of Out-of-Service Orders by Commercial Motor Vehicle Operators	1/93
MC-92-10	Mandatory Minimum Training Requirements for Operators of Longer Combination Vehicles	1/93

SENATOR LAUTENBERG: How many advanced notices of proposed rulemaking are you now preparing for issuance?

ANSWER: The FHWA is preparing six advance notices of proposed rulemaking.

SENATOR LAUTENBERG: How many notices of proposed rulemaking are you preparing for issuance?

ANSWER: The FHWA is preparing eleven notices of proposed rulemakings.

SENATOR LAUTENBERG: How many senior rulemaking specialists are on board? How many professional positions are authorized?

ANSWER: There are 12 senior transportation specialists in the Office of Motor Carrier Standards who help prepare rulemaking and provide technical oversight for research contracts. There are 13 senior transportation specialists positions authorized.

SENATOR LAUTENBERG: In view of the enormous regulatory backlog facing your Standards Division, can you offer any reasons why the Committee should allow the reassignment of personnel shifted last year to the Standards Division from Enforcement to deal with this backlog?

ANSWER: We do not have any plans to shift personnel from the Standards Division.

SENATOR LAUTENBERG: How many professional personnel now work in your OMC Standards Division? How many professional positions are authorized?

ANSWER: There are 27 professional staff in the Office of Motor Carrier Standards has 28 positions authorized.

TIMELY REPAIR OF OUT-OF-SERVICE DEFECTS

SENATOR LAUTENBERG: What improvements have FHWA and the States made to provide better assurances that serious safety defects found during MCSAP inspections are actually corrected?

ANSWER: The FHWA requires all States to ensure that the correction of serious defects is an integral provision in their State Enforcement Plan.

Although States have flexibility in developing their verification programs, all States must, as a condition for basic grant approval, develop a program to ensure the comprehensive enforcement and reinspection of vehicles and drivers placed out-of-service and the correction of all violations cited on the roadside inspection reports.

SENATOR LAUTENBERG: For each of the States receiving MCSAP funds during FY 1993 please provide information contained in SAFETYNET that shows for FY 1993 to date the:

- number of vehicles or drivers observed during any covert verification operations,
- number of vehicles or drivers rechecked for out-of-service violations as part of any covert operations,
- number of drivers or vehicles found as a result of any covert operation to be in violation of an out-of-service order,
- type of initial inspection site (fixed or temporary) covertly observed,
- verification methodology (unmarked or marked vehicle)
- other major findings relevant to this concern.

ANSWER: Most States did not begin covert activity in the first part of FY 1993 because they were in the process of developing their covert program based on a mandate in the MCSAP final rule. We are unable to report any national data or trends related to covert activities at this time.

States are conducting a variety of covert activities to verify compliance with out-of-service orders. These include:

- strategically locating an unmarked car to monitor vehicles/drivers that have been placed out of service;
- reinspecting vehicles/drivers that have left the inspection site to verify that repairs have been made; and

- using unmarked vehicles to patrol inspection sites after closing.

States will submit preliminary results of their covert activities in their quarterly MCSAP reports due April 30, 1993. Based on the FY 1993 State Enforcement Plans, the States will spend over \$577,000 for covert activities.

SENATOR LAUTENBERG: What is the relationship between how much a State spends on covert verification activities and the extent of the verification problem in the State? How do you encourage States to spend more on covert operations if they discover they have a larger problem than originally envisioned.

ANSWER: As part of their verification program, States are required to include covert operations to determine the extent of compliance with out-of-service orders. There are no specific limitations on the amount of funds that States can devote to these activities. States may designate funds to: (1) increase their covert activities, (2) more accurately assess the problem that exists in the States, or (3) encourage compliance with the out-of-service orders if they find that covert activities are an effective deterrent.

SENATOR LAUTENBERG: How many cases against carriers or drivers were brought by the FHWA during the last two years for violations of out-of-service citations, for moving out-of-service vehicles, or for health and safety violations for operating a vehicle declared to be out-of-service? Please provide specific information on each case with relevant citations, the number of the claims, initial penalty assessments and final collection amounts. Please provide information on any mitigating circumstances for each of the cases which led to reduced civil penalties. Also, please include all relevant information about violations of 49 CFR 396(b) during the last two years. Does FHWA routinely base such cases on information collected by State enforcement personnel.

ANSWER: Five cases were brought against carriers or drivers for violations of out-of-service orders pertaining to hours of service requirements. The fines amounted to \$4,300.

Three cases were brought against carriers for moving vehicles placed out-of-service. The fines amounted to \$3,750.

Three cases were brought against drivers for violating an out-of-service order related to health and safety violations (intoxicating beverages). The fines amounted to \$600. We do not routinely initiate enforcement actions on violations of out-of-service citations based on information collected by State enforcement personnel.

SENATOR LAUTENBERG: How many state reinspection programs used the "hide-a-cop" method (observations by out-of-view inspectors) in determining both vehicle and drivers' violations of out-of-service orders? What other methods were used and in how many states?

ANSWER: We do not know how many States use the "hide-a-cop" method. All States are required to perform some level of covert activities as part of their efforts to determine the level of compliance with out-of-service orders. Beyond this requirement, States are encouraged to be innovative and use other efficient and cost effective verification methods.

Several methods that States are using in reinspection programs are: (1) terminal follow-up inspections and audits of maintenance and repair files; (2) reinspection/verification during safety and compliance reviews; (3) requiring drivers to present vehicles for reinspection; and (4) certification by carriers or persons who repaired the vehicle.

Covert enforcement efforts are resource intensive. We are looking for alternative cost effective methods which can be widely and routinely applied for enforcing out-of-service orders.

SENATOR LAUTENBERG: What has FHWA done to ensure that the 1993 reinspection programs by States are effective--not just expedient steps to compile numbers, such as reinspection of trucks with brakes out of adjustment at the inspection site? Is FHWA encouraging States to use a mix of alternate methods to discourage violation of out-of-service orders.

ANSWER: The FHWA recently produced guidelines for States to develop improved reinspection programs and to use SAFETYNET information and other sources for determining which activities are most effective. We are working with the Commercial Vehicle Safety Alliance to develop a comprehensive approach to ensure a motor carrier's compliance with out-of-service orders. We encourage States to develop new and innovative activities to ensure compliance with out-of-service orders.

TIMELY REPAIR OF OUT-OF-SERVICE DEFECTS

SENATOR LAUTENBERG: Within one year of its enactment, ISTEA required the Secretary to issue final regulations that would suspend someone's commercial driver license for a minimum of three months if they violated an out-of-service order. Not only have these final regulations not been issued but the notice of proposed regulations were issued about eleven months after the deadline specified in ISTEA. When will you issue the final regulations?

ANSWER: We expect to issue the final regulations this Summer. The docket closed on March 16, 1993. The comments from various States agencies and associations, truck associations, agricultural groups, and other trade associations are currently under review.

SENATOR LAUTENBERG: I am most pleased that OMC responded positively to the Committee's directive to ensure that each of the States receiving MCSAP funds conducts at least some covert operations. Please summarize how you will continue to monitor State activities in this area.

ANSWER: States are required to include covert activities in their State Enforcement Plans as a condition of the basic MCSAP grant approval. We have requested States to report covert activities on their quarterly reports so we may monitor their progress and better determine the extent of national compliance with out-of-service orders.

LONG-TERM STRATEGY FOR OMC

SENATOR LAUTENBERG: We understand that OMC has been conducting some long-term strategic thinking on its future direction. What is the scope and nature of your future plans? Please discuss in detail OMC's goals and objectives as delineated in the FHWA 2000 planning process. What accomplishments resulted to date and how were these measured? Which goals remain unmet and how will they be addressed?

ANSWER: The FHWA's motor carrier program is focusing its resources on several broad areas.

The FHWA and States will implement the uniformity provisions of ISTEA to ensure full participation of all States in the International Registration Plan and the International Fuel Tax Agreement by September 1996. This will improve the productivity of the truck and bus industries.

The FHWA will develop and implement more efficient, effective regulations through a full partnership with States, industry and safety interests in the zero base review of the Federal motor carrier safety regulations.

The FHWA will strive to reduce the fatality and accident rates for commercial motor vehicles.

The FHWA will continue to work with the States, industry and safety interests to increase efforts to prevent illegal drug and alcohol use by drivers, improve the effectiveness of driver training programs, develop new and innovative ways to better market safety practices by the motor carrier industry and the general public, and target unsafe carriers for stepped-up enforcement.

The FHWA will address the transportation system condition and performance through the States' use of MCSAP funds to increase weight enforcement.

Under the FHWA 2000 initiative, Vision, Mission, and Value statements were developed along with the establishment of eleven goals. We have successfully met the major milestones toward achieving these goals.

DATA FOR MONITORING TRUCK SAFETY

SENATOR LAUTENBERG: Please specify in detail the expenditure of funds set aside for the Truck and Bus Accident Data Grant Program. Aren't most of the States already submitting accident data to FHWA pursuant to a requirement of MCSAP?

ANSWER: The FHWA and States cooperatively assessed how to best use \$1 million available in FY 1993 for truck and bus accident data collection. The majority of the funds were allocated equally to each State. States are using the funds to design appropriate forms, develop instruction manuals, train State and local officers, analyze and evaluate safety data, and other related activities essential to achieving full implementation. The remaining amount will be used to prepare an annual report on program implementation and accident data forwarded through SAFETYNET.

Collection and reporting of accident data consistent with the NGA elements and definitions are part of full State participation in SAFETYNET as a condition for basic MCSAP grant approval. Currently, 22 States are submitting accident data into SAFETYNET. As mandated by the ISTEA, all States must be transmitting accident data into SAFETYNET by January 1994.

SENATOR LAUTENBERG: How much of this grant money went to the States directly? For what other purposes is the grant money used? Couldn't OMC staff prepare any national reports derived from accident data generated by the States?

ANSWER: In fiscal year 1993, \$900,000 of the \$1 million that was appropriated went directly to the States. The remaining \$100,000 is being used to prepare an annual report on program implementation and accident data transmitted through SAFETYNET.

State adoption of the NGA accident data elements and the reporting of the data collected to FHWA through SAFETYNET will result in the first national uniform truck and bus accident database.

GOALS AND ACCOMPLISHMENTS OF THE OFFICE OF HIGHWAY SAFETY

FHWA has set a goal to "encourage the development and implementation of programs in each State that have high potential to reduce the national fatality rate by an average of 7 percent annually through FY 1996."

SENATOR LAUTENBERG: Please specify exactly how this goal was translated into concrete actions regarding the Section 402 program and the Office of Highway Safety.

ANSWER: The FHWA administers the "Roadway Safety" portion of the Section 402 program, which is based on sound analyses of roadway-related crash information. The FHWA applies engineering principles in identifying highway design or operational improvements that will address the crash problem.

Since the roadway is but one part of the total safety equation, FHWA has begun several initiatives which are designed to reap the biggest safety benefit. The FHWA applies a comprehensive, multidisciplinary approach when addressing the crash problem by integrating the roadway countermeasures with driver behavior and vehicle dynamics.

The FHWA also has linked its Corridor Safety Improvement Program (CSIP) with NHTSA's Community Traffic Safety Program (CTSP). This merger results in maximizing human and funding resources when analyzing, developing, and implementing effective safety countermeasures. The agencies have presented the CSIP concept in 22 States and 14 States have adopted the program.

To date, FHWA has held a "train the trainer" workshop on this venture with NHTSA staff in attendance; participated at a national CTSP conference; and provided guidance to field offices on eligibility of 402 funds for CSIP/CTSP projects. As a result of these efforts, two more States have expressed an interest in learning more about the CSIP concept.

SENATOR LAUTENBERG: What are the major accomplishments of the 402 funds allocated by FHWA?

ANSWER: FHWA's Section 402 funds have been used for improved traffic data systems, analyses of high crash locations, Corridor Safety Improvement Programs (CSIP), evaluation of the effectiveness of other Federal-aid funded roadway safety improvements (Highway Safety Improvement Program), work zone safety programs, programs designed to increase awareness of pedestrian and bicycle safety, and public information and education activities related to roadway safety issues.

OPERATION LIFESAVER

SENATOR LAUTENBERG: What is the FHWA doing to work with and improve the activities of Operation Lifesaver? Do you audit the use of the FHWA funds provided to this agency? If so, what were the results of this review?

ANSWER: An FHWA representative serves on Operation Lifesaver's (OL) Program Development Council (PDC). The PDC serves as an advisory council to OL's Board of Directors. Through this activity, the FHWA is able to offer timely technical assistance and guidance on a variety of OL activities.

Operation Lifesaver provides FHWA an annual work plan and quarterly progress reports which document its activities throughout

the year. Through these documents and our involvement with the PDC, the FHWA is satisfied that the funds provided by FHWA are utilized effectively. We believe this organization is run in a highly professional manner and are pleased to be able to contribute to this public information and education program to reduce grade crossing crashes.

Operation Lifesaver contracts annually to have an independent audit of its financial records. In addition, the FHWA arranged for a government auditing agency to examine OL's records in 1991. These audits found OL accounting procedures to be generally sound and acceptable. Recently, the FHWA requested the government auditing agency to conduct a followup audit of OL's activities.

SENATOR LAUTENBERG: How are your grade crossing activities coordinated with those of FRA?

ANSWER: There are numerous activities in which FHWA and FRA are working jointly to reduce train/motor vehicle crashes:

The FHWA and FRA, along with the Federal Transit Administration, are jointly sponsoring a \$125,000 evaluation of the Los Angeles Metro Blue Line Grade crossing Safety Improvement Program. This jointly funded effort is intended to test and evaluate technologies that support the enforcement of traffic laws and decrease the frequency of traffic violations at grade crossings on this rapid transit line.

The FHWA and FRA have been working continually to implement a number of highway-rail crossing safety initiatives including: implementing grade crossing safety improvements in high speed rail corridors; eliminating unnecessary highway-rail crossings; and implementing engineering improvements--especially the installation/upgrading of active warning devices and other warning and regulatory signs at crossings.

The FHWA and FRA each have a representative on Operation Lifesaver's Program Development Council. This group holds three meetings each year and FHWA and FRA work together in this forum promoting activities which enhance highway-rail crossing safety.

SAFETY MANAGEMENT SYSTEMS

SENATOR LAUTENBERG: Will the safety management systems that will be required by FHWA apply to the entire highway system or just the Surface Transportation Program (STP) or the National Highway System (NHS)? How will you use these safety management systems plans in an evaluative manner to look at the total systems as a means of technology transfer so States will be able to benefit from successes in other States?

ANSWER: The safety management system will apply to all public roads. The Notice of Proposed Rulemaking for the safety management system published on March 3, 1993, requires States to develop procedures or plans to ensure that safety is considered, implemented and evaluated in all phases of planning, design, construction, maintenance, and operations of the total highway system. The FHWA will be evaluating each State's system from an

end result perspective, i.e., how effective is it in reducing crashes, injuries, and fatalities, while achieving maximum utilization of resources. The FHWA has initiated a program plan to conduct case studies of effective safety management strategies implemented by the States.

SENATOR LAUTENBERG: Will FHWA publish a document showing examples of exemplary safety management systems or strategies used by different States?

ANSWER: The FHWA plans to utilize the information from the case studies of effective safety management systems and strategies in its technology sharing activities. These case studies and unique system components will be provided to the States through publications, technical advisories, and technical demonstrations.

MAINTENANCE SHORTCOMINGS

The Strategic Highway Research Program initiated a major project to identify all of the materials that had been used for pavement maintenance. Another goal was to identify how these materials had performed, and which showed promise and which did not. The project report, Innovative Materials and Equipment, Vol. 2, stated that widespread use of deficient and unsuitable materials, equipment, and procedures has caused poor performance of pavement surface repairs. As a result, there has been an acceleration in pavement deterioration with a related increase in maintenance costs.

SENATOR LAUTENBERG: How will the SHRP effort lead to improvements in maintenance material, equipment and procedures?

ANSWER: As the U.S. highway system ages and traffic volumes and weights continue to increase, roadway maintenance expenditures have become the fastest growing portion of highway budgets. SHRP researchers thus investigated the performance of maintenance materials, methods, and equipment to develop much-needed criteria for their cost-effective use.

A variety of preventive maintenance treatments are in use to preserve pavements throughout the U.S. To evaluate the application and effectiveness of several preventative maintenance techniques, forty States cooperated in the construction of experimental test sections. The construction and pavement performance information obtained from these test sections will be used to develop a rating procedure for chip seals, slurry seals, and crack seals. The rating procedure is intended to provide a practical and systematic way to assess the quality of the application of pavement maintenance treatments.

Another SHRP research project focused on the development of an automated crack sealing device. The device will reduce traffic disruption and improve operator safety, while effectively and efficiently sealing longitudinal cracks (such as joints between the pavement and the shoulder). A prototype automated crack sealing unit has been constructed by the California Department of Transportation (CADOT). The prototype unit has the capability to prepare, clean, and seal longitudinal cracks and joints. CADOT will conduct field trials and equipment evaluations in 1993.

FHWA has initiated cooperative agreements with a number of States to conduct field tests to evaluate SHRP-developed materials and procedures for pavement repair under different climatic and installation conditions. The tests include

materials for spall repair, joint resealing, and crack sealing of concrete pavements, as well as pothole repair and crack sealing of asphalt pavements. Twenty-two test sites have been built. Patch performance will be gauged by when and how the patches fail. The performance of the test sites will be monitored by FHWA's, Long-Term Pavement Performance Division, Office of Engineering and Highway Operations Research and Development.

SENATOR LAUTENBERG: When will SHRP maintenance improvements be realized?

ANSWER: An interim guide for the use of materials and procedures for cost-effective pavement repair, based on the field test data, will be published by SHRP later in calendar year 1993. The guide is designed to help engineers select cost-effective pavement repair materials.

The FHWA has begun the process of implementing the SHRP maintenance products. Activities completed include the display of the prototype crack filling vehicle, pothole patching machine, and pavement condition evaluation unit at major conferences and meetings, development of a national implementation plan and the formation of partnerships with the States, American Association of State Highway and Transportation Officials, Transportation Research Board, industry and academia to carry out the implementation. Putting the SHRP products in the hands of manufacturers and users will begin in 1994.

Benefits from participation in the SHRP preventative maintenance studies are already being realized by a number of western States. In 1991, and again in 1992, a group of western highway engineers reviewed the SHRP maintenance test pavements. Early performance results are being used by those highway agencies to make more cost-effective pavement maintenance decisions.

SENATOR LAUTENBERG: What is FHWA doing to ensure quality in the highway maintenance area?"

ANSWER: The approach chosen for a response to this part of his is to describe the context into which FHWA is delivering the SHRP products and other innovative technology on materials, equipment and procedures. In doing so, definitions for selected words occurring around maintenance activities are mentioned with occasional references to enabling legislation.

Maintenance, as defined in Section 101 of Title 23, U.S. Code, is "...the preservation of the entire highway, including surface, shoulders, roadsides, structures, and such traffic control devices as are necessary for its safe and efficient utilization."

Although not codified, the term maintenance has been further subdivided informally into routine maintenance and preventive maintenance. Routine maintenance includes work such as mowing, snow and ice control, limited pavement patching, limited joint resealing, etc. Preventive maintenance includes work which is more extensive in nature and which is done on a recurring basis to replace, renew, or repair elements of the highway that are at or near the end of their service life. Some examples of preventive maintenance could include roadway activities such as joint repair, pavement sealing, pavement patching, shoulder repair, and restoration of drainage systems, and bridge activities such as crack sealing, joint repair, seismic retrofit, scour countermeasures, and painting.

FHWA has been involved in maintenance-type programs from a technical and staffing sense for many years and more directly since the 1976 Highway Act which recognized 3R activities (Resurfacing, Restoration and Rehabilitation) as eligible Federal-aid programs. The 1976 Act was revised by the 1981 Highway Act which added a fourth "R" (Reconstruction) as an eligible Federal-aid program. Subsequent to the 1981 Highway Act, the FHWA could, within limits, provide funding under the 4R program for such items as joint resealing and bridge repainting if the FHWA could logically determine that such work was reconstruction or rehabilitation of a failed highway element which had served its useful design life. A key element, however, was that the work was not considered to be maintenance.

The 1991 ISTEA, under Section 1009(e), recognized preventive maintenance of the Interstate system as an eligible activity. This section renamed Section 119 of 23 U.S.C. from "Interstate System Resurfacing" to "Interstate Maintenance Program." Necessary 3R work continued to be eligible under the renamed section but construction of new travel lanes, other than high occupancy vehicle lanes or auxiliary lanes are no longer eligible activities. The revised section allows preventive maintenance activities which can be identified as being cost effective by the State's pavement management system.

Much effort has gone into implementing the preventive maintenance provisions of the ISTEA. Appropriate guidance has been issued in a way that supports and encourages use of innovative materials and equipment and integration with necessary safety and geometric enhancements that are still an integral part of 3R/4R projects.

FHWA's maintenance related programs, in addition to those promoting greater utilization of preventive maintenance techniques, also include the maintenance oversight process. This process has changed with the evolution in FHWA stewardship programs but still accomplishes the basic responsibility for assuring that the State is carrying out its obligations under 23 USC 116.

FHWA maintenance oversight includes conducting a balanced program of inspections or reviews of maintenance activities to assure that each State adequately maintains or causes to be maintained, the completed Federal-aid construction projects. Further the process also includes provisions to insure that each State highway agency has a bridge inspection program conforming to the National Bridge Inspection program. From a technology perspective, over the years these have, and continue to, provide opportunities to disseminate information about innovative approaches to the maintenance function. Practices observed in other states, from State Planning and Research activities, the National Cooperative Highway Research Program and others that contribute toward a quality maintenance product and otherwise create an environment for innovation are selected and passed on.

SECTION 6005 PROGRAM

SENATOR LAUTENBERG: For each of the specified research topics that are listed in section 6005 of ISTEA, please summarize the research projects that have been undertaken and any progress made to date. For each topic, please discuss whether additional funds are technically necessary or whether the funds allocated in FY 1992 and FY 1993 are sufficient in terms of advancing the current state of technology or addressing current research challenges.

ANSWER: Five specific technologies are designated in ISTEA Section 6005(e)(4-8). The designated technologies include Heated Bridge Technologies (HBT), Elastomer Modified Asphalt (EMA), High Performance Blended Hydraulic Cement (HPC), Thin Bonded Overlays and Surface Lamination of Pavement (TRO), and All Weather Pavement Markings (AWM). Annual funding was specified for HBT, \$4.0 million; TBO, \$2.5 million; and AWM, \$2.0 million. Funding for the other two was not specified, but a single EMA project was specified in New Jersey and a single HPC project was specified in Missouri.

For each of the designated technologies, a Technical Working Group (TWG) has been established. The FHWA program office is the lead office and the TWG membership includes representation from the Office of Research and Development (R&D) and the Office of Technology Applications (OTA). When appropriate, they are supplemented with outside expertise from the States, Academia and the private sector. The TWG's were charged with the development of national evaluation plans for each technology, including project selection criteria, for the solicitation of interest from State transportation agencies (including the designated States), and for signing of formal agreements for the installation (construction) of the technologies and the conduct of the performance evaluations. All TWG's have been established and are proceeding in the 5 designated technology areas. Suppliers, manufacturers and additional information on the technologies have been identified, and solicitations for field projects are well underway.

Heated Bridge Technologies (HBT)

An implementation plan has been developed by the TWG. A panel of technical experts has been formed to assist the TWG. On November 19, 1992, a memorandum was issued to the Regions asking for candidate projects for FY 93. Included in the submittal was a description of each of the systems approved by the TWG.

As of May 1, 1993, five projects in three States have been approved for funding. Several more are anticipated in fiscal year 1993. The approved projects include:

Nebraska	\$234,000	Project approved on February 11, 1993
Minnesota	\$549,400	2 projects approved on March 1, 1993
Texas	\$636,960	2 projects approved on March 1, 1993
Total	\$1,420,360	

It has been somewhat difficult to initially interest States in this technology, however, as projects get built, the interest is expected to increase and several States are now considering projects for next year's construction. It is uncertain if we can solicit sufficient State interest to install heating equipment on a minimum of 10 bridges per fiscal year. However, we feel it is important to continue the development of the technology and to continue its usage. The minimum number should be eliminated. While it is still too early to tell on the exact funding needs, the funding level per fiscal year should continue, and the need will be revisited on an annual basis. A heated bridge deck conference is being planned, which should help to promote interest and identify more projects in this technology area.

Elastomer Modified Asphalt (EMA)

A memorandum was sent out on August 5, 1992 to determine if New Jersey is interested in participating. The State has expressed an interest in the project and is in the process of preparing a proposal. A total of \$4 million was set aside and remains available for this project. No additional funds are necessary.

High Performance Blended Hydraulic Cement (HPC)

A memorandum was sent out on July 31, 1992 to determine if Missouri is interested in participating. The State originally indicated that, although they originally did not intend to develop any further projects to experiment with the material, they have reconsidered that decision. The State has requested a meeting to discuss the project. A total of \$4 million was set aside and remains available for this project. No additional funds are necessary.

Thin Bonded Overlay and Surface Lamination of Pavement (TBO)

The TWG has been formed and a memorandum to the field requesting interest in constructing thin bonded overlays or surface lamination pavements or bridge decks was sent out on February 23, 1993. Nineteen responses were received. The TWG is in the process of prioritizing these proposals and selecting locations.

A total of \$5 million has been set aside and remains available for this project. Based on the response to the initial solicitation, all of these funds will be utilized. There was a high level of interest expressed by the States. Because this technology involves both pavement and bridge overlays, additional projects are necessary for a complete evaluation, and funding will continue to be needed. While it is still too early to tell on the exact funding needs, the funding level per fiscal year should continue, and the need will be revisited on an annual basis.

All Weather Pavement Markings (AWM)

An overall plan was prepared and a proposal has been developed for hiring a contractor to work with the States on experimental design, data collection and analysis for All Weather Pavement Markings. The contract is expected to be awarded this fiscal year.

The memorandum requesting participation by the States went out on November 20, 1992. Sixteen responses have been received and the TWG is in the process of prioritizing projects and selecting locations. A total of \$4 million has been set aside and remains available for this project. Based on the initial solicitation, all funds allocated will be fully utilized. The initial responses, if all funded, total more than the \$12 million authorized for this technology. The program laid out is a national experiment and involves multiple field locations. Continued funding at the level indicated in ISTEPA is needed to complete the experiment.

SENATOR LAUTENBERG: Are any of the Section 6005 funds used for projects conducted primarily abroad? What is the status of the project that is being conducted with the cooperation of the Government of Saudi Arabia? How many years does FHWA plan to fund this project? What is the benefit of this project to the United States.

ANSWER: The FHWA and its Office of International Programs have not applied any Section 6005 funds for any projects conducted/undertaken primarily abroad. However, funds

have been used for our efforts in the scanning of international technologies to identify innovative foreign technologies. The project referenced in the question is for a proposal for a joint U.S.-Saudi Arabian demonstration project. This proposal is being discussed and has not been approved by either party.

The proposal is for a jointly funded demonstration of a fully automated highspeed truck weight, height, and registration enforcement station at a site between Jedah and Meccah in Saudi Arabia. The government of Saudi Arabia would fund all the installation/ construction costs. The Section 6005 funds would be applied for the testing, evaluation, and implementation of these advanced technologies over a 2-year period.

The benefit to the U.S. in undertaking such an effort would be: 1) an IVHS design for enforcement automation beyond anything proposed in the U.S. to date. 2) an application test beyond what has been done in the U.S. thus accelerating the testing of U.S. technology. Participation in this project would give U.S. firms the opportunity for a leading international role in the evolving IVHS market and create a working example of advanced U.S. technology applications with a large international market potential.

CONGESTION MANAGEMENT

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) gives states and local officials increased funding and flexibility to choose the best mix of transportation projects to meet local needs to reduce congestion and improve air quality.

SENATOR LAUTENBERG: What is the Department doing to encourage States and localities to include transportation management and control projects in their plans as opposed to relying on building new roads to meet traffic needs?"

SENATOR LAUTENBERG: Has the Department developed and made available to the States and localities any criteria to aid them in choosing the transportation control measures(s) that would be most beneficial, most cost-effective, etc., for their particular situation?

ANSWERS: The Department, through the Federal Highway Administration (FHWA), working in concert with the Federal Transit Administration (FTA) and the Environmental Protection Agency (EPA), uses a variety of ways to assist states and localities with the implementation of transportation management and control projects - commonly referred to as congestion management programs. Some of the most effective forms of assistance are:

(1) The FHWA is providing extensive technical assistance and training to state and local agencies on the most cost-effective congestion management techniques to meet the requirements of the ISTEA and the CAAA. For example, the FHWA provides training in Freeway Traffic Management, Travel Demand Management, High Occupancy Vehicle Lane Design and Operation, Incident Management, Transportation Planning and Air Quality Analysis, and Access Management. Other

related courses are either being taught or are being developed for the near future.

(2) Through technology transfer efforts, the FHWA actively promotes awareness of the effectiveness of congestion management to all areas, including large and small metropolitan areas as well as rural jurisdictions. Demonstration projects are being developed to acquaint States and local areas with the application of new procedures and technology, providing practitioners with hands-on experience using selected hardware, software, techniques, etc. Currently, two of the most successful demonstration projects are

(1) Demonstration Project No. 86 on Incident Management, and (2) Demonstration Project No. 93 on Traffic Control Hardware and Software.

(3) The FHWA and the FTA are jointly developing transportation demand management technical assistance and guidance materials. The materials include guidance documents to assist both the public and private sectors in implementing cost-effective programs and a microcomputer model to analyze the traffic impacts of potential programs to develop the most effective package of actions. The materials also will include a reference document which presents the experience of available programs and a video to explain the concepts of transportation demand management to upper management in the public and private sectors.

SENATOR LAUTENBERG: Does the Department have any performance measures for determining what is being achieved for the money spent on the various transportation control measures, or the benefit of using traffic control measures versus building new lanes to overcome a congestion problem?

ANSWER: Evaluations of the effectiveness of transportation control measures (TCM) are usually performed using a standard of tons reduced of a given pollutant. Such criteria are used for evaluations of ozone (O_3), carbon monoxide (CO), and particulate matter (PM_{10}), the most common regulated transportation-related pollutants.

Under the Congestion Management and Air Quality Program (CMAQ), the FHWA is requiring such an analysis as one of the performance criteria for selection of TCM projects. Our objective is to identify TCM projects with maximum emission reduction potential. A larger scale effort is underway by States and local agencies to identify viable TCM's as part of the State Implementation Plan (SIP) planning process. The FHWA and the EPA are providing support in this SIP planning process. Results will be disseminated when the SIP revisions are submitted in November of 1993 and 1994.

The Department worked closely with the Environmental Protection Agency (EPA) in the preparation of the **Transportation Control Measure Information Documents**, issued in May 1992. These documents survey the extensive literature on such measures, and provide implementation effectiveness. This and other such documents are made

available to States and localities to assist them in identifying the effectiveness of TCM verses building more roadway capacity.

SENATOR LAUTENBERG: What types of transportation control measures are being carried out under the various ISTEA programs and to what extent? Please provide funding by program category.

ANSWER: A number of transportation control measures are funded under the ISTEA's flexible-funding provisions. The types of projects funded include high-occupancy vehicle facilities, park-and-ride and fringe parking facilities, area-wide rideshare incentives, bicycle and pedestrian programs, and programs for activity centers and special events. The largest portion of funding for these projects comes from the Congestion Mitigation and Air Quality Improvement Program (CMAQ). A total of \$568.1 million in CMAQ funds have been obligated to date.

SENATOR LAUTENBERG: How many urban areas have computerized traffic signals? What is the condition of the traffic signal systems in urban areas? What amounts of ISTEA funds (NHS, STP, and CMAQ) are being used to improve traffic signal systems? What staff resources is the Department investing at headquarters, regional, and divisional levels in improving traffic signal systems in major urban areas? Is this sufficient?

ANSWER: With few exceptions, most urbanized areas (50,000 population and above) have some form of a signal system that is centrally controlled. In urbanized areas, notable exceptions include: Chicago, Il. - Considering a signal system; Pittsburgh and Philadelphia, Pa. - System construction contract will be let shortly; Atlanta, Ga. - Specifications for a system are currently being prepared; San Francisco, Ca. and Denver, Co. - There are no plans at this time.

A majority of the current systems in operation are over 15 years old. Therefore, the hardware is obsolete and in need of replacement. With the advent of advanced computer technology, most of the existing mini computer-based systems can be upgraded to super micro or micro computer-based systems.

A recent survey through our field offices indicated that there are several examples where ISTEA funds are being used or planned for arterial or freeway control systems. Regarding funding for freeway traffic management centers, for example, the following information was compiled:

Upgrade of Existing Traffic Management Centers:

- * INFORM, Long Island, NY - STP Funding
- * Chicago, IL - CMAQ Funding
- * Detroit, MI - CMAQ Funding
- * Minneapolis/St. Paul - CMAQ Funding

New Traffic Management Centers (Planning and/or Construction)

- * Milwaukee, WI - CMAQ Funding

- * Cincinnati, OH - CMAQ Funding
- * Houston, TX - CMAQ or NHS Funding
- * Phoenix, AZ - Two-Year Operational Provision
Future Traffic Management Centers
- * Toledo, OH - CMAQ Funding & STP Funding
- * San Antonio, TX - CMAQ or NHS Funding
- * El Paso, TX - Category Presently Undecided

FHWA continues to emphasize the value of computerized signal systems through technical assistance, training courses, conferences and symposia.

A mobile exhibit to emphasize the benefits of computerized signal systems is now touring the United States. This project is envisioned to last at least three more years. Additional efforts in this area emanate at all levels of FHWA. In order to provide additional emphasis in mobility and other IVHS-related activities, and to improve multi-regional coverage, an Urban Mobility Specialist GM-14 position has been staffed in four FHWA regions: Region 1, Albany; Region 3, Baltimore; Region 5, Homewood, IL; Region 9, San Francisco. Current staffing levels in FHWA devoted to oversight of traffic control systems are inadequate considering the challenges and opportunities which have been identified by our operational reviews and contained in implementing provisions of ISTEA.

SENATOR LAUTENBERG: How important are state-of-the-art computerized traffic signal systems to the future success of the Intelligent Vehicle/Highway System?

ANSWER: The "foundation" of a typical Intelligent Vehicle Highway System consists of a computerized signal and freeway control system. These systems collect data, manage traffic control devices and disseminate information to other IVHS user services. Consequently, for IVHS to have maximum positive effect, these systems must operate optimally. Therefore, the key elements to the success of IVHS are well maintained and operated traffic control systems.

SENATOR LAUTENBERG: Are any of the earmarked projects not moving forward expeditiously in terms of the actual obligation and expenditure of funds? Please list for each of these projects the amount of unobligated funds that appear to be "stored" for future implementation activities.

ANSWER: We anticipate that six areas will have unobligated earmark balances at the end of FY 1993. These areas and the status of their IVHS program or plans are:

(1) I-95 Corridor Coalition - This is a partnership of the major public and private transportation agencies which serve the Northeast Corridor of the United States. The mission of the Coalition is to improve mobility and transportation efficiency in the Northeast Corridor through the

application of real time IVHS technology. The Coalition is developing a Business Plan and we anticipate funding three or four initiatives before the end of the fiscal year. Others should be ready for funding during the first quarter of FY 1994.

(2) Miami-Ft. Lauderdale - FY 1992 earmarked funds are being used to identify IVHS multi-modal opportunities in the I-95 corridor from Broward County to Dade County, Florida. We anticipate that the FY 1993 earmarked funds of \$2.24 million will be requested in early FY 1994 to implement one or more of the study recommendations.

(3) Guidestar - The Minnesota DOT and their partners continue to be active in testing of IVHS technologies. They are presently working on those initiatives that were funded with FY 1992 earmarked funds.

(4) Sutter County, CA - These funds are intended to support "high tech" features in a new community, "Sutter Bay," northwest of Sacramento. We have not received any indication of the scope of the IVHS activities to be included. We may also have legal problems in carrying out this earmark.

(5) New Jersey Police Communications Center - These funds are intended to support a law enforcement communications/patrol center in New Jersey. We have not received any details on the planned patrol center. Legal problems may also surface in carrying out this earmark.

(6) Southern State Parkway - In addition to the FY 1993 earmark, the Southern State Parkway has not submitted a program for use of the FY 1992 earmark (\$20 million) either. Total unused earmarked funds is \$34 million.

SENATOR LAUTENBERG: Do you have any recommendations for improving the utilization of funds currently being reserved for these IVHS projects? Is the Department considering any legislative initiatives to address this issue?

ANSWER: FHWA believes that the funds provided should be put into use to advance the IVHS program in the most efficient and effective manner. Our primary concern regarding earmarked projects is that in many cases the funded activities do not contribute to advancing the development of new IVHS technologies or institution arrangements. While they may be very deserving transportation projects which deploy IVHS-related technologies, regular state-apportioned Federal-aid funds are available for this purpose. Reserving IVHS funds for these types of projects detracts from our ability to achieve in a timely manner the IVHS vision which Congress has established. Funds being reserved in this manner should be released for use by other IVHS projects and activities which are ready to proceed. We do not have any specific legislative proposals regarding this issue at this time.

THE GROWTH AND COST OF CONGESTION

SENATOR LAUTENBERG: The percentage of congested peak-hour travel on urban interstates increased from about 55 percent to more than 70 percent from 1983 to 1991, and this growth in congestion gives rise to substantial costs. A July 1992 report by the Texas Transportation Institute estimates that in 1989, the total cost of congestion for the 50 urban areas studied was \$39 billion. Delay accounted for about 85 percent of this amount, while excess fuel consumption accounted for 15 percent. Eight of the top ten urban areas had total congestion costs exceeding \$1 billion.)

To what extent is the Intelligent Highway Vehicle System (IVHS) research effort expected to alleviate the growth in congestion?

ANSWER: "Business as usual" projections of travel on freeways indicate that without substantial improvements, by the year 2005, trips could take from 2 to 4 times as long as they do now due to regularly occurring (recurring) congestion. IVHS research is addressing ways that will enhance the flow of traffic thus reducing the extent of delays and the frequency of stops for through traffic. IVHS deployments will provide improved and integrated traffic control along corridors and throughout networks, especially when utilizing better traveller information services. Implementing the major products of IVHS research, will result in a significant reduction or, in some cases, the elimination of recurring congestion. About 60% of traffic delays are the result of what is now classified as non-recurring incidents. By reducing the duration of incidents, the resultant non-recurring congestion will be mitigated. IVHS research is placing emphasis on developing techniques and strategies for improving the detection and response time for incidents. Also, research is proposed to investigate the potential of better predicting incidents by determining if there are patterns in the time or location of incident occurrences that will yield predictive relationships. This information will permit State and local transportation agencies to manage traffic and respond to incidents more efficiently. Also, as more reliable and direct communication technologies become available through the research, the capabilities to divert traffic and reroute travellers around incidents will be greatly enhanced over what they are today.

Our best estimates of annual congestion costs savings (based on 1992 dollar values) are \$3.5 billion for the year 2001 and about \$14 billion for the year 2011. These estimates are based on the assumption that one-half of the Nation's 75 largest cities would have substantial deployment of IVHS services by 2001 and that all of these 75 cities would capture the benefits of development work and field testing related to advanced traffic management and traveler systems by the

year 2011. In this same time period, additional congestion savings are expected from the deployment of traveler information systems in rural areas and from the first stage of advanced vehicle control systems.

SENATOR LAUTENBERG: What major congestion payoffs are expected from IVHS research and when will they be realized?

ANSWER: Congestion relief from IVHS deployments will occur gradually. The earliest benefits will be achieved from substantial upgrading of coordinated traffic control systems in the 75 largest metropolitan areas of the country. Improved sensing and surveillance will allow implementation of adaptive features of systems being developed, both by us, and overseas. Over 30 of our cities are now planning for such upgrades. The first model system which incorporates many of the key features of a prototype Advanced Traffic Management System is the "Smart Corridor" in Los Angeles. It should be operative within a year. Within this corridor, it is anticipated that modest gains in reducing congestion will be achieved. More substantial gains are anticipated when broader implementations become reality in the region.

Other larger cities are expected to have implemented much of this technology within the first few years of the next decade. By then, advanced traveler information will be in place in many areas and this in combination with the coordinated control systems associated with advanced traffic management technology will greatly enhance traffic operations. The accumulated benefits of these deployments are expected to provide major congestion relief in more than half of our major cities by the year 2001. In these cities, we expect that by 2001 that a 20 percent reduction in travel delays can be realized.

SENATOR LAUTENBERG: What other promising research techniques offer promise for dealing with congestion?

ANSWER: Apart from the research and development efforts we are undertaking on IVHS, we believe that methods for substituting communication for transportation offers great promise for reducing congestion and maintaining mobility as well as enhancing safety, clean air and economic productivity. The tie-in of communications technologies (e.g., teleconferencing and telecommuting) to IVHS program goals is becoming more apparent as these programs move forward.

Congestion pricing strategies share much of the technology which supports some of the IVHS services. It provides an economic component which is not a part of the IVHS program. The potential of such pricing techniques are great if they are socially and politically acceptable. Experience in other parts of the world with implementing such programs is not very

reassuring. Hopefully the Congestion Pricing pilot programs being conducted in the U.S. will give us good information on their potential in this country.

SENATOR LAUTENBERG: What types of projects are being generated in response to the ISTEA authorizations that allows for up to five congestion pricing agreements?

ANSWER: Projects contained in the Congestion Pricing Pilot Program applications (section 1012(b) of the ISTEA) include proposals to conduct feasibility studies of congestion pricing options, to allow single-occupant vehicles to pay a price to use excess capacity on high-occupancy-vehicle (HOV) lanes, to reduce tolls for high occupancy vehicles, to provide parking pricing without a road pricing component, and to restrain demand on congested facilities by raising peak-period tolls. Many of the proposals received did not respond well to the Pilot Program selection criteria contained in the November 24 Federal Register Notice. As a result, the only proposal selected for further negotiation of an agreement that is expected to lead to the implementation of a congestion pricing pilot project was submitted jointly by the California Department of Transportation and the Metropolitan Transportation Commission (Oakland/San Francisco). The proposed project would raise peak-period tolls and make transit improvements on the Oakland-San Francisco Bay Bridge.

Since five acceptable proposals have not been submitted in response to the initial Notice, a new Federal Register Notice announcing that the solicitation will be held open for an additional 4 months will be submitted. This will provide an opportunity to work with applicants whose proposals to the first Notice were found deficient, and provide several other areas that have expressed interest the time to develop new proposals. The goal remains one of providing the Congress with an evaluation of congestion pricing within the life of the Intermodal Surface Transportation Efficiency Act of 1991.

INTELLIGENT VEHICLE/HIGHWAY SYSTEM (IVHS)

The National IVHS Program

The Department's IVHS Strategic Plan claims that you will provide the broadest Federal integration of different agency activities to support the National Program.

SENATOR LAUTENBERG: Were you successful in getting the Department of Justice to conduct legal studies necessary to examine some of the constraints facing IVHS? Have you been able to get the FCC to make available the spectrum space necessary for full scale

deployment? Have you been able to get DARPA funding to supplement your IVHS contract and GOE funds?

ANSWER: The Department of Justice has agreed to review the Nontechnical Constraints Report, particularly those sections related to IVHS legal issues. The Federal Communications Commission recognizes IVHS as a national initiative with high profile public benefit. The National Telecommunications and Information Administration, which is part of the Department of Commerce, has provided the Department of Transportation with a small initial allotment of dedicated spectrum for the IVHS operational testing program.

FHWA has been working with several defense technology agencies and laboratories to share information on our respective programs and to identify technology needs of mutual interest to IVHS and defense. Our discussions resulted in the identification of the vehicle technology area for IVHS which has been included in the "Program Information Package for Defense Technology Conversion, Reinvestment, and Transition Assistance" that was released by DOD's Advanced Research Projects Agency (ARPA) when the President announced the program on March 11, 1993. The DOD/ARPA category for vehicle technology, which includes electronics for both vehicles and intelligent vehicle infrastructure, is one of eleven areas identified by the Administration for the defense technology conversion program.

SENATOR LAUTENBERG: How is FHWA incorporating those IVHS projects that were earmarked for support in the 1993 Appropriations Act into the corridors program that was specified in the IVHS Act of 1991?

ANSWER: FY 1993 funding available for the IVHS program totaled \$217.8 million. This included \$86 million from the ISTEAs IVHS Corridors Program, \$27 million from ISTEAs Other Activities, \$30 million from GOE, and \$74.8 million in carryover funds from FY 1992. The carryover funds allowed us to absorb the \$113 million of Congressional earmarks by charging against all the accounts and still maintaining a balanced IVHS program. However, since all available unearmarked funds will be obligated this year, any FY 1994 earmarks will have a significant effect on all elements of the program, including the IVHS Corridors Program.

SENATOR LAUTENBERG: If the National IVHS Program receives additional funds, how do you propose to strengthen the Department's management of this major undertaking? Is there a need for an IVHS Program Office attached to the Office of the Administrator of the FHWA? Is there a need to transfer some existing positions from other parts of FHWA to help manage and conduct an expanded IVHS program?

ANSWER: In late 1992, the DOT commissioned an outside group of management experts to review the management of the IVHS program. This review was prompted, in part, by the greatly expanded funding of the IVHS program and its inherent intermodal nature. The review team recognized that the current IVHS management structure, which evolved as a matter of necessity at the outset of the program, is not adequate as IVHS grows and matures. The report recommends that the Department establish a strong joint IVHS program office that would have approval authority over all IVHS program plans, budget requests, and expenditures. Even with a new IVHS program office, however, the breadth and diversity of the IVHS program will continue to require that a variety of offices, both within and outside of FHWA, be actively involved. Thus the report also recommends that the new IVHS program office must have sufficient organizational stature, whether it is located within FHWA or elsewhere in the Department, to motivate program execution by others within DOT and to enlist the constructive support of other Federal agencies. We are currently considering how to best implement these and other recommendations from this management review.

The new Administration's initiative to reduce Federal Government administrative costs through employment attrition is requiring the FHWA to look at all its staffing needs including those necessary to effectively manage an expanded IVHS program. A major full-scale staffing review has recently been initiated. Pending results from this effort, the IVHS staff is looking at several interim possibilities. These include: (1) using staff from other elements of FHWA to manage certain components of the program; (2) increase the use of the Volpe National Transportation Systems Center in those areas where their expertises line up with program needs; and (3) increase our use of the national labs in both the technical research and program management areas. Although we would prefer to have some additional staff, we believe that in the short term we can continue to be successful in managing this rapidly growing program using a variety of program management techniques.

SENATOR LAUTENBERG: For FY 1991 through FY 1993, please list the number of professional positions that have been or are working on various aspects of FHWA's IVHS program. Why aren't you asking for additional staff for the IVHS program in your FY 1994 budget?

ANSWER: As indicated in our response to the previous question, President Clinton's initiative to reduce Federal employment prevents us from asking for additional FTE. To ensure that the IVHS program will continue to be managed effectively, several possibilities to increase the support staffing are being considered. A few of the options are outlined in our answer to the previous question.

It is very difficult to identify the number of professional employees working on various aspects of the IVHS program due to the extensive use of our field offices and the Headquarters Offices of Policy, Motor Carriers, Chief Counsel, and Administration in carrying out certain program activities.

We can provide the requested information for the two key offices responsible for FHWA's IVHS program. The Office of Traffic Management and IVHS, which has the responsibility for directing FHWA's IVHS program as well as coordinating DOT's IVHS program was created in 1990 with 26 professionals. The current staffing is 30 professionals. The Office of Safety and Traffic Operations Research and Development, Intelligent Vehicle/Highway Systems Research Division had 12 full-time engineers on December 1, 1990. The current staffing is 16 full-time engineers.

SENATOR LAUTENBERG: How is the FHWA interpreting the language used in the conference report on the FY 1993 DOT Appropriations Act that allowed funding "up to" the specified amounts for earmarked IVHS operational tests or corridor activities? Does this language provide a sufficient degree of flexibility for FHWA?

ANSWER: We do appreciate the efforts made by the Conference Committee to provide us with increased flexibility through the inclusion of this language. In working with State-level project representatives during the past months, we have expressed our willingness to honor the actual amounts in the report, especially when project features would truly contribute to advancing the national IVHS program.

In some cases, however, projects are not true operational tests of new IVHS technologies or institutional arrangements. Where we have discussed project concepts and amounts with Congressional staff representatives, the original project purposes and amounts as listed in the report have been strongly supported by these staff members. We therefore have accepted these further discussions as evidence of Congressional intent to provide the full amount to the location. FHWA flexibility in use of the funds has not been feasible under these circumstances.

SENATOR LAUTENBERG: One of the milestones identified in the DOT IVHS Strategic Plan is to complete development of a national, open IVHS architecture. Please tell us what progress has been made towards achieving this objective, and how you plan to ensure that an IVHS architecture is in fact open and acceptable to the diverse interest of the IVHS community.

ANSWER: On April 23, proposals were received in response to the Request for Proposals (RFP) issued on March 9 for development of an open national

architecture. A number of major U.S. technology firms are involved in the responses. Multiple contract awards are expected to take place late in the summer. By pursuing a multiple team approach to define the architecture, we are minimizing the risk that the resulting architecture is one that is developed around a particular company's products. In addition, we have acquired the services of the Jet Propulsion Laboratory to oversee the technical development effort and to ensure that the resulting architecture is in fact open.

To ensure broad IVHS community acceptance, DOT is currently working with IVHS AMERICA on a proactive consensus building effort that will proceed in parallel with the technical development effort. This consensus building effort will establish a forum by which those affected by the IVHS architecture can provide their comments and concerns. By addressing issues early and throughout the development process, we expect to achieve wide community acceptance of the final product.

SENATOR LAUTENBERG: Why is the Administration requesting to fund some of NHTSA's IVHS activities out of the FHWA GOE account?

ANSWER: NHTSA is already involved in evaluating the safety aspects of several ongoing operational tests sponsored by the FHWA, including the ADVANCE project in Chicago and the FAST-TRAC project in Oakland County, MI. A total of \$9 million in FHWA GOE funds are identified for NHTSA in FY 1994; \$4 million out of the FHWA GOE account, and another \$5 million from the President's Rebuild America proposal. Of this amount, \$2.5 million will be used to conduct safety evaluations of new and ongoing FHWA-sponsored operational tests. \$3.5 million will be used for performance specification development for collision avoidance systems, many of which are critical for the automated highway system. The remaining \$3 million will provide initial funding to form a partnership to operationally test a communication system for automatically summoning emergency medical assistance following an accident, and for providing precise data on the location of the crash.

SENATOR LAUTENBERG: Since last year, what progress has been made in addressing the key research questions facing the implementation of a successful National IVHS Program?

ANSWER: The National IVHS Program Plan, which will be completed in September, 1993, disaggregates IVHS into a manageable set of specific end user services and delineates the sequences of activities needed to develop and deploy those services. Thus, the Program Plan subsumes the key research questions within the appropriate services and sequences of activities such that we now track progress by advances towards deployment of user services. The following are several

examples of progress in IVHS research as tracked by user services:

The traffic control user service research was advanced last year under contracts to investigate deployment issues of traffic surveillance systems and to develop simulation models which can accommodate IVHS operating strategies, such as real-time traffic signal control, for off-line testing.

Several advanced traveler information services will benefit from a major contract begun last year that will test and evaluate potential communication alternatives for IVHS information transfer among traffic management centers, roadside, and individual vehicles. Similarly, route guidance services will benefit from a study just started that will determine optimum ways of identifying roadway segments and representing map databases to achieve compatibility among all the different private and public sector providers and users.

Each user service for commercial vehicle operations is being advanced by an effort to examine the feasibility of establishing a national Automatic Vehicle Identification (AVI) standard. AVI technology facilities, for example, automatic safety or size and weight regulatory compliance for commercial vehicles, saving the valuable time currently required to stop and manually perform these services.

Public input was obtained during the past year for use in preparing the ISTEA mandated report to Congress manually perform these services.

Public input was obtained during the past year for use in preparing the ISTEA mandated report to Congress on non-technical barriers to IVHS deployment.

SENATOR LAUTENBERG: Please specify the percentage of cost sharing (Federal versus non-Federal monies) for all IVHS projects that are supported with FHWA funds other than R&D projects. Please specify whether the non-Federal contributions are cash or in-kind.

ANSWER: The components of the IVHS program which are developed primarily through cost-share arrangements include operational tests, early deployment planning studies, and the Federal Highway Administration (FHWA) / Federal Transit Administration (FTA) Joint Operational Action Program to Improve Mobility. There are currently seventeen early deployment planning studies underway. The FHWA requires a 20% match from participants in this program.

In 1991, \$1.5 million was made available for the joint FHWA/FTA mobility project. Forty proposals were received and 12 projects selected nationwide. In 1992, another \$1.5 million was made available. Forty-two proposals were received and 10 projects selected nationwide. All the projects represent advancements in technology and management for intermodal operations. The federal funds supported 50% of the total project costs for the two year demonstration period.

The chart on the following page shows estimated Federal IVHS and non-Federal IVHS funding for operational tests. The nature of individual IVHS operational tests is quite varied depending on the partnership arrangements, technical and institutional issues being addressed, and other issues. The non-IVHS funds shown are a combination of cash from non-Federal partners (including public and private sector sources), contributed labor and equipment, and the value of other project initiatives which are an integral part of the IVHS operational test.

PROJECT	FEDERAL IVHS FUNDING	NON-IVHS FUNDING	% NON-IVHS
ADVANCE (Chicago, Illinois)	\$ 20,000,000	\$ 20,000,000	50%
Advantage I-75 (multi-state)	3,500,000	7,458,000	68%
Ann Arbor Smart Bus (Michigan)	1,980,000	462,500	19%
Boston Smartraveler	1,515,000	1,535,000	50%
Callifornia Smart Traveler	355,000	1,000,000	74%
Connecticut ATMS (to FY '92 only)	350,000	1,125,000	76%
CTA Smart Bus (Chicago, Illinois)	490,000	3,150,000	87%
Detroit Translt Information	50,000	50,000	50%
DIRECT (MI; to FY '92 only)	2,500,000	2,500,000	50%
Fast-Trac (MI; to FY '92 only)	10,000,000	3,831,000	28%
Guldestar (MN)	11,000,000	2,750,000	20%
HELP/Crescent	5,850,000	15,150,000	72%
Houston Smart Traveler (to FY '92 only)	2,500,000	2,500,000	50%
MTA Smart Bus (Baltimore)	2,000,000	500,000	20%
Norfolk Mobility Manager (VA)	500,000	100,000	17%
PASS (OR)	350,000	222,000	39%
Pathfinder (CA)	1,000,000	1,500,000	60%
Rogue Valley Mobility Manager (OR)	380,000	80,000	17%
RTD Smart Bus (Denver, CO)	8,320,000	2,080,000	20%
Satellite Comm. Feasibility (PA)	2,200,000	2,200,000	50%
SMART Corridor (CA; to FY '92 only)	1,100,000	45,900,000	98%
TRANSCOM (NY/NJ/CT)	11,400,000	2,975,000	21%
Travel-Aid (WA)	1,828,525	3,157,766	63%
TravTek (FL)	3,000,000	9,000,000	75%
TOTAL	\$ 92,168,525,	\$129,226,266	59%

SENATOR LAUTENBERG: How much is NHTSA and FTA spending on IVHS activities?

ANSWER: In FY 1993, NHTSA is spending \$9.0 million on IVHS activities, including research on collision avoidance systems, identification of critical driving hazards, safety evaluations of IVHS operational tests, and human factors studies for heavy trucks. In FY 1994, NHTSA proposes spending a total of \$16.5 million on IVHS activities, including performance specification development for collision avoidance systems, safety evaluations of new and ongoing operational tests, and the formation of a partnership to operationally test a communication system for automatically summoning emergency medical assistance following an accident, and for providing precise data on the location of the crash.

The FTA funding for IVHS research, development and operational testing activities is \$3.2 million in each of FYs 1993 and 1994. The FY 1993 activities focus on "smart card" system design and Advanced Public Transportation Systems (APTS) system architecture. As the program moves into FY 1994, increased emphasis will be placed on evaluation and analysis of advanced technologies and systems involved in transit-related operational tests.

OPERATIONAL TESTS

Operational tests are described in the DOT IVHS Strategic Plan as facilitating the transition from R&D into operational use. Participation by many different public and private entities would, therefore, seem to be desirable.

SENATOR LAUTENBERG: What steps has the Department taken to achieve this?

ANSWER: The success of the overall National IVHS Program depends upon active participation by both the public and private sectors. The forum which the IVHS AMERICA organization provides is an effective mechanism for bringing these groups together to begin and maintain the process of working together. As an active member of this group, DOT officials encourage creative partnership arrangements during face-to-face discussions and initiatives taken by the various committees. To further promote these partnerships, the evaluation and selection criteria which DOT has used in the solicitation for new operational tests highlights the importance of wide participation. A number of national associations have also participated in several public-private IVHS seminars and workshops.

SENATOR LAUTENBERG: How are you evaluating operational tests? When will you issue national guidelines of protocols for these evaluations?

ANSWER: Each operational test is required to conduct a full evaluation appropriate to the scope and extent of the test. We have developed guidelines on the conduct of these evaluations, and have provided this information to operational test sponsors. We are especially emphasizing the need for comprehensive evaluations with recent operational tests, and require that a full evaluation plan be prepared early in the project's life. We intend to retain a contractor early in FY 1994 to assist FHWA and other project managers with the design and conduct of evaluations at each test site. This central source of expertise and assistance in the evaluation aspects of IVHS projects will help to assure that consistent, nationally-compatible data is obtained from these tests.

SENATOR LAUTENBERG: The TravTek operational test project was scheduled to end in March 1993. Please tell us how well the in-vehicle system has been perceived by the public and share with us any preliminary results.

ANSWER: The evaluation phase of the TravTek operational test ended on March 31, 1993. Analysis of the evaluation data collected over the one-year operational period will continue for the remainder of the calendar year. Preliminary results from users' questionnaires and interviews have shown that the TravTek experience was very well received. There was no perception of a negative impact on safety, but rather, users indicated that they believed they drove in a safer manner. Users generally believed that the system saved them time, and some local users claimed savings of 10 hours over two months of use. These preliminary results also verified that users might be willing to pay nearly \$1000 for an in-vehicle device such as TravTek.

SENATOR LAUTENBERG: How many intermodal projects are ongoing? Please list these.

ANSWER: Many IVHS operational tests have multimodal and intermodal aspects, especially traveler information initiatives. These projects will provide information on travel alternatives for all modes, such as roadway congestion, transit schedule information, carpool opportunities, and park-and-ride lot availability. Examples include the Smart-Traveler project in Boston, Ma. and the Trav-

Info project in San Francisco, Ca. As the corridor programs get underway in the four designated priority corridors, all will have intermodal aspects highlighted in their projects.

In addition, the Federal Highway Administration and the Federal Transit Administration have implemented the Joint Operational Action Program to Improve Mobility. Under this program, 22 intermodal projects have been initiated in 1991 and 1992. All are designed to test and demonstrate the application of innovative intermodal technologies aimed at relieving congestion and improving mobility. These projects include: the use of information systems to provide employees with information on transit, ridesharing, and roadway conditions; the application of telecommuting centers; the use of advanced signal pre-emption systems to enable buses to move past intersection congestion; and the use of advance vehicle identification (AVI) systems to help enforce high occupancy vehicle lanes.

SENATOR LAUTENBERG: Which, if any, of the operational tests supported with Federal dollars is running behind schedule or otherwise encountering technical or institutional delays or unexpected challenges?

ANSWER: In general, we have been very pleased with the progress achieved by operational tests. Delays have certainly occurred, which is to be expected when attempting new technological solutions and new institutional arrangements. Examples include the ADVANCE project, which is somewhat behind schedule due to difficulties experienced in implementation of the in-vehicle hardware components. Also, the ADVANTAGE I-75 project has experienced delays in procurement of various systems, due to the rapidly changing nature of AVI equipment and other factors. We are closely following the experiences of early efforts such as these projects and others; and the "lessons learned" will help future projects. We do not feel that the delays and challenges being faced are a threat to the overall IVHS program, and in fact are a natural feature of an advanced program.

SENATOR LAUTENBERG: How important are non-traditional public/private sector arrangements for advancing the National IVHS program? What are you doing to ensure the use of these innovative arrangements?

ANSWER: Partnerships among public sector agencies responsible for transportation service and private sector firms interested in marketing products

and services is essential to achieving the ultimate IVHS vision. We are especially encouraging communications, automotive, electronics, and computer-related firms to become involved with the consensus-building effort underway as part of the IVHS system architecture initiative. This early involvement will help to assure that the roadway infrastructure (primarily a public sector responsibility) is compatible with in-vehicle and other guidance and information systems, which are expected to be primarily private sector opportunities. For operational tests, we also encourage early involvement of private sector firms with public sector transportation operators. We have seen innovations such as privatization of operations which are normally public sector responsibilities, implementation of "design-build" proposals which call for one contractor to be responsible for both key aspects of advanced projects, and "system integrator" contracts wherein a private-sector contractor is responsible for numerous smaller contracts. We have encouraged use of these arrangements in IVHS operational tests where they would expeditiously advance project objectives.

SENATOR LAUTENBERG: For each of the 40 or so operational tests or other IVHS activities now receiving FHWA support, please specify which use non-traditional procurement processes. How will you address this subject in your next solicitation for new operational tests? What reasons might explain the few innovative institutional proposals received in response to your first solicitation?

ANSWER: Several innovative procurement techniques, such as design-build and system integrator contracts, were discussed in the previous answer concerning private/public sector arrangements. Most of the operational test projects we have underway rely on the procurement processes already in place within the various participating agencies or firms. Use of these procedures assure that Federal contracting requirements, which are not waived for IVHS projects, are met. In general, we have found that contracting offices dealing with IVHS projects have been quite responsive to the needs of the operational tests, and good institutional relationships among technical, legal, and administrative functions within project organizations is key to successful procurement. We are also continuing to assess unique contracting opportunities used by DOD and DOC to determine their applicability to the IVHS program.

IVHS AMERICA MEETINGS

SENATOR LAUTENBERG: I have heard that many State and local government officials are not participating in meetings of the IVHS AMERICA because of insufficient travel funds. What, if anything, should and can FHWA do about this situation?

ANSWER: Under representation in the IVHS program includes State and local governments, trucking companies, small businesses, some segments of the research community, and disadvantage businesses. Primary reasons for the under representation are lack of awareness and knowledge about the IVHS program or an unwillingness to commit short resources, both personnel and travel funds, to another national association like IVHS AMERICA.

To improve involvement in the IVHS program the DOT has been working with IVHS AMERICA in the development of a major IVHS "Education and Outreach" component. The first phases of this new initiative will be implemented later this fiscal year. Also, recognizing that IVHS AMERICA membership is not for everyone, the DOT will be working with, and in some cases contracting with, other national associations and groups to insure broad based understanding and involvement in the IVHS program is achieved. Contracts have been initiated or are being discussed with the Institute of Transportation Engineers and the Public Technology, Inc.

Although we have not ruled out providing travel fund support for special situations, we do not feel that using \$3-5 million per year to fund travel for all under represented groups is a prudent use of Federal IVHS funds.

SENATOR LAUTENBERG: Do you allow funds from the early deployment program to be used to enable State and local IVHS personnel to attend meetings of IVHS AMERICA? If not, why?

ANSWER: The Early Deployment Program provides grants to state and local governments to conduct planning studies for the deployment of IVHS services. If an IVHS AMERICA meeting is relevant to the completion of the study, then travel associated with that meeting is an eligible activity for funding through an Early Deployment project. See the answer to the question above on why routine travel to IVHS AMERICA meetings is not an eligible item.

STANDARDS AND PROTOCOLS

SENATOR LAUTENBERG: What is FHWA doing to establish standards for Advanced Vehicle Identification (AVI) systems?

ANSWER: FHWA has contracted with the Lawrence Livermore National Laboratory (LLNL) and the National Institute for Standards and Technology (NIST) to define the vehicle to roadside communications (VRC) needs for IVHS, and to review the capabilities of the AVI equipment in the marketplace and that which vendors are developing. Based on the above, in about 6 months they will recommend a course of action for FHWA to create a nationally compatible specification for a vehicle to roadside communication system that will meet the needs of commercial vehicle IVHS applications.

SENATOR LAUTENBERG: I understand that different regions of the country are using non-compatible AVI systems. When and how will this problem be resolved?

ANSWER: Yes, different toll authorities are using different AVI systems because they are using generic, performance based specifications in their bid documents. However, this is not all that bad as the use of AVI is new to the toll collection industry and the needed functions are still being defined by the authorities. Initially, a Type I, "read-only", AVI unit which provides only an identification number was thought to be sufficient. However, many toll authorities are now specifying a Type II, "read-write" unit, and the current thinking is that a Type III, "read-write with connections to an on-board the vehicle device [such as a smart card reader]" unit is necessary because it will provide more IVHS opportunities to users. In the next month IVHS AMERICA [with FHWA present] will be beginning a series of meetings with States with toll facilities to determine if a compatible toll AVI specification can be developed. For CVO applications, see the above question and answer. Every effort will be made to seek a common compatible specification with these two efforts.

INSTITUTIONAL CONSTRAINTS

Towards the end of this year, the Department is required to submit a report to Congress on the non-technical constraints facing the National IVHS Program. By law, the Department is directed to provide recommendations to address these constraints.

SENATOR LAUTENBERG: Are you getting the assistance you need from the Department of Justice and other Federal agencies to ensure that the DOT will be able to offer solutions to the major constraints facing IVHS?

ANSWER: The Department of Transportation is receiving the assistance required from other Federal agencies to develop the Nontechnical Constraints

Report. The Departments of Justice and Commerce are aware of the development of the Nontechnical Constraints Report and have agreed to serve as reviewers particularly on those sections related to legal issues, public/private sector issues, and privatization.

SENATOR LAUTENBERG: Please list the major contracts and reports that have been issued as a result of the Department's institutional IVHS studies activity. How much money are you spending in this area during FY 1993 and proposed for FY 1994? Please breakdown the use of these monies.

ANSWER: Attached is a summary of FY 1993 activities. Activities implemented in FY 1994 will build upon the 1993 program, with rigorous research proposed on intellectual property and multi-jurisdictional issues.

**DEPARTMENT OF TRANSPORTATION'S
INTELLIGENT VEHICLE HIGHWAY SYSTEMS
INSTITUTIONAL AND LEGAL ISSUES PROGRAM UPDATE**

Subject Area	Total Cost
Public/Private Cooperation	
IVHS Deployment and Public/Private Sector Issues - Fiscal Year 1992	\$121,759 (includes cost of 12 white papers)
Reference for Institutional Evaluations - Fiscal Years 1992-1993	\$150,000 (est)
Operational Test Case Studies - Fiscal Years 1992-1994	\$1.1 million (est)
Overcoming Barriers to IVHS Deployment - Lessons from Other Technologies and Public Programs - Fiscal Years 1993-1994	\$467,926
Deployment Issues	
Education and Staffing Needs - Fiscal Years 1992-1993	\$144,449
Metropolitan Traffic Management - Fiscal Years 1992-1993	\$200,000
Public Acceptance of IVHS Technologies and Services - Fiscal Years 1992-1994	\$500,000
Legal Issues	
Legal Constraints to the Research, Development, and Deployment of IVHS Technology in the United States - Fiscal Years 1992-1993	\$11,783
Legal Analysis for the Nontechnical Constraints Report Fiscal Year 1993	N/A
Public/Private Partnerships: Managing the Legal Issues Fiscal Year 1993	Support provided through the TRESP contract administered by FHWA's Office of Traffic Mgmt. & IVHS
Privacy - Fiscal Years 1993-1994	N/A
Procurement - Fiscal Years 1993-1994	N/A
Environmental Issues	
Environmental Conference - Fiscal Year 1993	N/A
Nontechnical Constraints Report	
Nontechnical Constraints Report Fiscal Years 1992-1994	N/A

QUESTIONS SUBMITTED BY SENATOR SASSER

SENATOR SASSER: As you know, one of the on going areas of dispute with respect to transportation funding is the degree and extent to which donor states can receive greater funding equity. The donor states, including Tennessee, all put more money into the Highway Trust Fund than they receive back. You will recall that the minimum allocation issue consumed a great part of the debate concerning ISTEA, as well as last year's Appropriations bill.

In this context, an area of concern still remains regarding donor states receiving discretionary funds. In the past, donor states that aggressively sought and received discretionary funding had their minimum allocation reduced by that same amount. By contrast, donee states were not similarly penalized.

What will be the Clinton Administration policy in this area?

ANSWER: The FHWA is administering the provision of law as it was enacted. We do not believe that any minimum allocation State is penalized because of receiving discretionary funds.

It should be recognized that, because of the way this provision was designed by Congress, a State's current donor/donee status and its receipt of minimum allocation funds have no direct correlation because of the different time periods involved. In fact, some States that are presently donees get minimum allocation funds. If one of these States received a discretionary allocation in a given year, its minimum allocation would be reduced in the following year, just as with a donor State in the same situation.

The difference in identifying a State as a minimum allocation State of a donor/donee State lies in the basis of calculation. A State is considered a donor State if highway user fees attributed to it in a given year with greater than the total of highway funds distributed to it in that same year. (The comparison may be done on a cumulative basis since 1956, but it is done to the same year).

MA, on the other hand, is calculated based on Highway Trust Fund (HTF) contributions 2 years earlier and considers apportionments for the current year and allocations from the previous year in determining the amount.

If the laws were amended to require FHWA to calculate MA without the discretionary allocations for all States, then each State receiving MA would actually receive less. For example, Tennessee would receive approximately \$5.3 million less in MA if discretionary allocations were removed from the calculation. That is \$5.3 million less that Tennessee can use for any or all of several specific categories, as opposed to a discretionary allocation which has a specific direction.

Curtailing Obligation Ceiling Exemptions

FHWA had advocated in the proposed FY 1993 budget including the Minimum Allocation program and ISTEA Demonstration Projects within the Federal-aid Highways obligation limitation.

How much of available Minimum Allocation and ISTEA Demonstration Project obligation authority has been obligated since enactment of ISTEA? Please provide

the information by State for fiscal years starting with FY 1988, through FY 1993.

Since enactment of ISTEA, \$1.4 billion has been obligated for minimum allocation, and \$471 million for ISTEA demo projects. See attachments for detailed information by State and fiscal year.

FEDERAL HIGHWAY ADMINISTRATION
OBLIGATIONS BY FISCAL YEAR
FOR MINIMUM ALLOCATION
(\$ IN THOUSANDS)

STATE	FY 1988	FY 1989	FY 1990	FY 1991	FY 1992	FY 1993	TOTAL TO DATE
ALABAMA					22,163	575	22,738
ALASKA							
ARIZONA	87	102	53,239	42,588	55,804	(8,608)	143,212
ARKANSAS	14,414	24,337	38,957	30,151	51,551	18,254	177,664
CALIFORNIA	62,397	199,303	195,325	84,078	135,127	(13,368)	662,862
COLORADO							
CONNECTICUT							
DELAWARE							
D. C.							
FLORIDA	3,641	31,893	22,616	184,993	106,829	39,530	389,502
GEORGIA	38,813	82,785	97,058	84,926	35,725	5,853	345,160
HAWAII							
IDAHO							
ILLINOIS	180	9,518					9,698
INDIANA	102,947	25,537	95,033	141,064	73,063	42,578	480,222
IOWA							
KANSAS			131	2,086		1,244	3,461
KENTUCKY	1,157	2,860	377	360	3,321	353	8,428
LOUISIANA					4,030	1,999	6,029
MAINE		1,339		617	996	75	3,027
MARYLAND						504	504
MASSACHUSETTS							
MICHIGAN	25,235	27,248	16,994	30,324	71,794	29,261	200,856
MINNESOTA							
MISSISSIPPI	8,619	12,810	31,375	34,002	24,156	731	111,693
MISSOURI	8,373	44,417	36,248	45,116	52,781	10,959	197,894
MONTANA							
NEBRASKA							
NEVADA							
NEW HAMPSHIRE							
NEW JERSEY							
NEW MEXICO							
NEW YORK							
N CAROLINA	94,774	43,512	70,197	54,014	121,068	43,322	426,887
NORTH DAKOTA							
OHIO	65,884	77,256	204,165	63,241	19,937	29,992	460,475
OKLAHOMA	77,754	54,709	50,032	36,861	31,822	5,110	256,288
OREGON		3,838	(547)	17,568	783	(105)	21,537
PENNSYLVANIA						9,907	9,907
RHODE ISLAND							
S CAROLINA	9,367	(627)	28,221	33,942	19,037	(421)	89,519
S. DAKOTA							
TENNESSEE	2,434	46,591	45,441	14,217	5,748	(718)	113,713
TEXAS	397,488	319,214	200,220	290,837	116,894	66,422	1,391,075
UTAH							
VERMONT							
VIRGINIA	6,795		(182)	69,251	41,068	6,618	123,550
WASHINGTON							
W. VIRGINIA							
WISCONSIN	40,033	67,914	71,783	64,538	56,634	34,101	335,003
WYOMING							
AMERICAN SOMOA							
GUAM							
PUERTO RICO							
N. MARIANA							
VIRGIN ISLANDS							
TOTAL	960,392	1,074,556	1,256,683	1,324,774	1,050,331	324,168	5,990,904

FEDERAL HIGHWAY ADMINISTRATION

OBLIGATIONS BY FISCAL YEAR
FOR ISTEA DEMONSTRATION PROJECTS
(\$ IN THOUSANDS)

STATE	FY 1992	FY 1993	TOTAL TO DATE
ALABAMA	5,899	5,584	11,483
ALASKA			
ARIZONA		688	688
ARKANSAS	4,137	16,996	21,133
CALIFORNIA	6,620	4,355	10,975
COLORADO			
CONNECTICUT			
DELAWARE	6,156	12,922	19,078
DIST. OF COL.	84		84
FLORIDA	1,366	4,677	6,043
GEORGIA	1,206	10,591	11,797
HAWAII			
IDAHO	704	326	1,030
ILLINOIS	40,488	69,327	109,815
INDIANA		3,648	3,648
IOWA	6,425	13,452	19,877
KANSAS	2,761	2,472	5,233
KENTUCKY		266	266
LOUISIANA		172	172
MAINE	3,264	4,713	7,977
MARYLAND	634	4,008	4,642
MASSACHUSETTS			
MICHIGAN	1,988	14,679	16,667
MINNESOTA	2,158	11,086	13,244
MISSISSIPPI	1,570	1,146	2,716
MISSOURI	1,690	14,514	16,204
MONTANA	480	302	782
NEBRASKA	50		50
NEVADA		8,048	8,048
NEW HAMPSHIRE	136	2,824	2,960
NEW JERSEY	794	4,821	5,615
NEW MEXICO	116	(37)	79
NEW YORK	1,890	6,589	8,479
NORTH CAROLINA	1,742	6,269	8,011
NORTH DAKOTA	3,124	9,903	13,027
OHIO	102	2,585	2,687
OKLAHOMA	988	9,304	10,292
OREGON			
PENNSYLVANIA	12,066	31,552	43,618
RHODE ISLAND	1,573	1,320	2,893
SOUTH CAROLINA	529	1,855	2,384
SOUTH DAKOTA			
TENNESSEE	421	40	461
TEXAS	5,621	13,200	18,821
UTAH		281	281
VERMONT			
VIRGINIA	1,097	3,058	4,155
WASHINGTON	6,044	17,678	23,722
WEST VIRGINIA	481	6,564	7,045
WISCONSIN	3,999	13,446	17,445
WYOMING		2,597	2,597
AMERICAN SAMOA			
GUAM			
PUERTO RICO			
N. MARIANA			
VIRGIN ISLANDS		4,851	4,851
TOTAL	128,403	342,672	471,075

Curtailling Obligation Ceiling Exemptions

FHWA had advocated in the proposed FY 1993 budget including the Minimum Allocation program and ISTEA Demonstration Projects within the Federal-aid Highways obligation limitation.

What accounts for the slow rate of obligation for Minimum Allocation and ISTEA Demonstration Projects funds?

It is projected Minimum Allocation will obligate at about the same rate as in FY 1993. ISTEA is authorized for a six year period, as each year progresses, obligations accelerate as funds become available.

FLEXIBLE USE OF STIMULUS FUNDING

SENATOR SASSER: The Clinton Administration's proposed \$2.97 billion boost to highway obligation authority will provide the critical "go-ahead" to important projects idled by lack of funding. It's my understanding, however, that the States must not only spend the additional funds within a designated timeframe, but also within existing ISTEA programs. One of the most important features of ISTEA was its emphasis on greater State and local flexibility with respect to assessing how best their funds could be used to meet their particular transportation needs and demands. What specific steps will the Administration take to ensure that flexible use of funds is also accomplished through anticipated stimulus funding?

ANSWER: Since the proposed economic stimulus approach for the Federal-aid highway program is to basically increase the obligation limitation so that ISTEA programs are fully funded for fiscal year 1993, the States will continue to be afforded the same flexibility on funding available under the ISTEA.

SENATOR SASSER: Another key provision of ISTEA provided for the designation of a 155,000 mile network of roads of national significance. These roads would comprise the National Highway System (NHS), and would include all of the Interstate System. Congress is due to receive the route proposals by December 18, 1993.

It is estimated that the NHS will carry approximately 70% of heavy truck travel. I realize that the States will not actually submit their route proposals to the Federal Highway Administration until the end of next month. However, in anticipation of the submissions, what data does the FHWA have concerning the overall payment quality of the proposed NHS? Also, is there any preliminary data regarding progress on pavement management system efforts that would be pertinent to the NHS route designation process?

ANSWER: The HPMS is FHWA's data base on the condition of all highways in the Nation. From a statistical sampling, by the States, the HPMS includes inventory, condition, and performance data. Any route proposed for the NHS would be included in the HPMS.

FHWA's current policy on Pavement Management System covers nearly all the anticipated mileage on NHS, except the mileage under

local jurisdiction. ISTEA and the Notice of Proposed Rulemaking cover all anticipated mileage on the NHS.

OUTDOOR ADVERTISING CONTROL

SENATOR SASSER: During the debate on ISTEA, an area of contention for many Tennesseans involved the removal of outdoor advertising. Like many of my colleagues, I have constituents on both sides of the issue. On the one hand, there are some remarkably beautiful areas, particularly in East Tennessee which many interested persons believe are diminished by billboards. There are also a great many billboard owners in Tennessee who are small businesses, small "Mom and Pop" operations if you will.

To clarify the requirements in this area, is removal of nonconforming billboards mandatory upon the States?

ANSWER: No. Public Law 102-302, relating to the Dire Emergency Supplemental Appropriations Act, signed into law June 22, 1992, amended 23 U.S.C. 131(n) making the expenditure of Highway Trust Funds for the purpose of acquiring and removing nonconforming signs entirely discretionary with respect to the State.

SENATOR SASSER: What is the average cost of removal?

ANSWER: The average cost of removing nonconforming signs is not generally reported by the States. However, the cost varies significantly depending on a number of factors, i.e., sign type and whether litigation was involved. When the States were acquiring these signs, the average cost as adjusted for inflation was \$3,360 for the standard billboard and site interest. Larger signs, i.e., jumbo signs erected beyond 660 feet from the right-of-way are estimated at \$25,486 for the sign and site interest. Although an average cost could be estimated for both types combined at \$14,423, it would not be considered realistic due to the differences in the number of each sign type remaining, i.e., 84,758 nonjumbo signs and 5,347 jumbo signs.

SENATOR SASSER: Also, does the Administration have any actual or proposed avenue of recourse that might minimize the impact of removal on small business owners?

ANSWER: Yes. There are two signing systems presently in use in the highway right-of-way that provide information to the traveling public about the availability of services of small businesses. Specific service (LOGO) signs provide travelers with business identification and directional information for essential motorist services (gas, food, lodging, camping). These signs may be used on any class of highway and are intended for use primarily in areas rural in character. Most States use this signing system.

The other signing system, Tourist Oriented Directional Signs (TODS) provide business identification and directional information for business services and activities, including seasonal agricultural products. These signs advertise those businesses and activities that derive the major portion of their income or visitors during the normal business season from motorists not residing in the immediate area of the business or activity. The signs may only be used on rural conventional roads (nonfreeway type highways). Approximately 16 States use this signing system.

Section 1059, Use of Tourist Oriented Directional Signs, of the Intermodal Surface Transportation Efficiency Act of 1991 provided that the Secretary shall encourage the States to provide for equitable participation in the use of tourist oriented directional signs or "logo" signs along the Interstate System and the Federal-aid primary system.

SENATOR SASSER: The Intelligent Vehicle Highway Systems technology (IVHS) offers tremendous promise in addressing the nation's congestion and all-important safety concerns. The Administration's "Rebuild America" plan proposed increased for IVHS up to \$100 million in FY 98. A portion of the increase would be attributed to defense technology conversions.

Approximately how much of the proposed increase for IVHS will be dedicated to defense technology conversions? Also, please elaborate on any defense technology conversion efforts currently underway.

ANSWER: FHWA has been working with several defense technology agencies and laboratories to share information on our respective programs and to identify technology needs of mutual interest to IVHS and defense. Our discussions resulted in the identification of the vehicle technology area for IVHS which has been included in the "Program Information Package for Defense Technology Conversion, Reinvestment, and Transition Assistance" that was released by DOD's Advanced Research Projects Agency (ARPA) when the President announced the program on March 11, 1993. The DOD/ARPA category for vehicle technology, which includes electronics for both vehicles and intelligent highway infrastructure, is one of eleven areas identified by the Administration for the defense technology conversion.

Numerous defense industry representatives and defense industry federal laboratories have shown a strong interest in technology conversion to IVHS. This has been evidenced by their proposals to FHWA in response to our Request for Proposals for IVHS operational tests and in response to our Broad Agency Announcement for precursor studies for the Automated Highway System prototype. Their interest has also been shown by their contacts to ARPA and DOT following the President's announcement and by their involvement in IVHS AMERICA.

The Administration's Rebuild America's Infrastructure proposal includes \$20 million per year for defense applications. These funds will enable DOT to participate with defense companies, national labs, and other federal agencies like ARPA in partnerships to facilitate and accelerate the transfer of defense technologies to IVHS applications.

SUBCOMMITTEE RECESS

Senator LAUTENBERG. With that, the meeting of the subcommittee comes to an end. It is recessed. The next subcommittee meeting will take place on Wednesday, April 21, at 10 a.m. in SD-192. We are going to be discussing the Department of Transportation's fiscal year 1994 budget requests with Secretary Peña.

Thank you all for your participation. You have been very helpful.
[Whereupon, at 11:45 a.m., Wednesday, March 31, the subcommittee was recessed, to reconvene at 10 a.m., Wednesday, April 21.]

MATERIAL SUBMITTED SUBSEQUENT TO THE HEARING

[CLERK'S NOTE.—The following statement was submitted subsequent to the hearing:]

STATEMENT OF THE ELECTRIC TRANSPORTATION COALITION

INTRODUCTION

This statement is submitted by the Electric Transportation Coalition (Coalition), a national organization of public and private groups interested in the use of electricity as a transportation fuel. (A membership list is attached.) A principle activity of the Coalition is to encourage the adoption of incentive-based policies and programs to support the development and use of electricity as a "fuel" for light and medium duty vehicles, public transit and heavy rail services.

This statement addresses the fiscal year 1994 budget for the Department of Transportation and focuses on funding for programs authorized by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).

Increased investment to revitalize the nation's transportation infrastructure is a cornerstone of President Clinton's "Rebuild America" program. The renewed focus on transportation systems offers an important opportunity to create employment, increase economic productivity and to assert U.S. technological leadership through the support and development of advanced transportation technologies "fueled" by electricity.

THE ROLE OF ELECTRICITY IN THE NATIONAL TRANSPORTATION SYSTEM

The Electric Transportation Coalition believes that electricity is the fuel of the future to power the national transportation system. Electricity offers significant advantages in transportation applications. From an energy security standpoint, electric transportation presents our nation with a very important means to reduce our dependency on foreign petroleum and to increase the diversity of the fuels used in the transportation sector. A wide variety of transportation modes—individual passenger and light-duty vehicles; buses and trolleys; light rail; commuter rail; high speed rail; magnetic levitation; and heavy rail services—can be powered by an abundant, domestically-produced energy resource generated from a variety of sources. That domestically produced resource is electricity.

Electricity also holds the potential to significantly reduce emissions from the transportation sector. Electric vehicles (EVs), for example, are truly "zero emission" vehicles. They produce no tailpipe emissions and generate insignificant emissions resulting from operation (such as emissions from braking). And, unlike other vehicles, EVs are not subject to emission system deterioration over time, and there is no danger of tampering with emission controls.

The only identifiable emissions are from the powerplant which generates the electricity used to charge the EV batteries. And, powerplant emissions are subject to rigorous environmental controls; thus, even when powerplant emissions are included, electric transportation offers significant improvements over conventional modes relying on petroleum based transportation fuels.

For urban areas, electric transportation is particularly important in substantially reducing emissions of mobile source pollutants, including volatile organic compounds and oxides of nitrogen that are the precursors of urban smog. Air quality considerations have forced municipal transit operators in many urban areas to begin to examine clean fuel bus technologies. Electric trolley buses represent a near term, zero emission alternative. Also, development programs are underway to lead to the commercial introduction of battery-powered electric buses, suitable for a variety of transit applications. With onboard batteries, these buses require no overhead electric lines in order to operate. Longer term research programs to develop fuel cells for urban transit bus applications are also in progress.

In the heavy rail sector, imposition of NO_x emissions limitations could require significant emissions reductions. Compliance strategies for rail operators could include additional emissions controls or operating modifications. An attractive alternative, particularly in areas with significant air quality problems, is likely to be rail electrification.

Finally, the advancement of electric transportation technologies presents opportunities for U.S. technological innovation and worldwide leadership. Adequate public investment in a variety of electric transportation modes offers a means to focus the creative abilities of U.S. industry, including those industries which need to reorient from military to civilian applications.

THE ROLE OF THE FEDERAL GOVERNMENT IN SUPPORTING THE INTRODUCTION OF ELECTRIC TRANSPORTATION MODES

The Federal government must be an active partner in the introduction and enhancement of electric transportation systems. Creating a market for electric transportation will require that customers have greater access to, and familiarity with, newly emerging technologies. This is an area where participation by the Federal government, in particular, can have a significant impact. By joining with local and state governments, industry and other public and private partners to support research, development, demonstration and deployment of new electric transportation technologies, the Federal government can help to introduce these newly emerging technologies to the public. Such exposure, in time, will familiarize the public to these new forms of transportation and better ensure customer acceptance.

Adequate federal funding must be provided for all electric modes of transportation to realize the environmental, energy security and efficiency benefits of these transportation modes. Government should focus also on ways to utilize government investments to attract increased private investment.

Transit Programs

The Coalition supports full funding for the transit programs authorized in ISTEA. The authorization levels for the surface transportation program (STP) and the other public transit programs included in ISTEA reflect a careful balancing of interests. Full funding for each component of the authorization is necessary to maintain this balance.

Funds provided for transit programs in fiscal year 1993 fell well short of the level authorized in ISTEA. Even including the pending supplemental appropriations legislation, funding for transit will remain far below the fiscal year 1993 authorized level of funding.

Transit services reduce air pollution in comparison to individual vehicle travel; and electric transit promises even greater reductions. Electric transit has an important role to play in enhanced environmental quality, congestion relief, and energy conservation which can only be realized through additional Federal support. The Coalition believes that electric transit projects should be a high priority for funding.

Section 3 and Section 9 Programs

The Coalition supports the use of revenues under the Section 3 and Section 9 discretionary and formula grants programs for electric transit projects. Section 3 and Section 9 grants are the primary means by which Federal resources currently are used to support electric transit programs such as light rail and electric bus projects. The Coalition will work through our membership to encourage various jurisdictions, especially those located in urban nonattainment areas, to investigate and incorporate electric transit modes into local transportation plans. The importance of such transit modes as effective links in an overall intermodal transportation system also should be stressed as part of local transit decisionmaking.

Alternatively Fueled Bus Programs

The Energy Policy Act of 1992 authorizes \$90 million over fiscal years 1993-1995 for alternative fuel bus programs. The Act authorizes the Department of Transportation to enter into cooperative agreements and joint ventures proposed by transit authorities in urban areas (population over 100,000) to demonstrate the feasibility of using alternative fuels in urban buses and other motor vehicles for mass transit.

Private interests may participate in joint ventures and cooperative agreements. Transit authorities must agree to provide 20 percent of the costs of such projects. Funding for this program is subject to appropriations being made; in addition, the \$90 million authorization is also to be used to pay incremental cost of dedicated alternative fuel school buses, including costs for refueling facilities and conversion costs.

The program authorized under the Act may serve as a successor to the Federal Transit Administration's (FTA) Alternative Fuels Initiative (AFI Program). Over 60 grants, totalling \$200 million, have been awarded under the AFI program for 1112 alternative fueled vehicles for use in transit service operations (470 CNG, 35 LNC, 338 methanol, 177 ethanol/ethanol injection). Funds have been used primarily for bus purchases, with eligible buses being those that meet normal requirements for durability and maintainability; the program has been described by the FTA as being "fuel neutral."

It is unclear from the information currently available whether the Department of Transportation will seek to aggressively implement the new authority for alternative fuel bus programs. The Coalition urges that any alternative fuel bus initiatives undertaken by the Department should include both battery powered transit and school buses and electric trolley buses.

Surface Transportation Program Funding

As a general matter, the Coalition believes that the flexible funding mechanisms included in the Surface Transportation Program should be utilized to provide additional support for electric transportation modes wherever possible. With respect to specific programs, the Coalition is particularly interested in the congestion mitigation and air quality improvement program (CMAQ) authorized under Section 1008 of ISTEA.

CMAQ was designed as a program to set aside specific monies out of the Highway Trust Fund to be used for projects to address congestion and improve air quality. A total of \$6 billion is authorized from fiscal year 1992 through fiscal year 1997 for the CMAQ program.

Experience with the implementation of the CMAQ program to date has varied widely from state to state. Because of the obligational ceilings imposed on surface transportation funding, it appears that many states have not fully committed resources up to authorized levels for the CMAQ program. Yet this program represents one of the most important potential sources of revenues to be utilized to support air quality enhancement efforts, including efforts required to achieve compliance with the requirements of the Clean Air Act.

Currently, the Federal Highway Administration is considering the extent to which the alternative fuel vehicle program will qualify under CMAQ. There are a number of potential electric vehicle and electric transportation applications which the Coalition believes are fully within the scope of the CMAQ program. As an example, a new initiative slated to get underway shortly in Massachusetts using CMAQ funding will demonstrate the feasibility of utilizing electric vehicles as the means to transport residents from neighborhoods to public transit stations. This demonstration offers a prime example of intermodalism, along with an indication of the scope of programs that can participate in the CMAQ program.

The Coalition is hopeful that to the extent full funding is provided for the Surface Transportation Program, adequate resources will be devoted by the states to the CMAQ program, to make funding available for innovative projects addressing both air quality and congestion issues, including electric transportation projects.

Planning Process Under ISTEA

ISTEA requires both short-term and long-term strategic planning. Funding appropriated under the Surface Transportation Program can be utilized for planning purposes. The Coalition believes that planning studies should give consideration to electric transportation as a part of this process. The intent of ISTEA was to promote increased transportation planning and intermodal transportation use. While the Coalition recognizes that electric transportation may or may not be feasible for a given area or project, the significant benefits that electrification of transportation services can have warrants additional focus (and funding) upon plans that address electrification as part of an intermodal transportation system.

By setting aside a portion of traditional planning funds for feasibility studies and plans for electrified intermodal transportation systems, an incentive could be created for States and local governments to thoroughly review all transportation options available to them, including the benefits that electric transportation has to offer.

OTHER ELECTRIC TRANSPORTATION PROJECTS UNDER ISTEA

Electric Vehicle Research and Development

Title VI of ISTEA created a program of research and development of advanced transportation systems and electric vehicles. The program provides for federal grant assistance of up to \$4 million to be made to consortia for cost-sharing in the design

and development of electric vehicles and advanced transportation systems, or related systems or equipment, or for the purpose of enabling serial production processes.

A total of \$12 million in fiscal year 1992 funds was made available for the program, which is administered by the Office of Engineering of the Federal Transit Administration. Grants have been awarded to CALSTART (\$4 million to develop and exhibit a showcase EV, to demonstrate and evaluate support facilities for EVs, and to develop a prototype electric bus); the Chesapeake Consortium (\$4 million, to demonstrate and evaluate EVs with an advanced electric power train and to develop manufacturing plans for production of EVs); the New York State Consortium (\$2.3 million to conduct a commercial viability study of EVs and to develop, demonstrate and evaluate a hybrid electric bus); and the Advanced Lead Acid Battery Consortium (\$1.2 million to support a fast charging research program to develop battery charging hardware). These funds are leveraged by matching contributions of private/state monies on at least a one to one matching basis.

The large number of private sector responses to this program is indicative of the breadth of interest and opportunities for development and deployment of advanced electric transportation technologies in the United States.

High-Speed Ground Transportation

ISTEA also established a program of research, development, and demonstration of ground transportation technologies. The program was authorized at \$50 million for technology demonstrations. A total of \$5 million is available for this program in fiscal year 1993 to be used for grants and contracts for demonstrations of specific technologies in high-speed rail transportation projects. In addition, ISTEA also authorized a \$25 million program of research and development in high speed ground transportation.

The Coalition strongly supports full funding to provide needed federal support for this program. High speed ground transportation systems offer an important national opportunity to improve intercity transportation.

The Coalition supports the creation of additional incentives for high speed rail, including the provision of investment tax credit for qualifying expenditures to develop new electric transportation technologies. This investment tax credit could be limited to areas with serious air quality problems (e.g. nonattainment areas under the Clean Air Act Amendments of 1990). An investment tax credit (ITC) also will encourage increased private investment in these technologies and is consistent with the President's intent to utilize the ITC to support "high technology" and job creation.

The Coalition also endorses legislation introduced by Senator Graham S. 438 to lift state volume caps on revenue bonds to support financing for high-speed rail systems. President Clinton has supported this proposal and it has been incorporated in the Administration's infrastructure investment package. Lifting the cap on revenue bonds will give high speed rail systems the same access to tax-exempt bonds already provided to airports, docks, and wharves.

Finally, the Coalition supports funding for, and expansion of, the existing loan guarantee program for private investment in high speed rail. Not only should the loan guarantee program (authorized by the Railroad Revitalization and Regulatory Reform Act of 1976) be funded, but we would urge that other forms of electric transportation including; light rail, bus and paratransit services, people mover services, and electrified freight service should be eligible under such an expanded program.

Magnetic Levitation

ISTEA authorized a \$700 million National Magnetic Levitation Prototype Development Program, to be managed jointly by the Department of Transportation and the Army Corps of Engineers. The program would provide funds to support the development of a maglev prototype in the U.S., through a phased program of matching grants to project sponsors.

The Coalition supports President Clinton's request to increase outlays to this program by \$646 million between 1994 through 1997. The President has proposed to use this funding for the Maglev Prototype Development Program or to support start-up of private or state/local high-speed rail projects.

Maglev technology presents a real opportunity to exert U.S. technological leadership in advanced transportation systems.

CONCLUSION

The Coalition appreciates this opportunity to make its concerns known to the Committee and to submit for the record its funding priorities for the upcoming fiscal year. We look forward to working with the Committee and the Congress to achieve these goals.

ELECTRIC TRANSPORTATION COALITION

MEMBERSHIP—APRIL 16, 1993

Allegheny Power Service Corporation
 American Electric Power Service Corporation
 American Nuclear Energy Council
 American Public Power Association
 Arizona Public Service Company
 Asea Brown Boveri, Inc.
 Baltimore Gas & Electric Company
 Boston Edison Company
 California Department of Commerce
 Centerior Energy Corporation
 Chattanooga Area Regional Transportation Authority
 Chrysler Corporation
 City of Albuquerque
 City of Chicago Department of Environment
 City of Detroit
 City of Riverside
 City of San Diego
 Commonwealth Edison
 Consolidated Edison of New York
 Consumers Power
 Copper Development Association
 Detroit Edison
 District of Columbia Energy Office
 Duke Power Company
 Edison Electric Institute
 El Paso Electric Company
 Electrosorce, Inc.
 Entergy Corporation
 Florida Power and Light Company
 Florida Power Corporation
 Florida Solar Energy Center
 FMC Corporation
 Ford Motor Company
 General Motors Corporation
 General Public Utilities
 Georgia Tech Research Institute
 Hughes Aircraft Company
 Illinois Power Company
 International Brotherhood of Electrical Workers
 International Lead Zinc Research Organization
 Kansas Electric Utilities Research Program
 Long Island Lighting Company
 Los Angeles Department of Water & Power
 National Electrical Manufacturers Association
 National Rural Electric Cooperative Association
 Nevada Power Company
 New York City Department of Telecommunications & Energy
 New York Power Authority
 New York State Electric and Gas Corporation
 Niagara Mohawk Power Corporation
 Northeast Utilities
 Northern Indiana Public Service Company
 Oklahoma Gas & Electric Company
 PacifiCorp
 Pacific Gas & Electric Company
 Pennsylvania Energy Office
 Pennsylvania Power & Light Company
 Philadelphia Electric Company
 Potomac Electric Power Company
 PSA Peugeot-Citroen/USTR
 PSI Energy
 Public Service Electric & Gas Company
 Sacramento Municipal Utility District
 Salt River Project

San Diego Gas & Electric Company
Solar Electric
Solar Energy Industries Association
South Carolina Electric & Gas Company
Southern California Edison
Southern Company Services, Inc.
State of Colorado
Texas A&M University System
The Doe Run Company
Theodore Barry & Associates
Unique Mobility, Inc.
University of California
University of South Florida
Virginia Power
West Virginia University

DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1994

WEDNESDAY, APRIL 21, 1993

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Frank R. Lautenberg (chairman) presiding.

Present: Senators Lautenberg, Harkin, and Specter.

DEPARTMENT OF TRANSPORTATION

OFFICE OF THE SECRETARY

STATEMENT OF HON. FEDERICO PEÑA, SECRETARY OF TRANSPORTATION

ACCOMPANIED BY KATHERINE E. COLLINS, ACTING ASSISTANT SECRETARY, BUDGET AND PROGRAMS

OPENING REMARKS

Senator LAUTENBERG. I call the Subcommittee on Transportation appropriations to order. And we will take a moment to greet the Secretary and to outline what our mission is with this subcommittee.

This is going to be the first hearing on President Clinton's budget request for transportation for fiscal 1994.

This budget marks a real turning point in transportation policy, because today we have before us a budget that makes a real attempt at a truly balanced transportation program, a program that seeks to reverse the trends of the last 12 years of disinvestment in our Nation's infrastructure, declining productivity, and the loss of jobs.

Finally, we have a budget before us that recognizes the critical necessity to invest in new technologies like high-speed rail and intelligent vehicle highway systems, technologies that will improve productivity and create thousands of new jobs throughout their deployment and the new efficiencies that they will bring to our Nation's economy.

Our economy has already paid dearly due to our failure to invest adequately in our Nation's infrastructure. Just in my own State of New Jersey, we have seen over 70,000 jobs lost in the construction industry since 1988.

Japan, on the other hand, invests more than 20 times that which we do in infrastructure; and in Germany 15 times as much. They are maintaining their existing systems, developing new technologies, and making themselves more productive.

And through reduced market shares and exports, we are the ones that are really paying the price for those investments.

The budget request before us certainly recognizes the critical value of infrastructure investment. Indeed, 44 percent of the President's investment proposals for fiscal 1994 is in the area of infrastructure.

Much of this investment would be in the area of transportation. President Clinton is seeking full funding of the highway program as contained in ISTEA. He is asking for 180 percent more for transit formula and discretionary grants than was requested by President Bush for fiscal 1993.

For Amtrak operating and capital grants, including funding for the Northeast corridor, the President is requesting 254 percent more than was requested by President Bush for the last fiscal year, the current fiscal year. That is good news.

The bad news, unfortunately, is that this subcommittee is not going to be able to fund the President's entire budget request.

The President has requested, for all domestic discretionary spending, \$5.4 billion more in outlays than is allowed under the budget resolution already adopted by the Congress.

The budget resolution does indeed mean tough medicine in many areas as we pursue the goal of reducing our budget deficit. I strongly support this goal and recognize that transportation, unfortunately, is going to have to take its share of some bitter medicine.

The administration has made a well-intentioned effort at trimming and cutting certain parts of the transportation budget. It made some tough choices, but the fact is that this subcommittee is going to have to make some even tougher choices.

So an important focus for us this morning will be a discussion of those areas where we might succeed in cutting further without blunting the investment goals that I so strongly support.

As we seek to reverse decades of underinvestment in our transportation infrastructure, we must ensure that increased funds are spent prudently and efficiently so that we can get the most bang for our transportation bucks.

One critical area where we must seek to spend more wisely is in the area of transportation safety. While the majority of funds appropriated to the Transportation Department go toward direct investment in our Nation's highways, rail systems, and airports, this subcommittee has never lost sight of the critical safety functions that DOT has responsibility for.

In many modes of transportation, we now find that either deregulation or other economic changes have forced unwelcome changes in the operating practices of many segments of the transportation industry. And, often, safety is the victim.

Whether it is in the aging oil tankers that ply our waters with inadequate care, or truckers driving on our highways with inadequate rest and deficient brakes, we have to take more aggressive steps to protect the health and the well-being of our citizens, as well as the quality of our environment.

The Secretary, in previous statements before this committee, has signaled a renewed commitment to safety, a commitment that is long overdue.

The Secretary will, I hope, have the resources at hand to move forward aggressively with your investment agenda, as well as safety agenda. You can count on this subcommittee to do everything it can to help in both areas.

Now, Mr. Secretary, I welcome you to the subcommittee this morning. I know that you just returned from a fairly arduous trip, but that has become normal, I assume, in your new life here, and that you may have a thing or two to tell us about the bilateral discussions that you were involved with in London.

But we are pleased to have you with us and to discuss so many subjects that come around as a budget is developing. We believe that you have, for a change, presented a budget that is worth defending. And we look forward to discussing that with you.

PREPARED STATEMENTS

Senator LAUTENBERG. Before I ask you to present a summary statement, I will take this opportunity to insert opening statements from two of my colleagues who are unable to join us this morning, Senators D'Amato and Sasser.

[The statements follow:]

STATEMENT OF SENATOR D'AMATO

Mr. Chairman, I am pleased to join you in welcoming Secretary Peña. This is the second time Secretary Peña has testified before this subcommittee, but the first time since the President's fiscal year 1994 Budget was issued.

The newly proposed fiscal year 1994 budget contains \$4.6 billion for transit. This falls \$700 million short of the \$5.4 billion authorized for transit by the Intermodal Surface Transportation Assistance Act of 1991 and the National Capital Transportation Act (D.C. Metro authorization). However, it would be an overall increase of 21 percent (\$802 million) over fiscal year 1993 appropriated levels: Transit formula programs would be increased by 43 percent, new starts would be decreased by 9 percent, while operating aid would stay level at \$802 million.

Federal-aid highway programs would fare better than transit, since they would be fully funded at ISTEA authorized levels, \$20.6 billion for fiscal year 1994. Given the Clean Air Act's stringent requirements for our nation's cities and towns, it is surprising to receive a budget that fully funds highway programs while transit again goes begging.

The Federal Aviation Administration would receive \$9.2 billion, a slight increase of 3.5 percent over current appropriated levels.

The U.S. Coast Guard would receive \$3.7 billion, a 4-percent increase over current levels. However, all funds for the Coast Guard are to be transportation funds. In past years, the Defense Department has contributed vital funds to this account. It remains to be seen what problems this subcommittee will encounter in meeting the many needs of the Coast Guard without DOD assistance.

Some other funding areas of interest include the \$1.056 billion proposed for Amtrak and the Northeast Corridor (current levels) as well as a high-speed ground transportation initiative.

I look forward to hearing Secretary Peña's views on this new budget proposal.

Thank you, Mr. Chairman.

STATEMENT OF SENATOR SASSER

Good morning. I join in welcoming Secretary Peña to his second appearance before the Subcommittee. With thousands of jobs in the balance, this Panel and the nation have eagerly awaited the Administration's proposed Fiscal Year 1994 Transportation Budget.

Job growth and creation remain the nation's number one priority. Competition from abroad and an ever changing, mobile global climate have heightened the sense of urgency under which we seek to expand employment opportunities. If America is to respond effectively to the economic challenges of the day, we must join President Clinton in his call to "Rebuild America".

America's strength has always been in its people. Through diversity and numbers, America is at its best when our people are working. President Clinton understands this. President Clinton also understands that America cannot and will not be all that it can be unless the American worker leads the way. The quality of jobs created today will define the promise of the nation's economic future.

It is no accident, therefore, that transportation investments are high on the Clinton Administration's economic agenda. A safe and efficient intermodal transportation system is synonymous with securing the nation's competitive edge. Prudent, well-targeted transportation investments mean expanded employment opportunities and the development of important technologies of the future.

The Administration's economic stimulus plan is a jobs plan. It is the first down-payment on a long-range commitment to "Rebuild America". The immediate impact would mean the creation of thousands of jobs, jobs that are desperately needed today. It is all the more unfortunate that a segment in the Congress chose to throw up a partisan smokescreen to stall the President's jobs creation plan.

Despite the roadblocks, the President's proposed Fiscal Year 1994 Transportation Budget maintains the economic high road, focusing on the kind of investment needed to rebuild the nation's infrastructure, and put our people back to work. The Clinton Administration's proposed Fiscal Year 1994 Transportation Budget begins the process of reversing what has been a decade long era of disinvestment in the nation's physical infrastructure.

The Administration's proposed Fiscal Year 1994 Transportation Budget cannot fill all the potholes, or repair every crumbling bridge overnight. It does, however, recognize the critical nexus between the nation's economic health and the safety and efficiency of our transportation systems.

The Clinton Administration's first transportation budget offers more promise than the previous two Administrations' budgets combined. Highways, roads and bridges, the staple of the nation's transportation artery, all would receive increased investments under the Clinton plan.

In addition, the Administration's fiscal year 1994 Budget begins the ISTEA promise of taking U.S. transportation policy into the future. Through increased commitments to High Speed Ground Transportation, Magnetic Levitation, and Intelligent Vehicle Highway Systems, as well as crucial transportation Research and Development, the Clinton plan provides a focus and direction to fulfilling ISTEA.

The ultimate beneficiaries are the American people. Transportation investments create jobs. Equally important, transportation investments enhance the safe and efficient movement of people and goods, both at home and abroad.

I hope the Congress will work with the Administration to make transportation investments work for people. I look forward to hearing the testimony.

STATEMENT OF SECRETARY PEÑA

Senator LAUTENBERG. Secretary Peña, we invite you to proceed.

Secretary PEÑA. Thank you very much, Mr. Chairman.

And let me tell you how happy I am to be before you and this committee for many reasons. You are right; I have just returned from London after our first formal negotiating with my counterpart, Secretary of State for Transportation John McGregor, to begin renegotiating our current bilateral agreement with the United Kingdom.

But while I was there, Mr. Chairman, I had an opportunity to observe my counterpart participate in a longstanding tradition in the Parliament, which is called questioning. This is where the Transport Minister presents himself to the House of Commons.

Members of the House are able to ask him pointed questions, and he must respond on the floor. I must tell you that I am delighted to be here in this committee, not to be subject to the kind of questioning that he was subjected to in the Parliament.

Senator LAUTENBERG. Do you mean that this is the civilized body?

Secretary PEÑA. This is a civilized body.

Senator LAUTENBERG. Interesting.

Secretary PEÑA. Well, it was fascinating. And I was informed that there are actually two maroon-colored borders on the carpet beyond which members cannot cross, because that is the length of two swords, because in the old days, apparently, every once in a while where there was serious disagreement—you had to be careful—swords were actually drawn. [Laughter.]

But they have improved remarkably, Mr. Chairman. And I am just happy to be here, not having to worry about crossing maroon borders.

And by the way, I would be happy in my questioning period to respond more—to explain what we were able to do in our meeting with Mr. McGregor. I think we have made substantial progress.

But in addition, Mr. Chairman, I am happy to be here, because I have always appreciated and respected your leadership in this area of investing in our Nation's infrastructure and your commitment to improving our transportation facilities in the country. And I look forward to working with you and other members of the committee in future years.

Your comments today, Mr. Chairman, frankly, reflect very much my philosophy and much of what I wanted to say. So I will summarize my statement this morning in talking about the 1994 budget by simply saying that this President and this administration have a much different view of investment in infrastructure and, particularly, in transportation than have past administrations.

We agree that investment in transportation infrastructure is critical to our economy. Having come back from Europe, it is abundantly clear to me that we are not maintaining our competitive position vis-a-vis Europe and Japan, as you stated.

We must invest more in our infrastructure. At the same time, we have to continue to find ways to reduce the deficit. And the President's budget proposal does that.

Let me give you, Mr. Chairman, an overview of the budget for 1994. We are asking the committee to approve a budget in the amount of \$39.9 billion. That excludes MarAd. That is a 10.9-percent growth over 1993.

To put that in perspective, if we are able—and I understand you have a vote this morning on the stimulus—to approve the stimulus program, at least as originally proposed—the \$4.1 billion for transportation—the point I want to make is that the 1994 budget I am talking about this morning would maintain that level of funding.

There were some who were critical of the stimulus, particularly in transportation, because it was argued that it was only a one-shot investment, not to be followed up in subsequent years with a similar level of investment.

Clearly, the 1994 budget does that. And so the stimulus is the first step of a multiyear commitment and a steady commitment to infrastructure investment.

The second point I want to make is that the 1994 budget increase includes \$3.7 billion for investments which are primarily in

infrastructure, but we are also proposing reductions in administrative costs.

We will reduce our full-time equivalent staffing by 1,765 by 1994. We are committed to making additional administrative cuts in the amount of \$64 million.

BUDGET THEMES

Mr. Chairman, let me talk about the themes of the budget. And then I will go into a little more specificity. As we look over the next 4 years, you will see the following themes: First, making strategic transportation investments to strengthen our economy, as I said earlier, to ensure that we have the economic stimulus we need and fully allowing our economy to develop as it should.

We recognize that \$1 out of every \$6 of gross domestic product is now spent in transportation-related activities. We want to increase speed. We want to increase reliability. We want to improve cost effectiveness.

The budget has a \$28.4 billion investment for infrastructure. And that investment is 71 percent of our budget.

So when people ask the question, "Where is money going?" 71 percent of my budget is going into actual infrastructure investment.

I think that is, perhaps, different from other budgets of other departments. And, of course, we want to focus on particular industries in transportation, airlines and maritime.

The second general theme we will enforce and emphasize, as you suggested, Mr. Chairman, is the question of safety. It continues to be a very high priority and a primary responsibility at this Department.

You will see investments in safety inspections, maritime safety, safety grants, particularly to States and localities, Hazmat training, and programs aimed at reducing highway deaths in the total amount of \$1.95 billion.

Mr. Chairman, you made mention in your opening comments about truckers. I am reminded of the fact that I stopped a rule-making which would have allowed truckdrivers to drive longer hours, because I felt that the analysis done had not adequately responded to the question of safety.

I think that is the signal that this Department is sending throughout the country, that safety is a very important priority, particularly with respect to trucks.

The third theme, Mr. Chairman, you will see is our connecting environmental policy to transportation investment and programs. We want to support planning and projects which are supportive of the environment and to mitigate environmental damage.

We will do this through Federal-aid highways congestion mitigation funds and other programs. We are already working more closely with the Environmental Protection Agency to ensure that we work in collaboration.

Let me be very specific. Last week, the EPA Administrator and I sent a jointly signed letter to the Governor of California indicating to the State of California that, because of our concern that the State had not yet passed the enhanced inspection and maintenance program, it was subject to losing Federal highway funds.

I believe this was the first time that such a joint letter has been sent to a State. The message there is, clearly, that we do not want to cut back on highway funding, particularly in California. California has great needs in the area of transportation, but it is my responsibility to enforce the law. I am working very closely with Carol Browner to ensure that those messages are sent to States which are not in compliance, but also to send those messages with adequate and timely notice so that we simply do not wait until the end of the assembly's time this year and then tell them they are subject to enforcement.

So I think we are already beginning to send a signal that working with EPA very closely, being concerned about environmental issues, is going to be a major theme of this administration.

The fourth general theme is technology improvements, something you have talked about, something that I am very committed to. There are ample opportunities in transportation to invest in new technology.

We are very much committed to the intelligent vehicle highway system. We are investing in high-speed rail technology, which the country desperately needs. We are supporting new technology improvements such as the use of the global positioning satellite technology, which I think is very exciting.

And last month, I was in Dallas helping launch a new program of defense conversion, speaking to 800 defense contractors and encouraging them to move into the transportation area.

I had an opportunity to talk to the people at Texas Instruments who are doing very interesting things as respects toll roads and using new technology to allow civilian vehicles to use the same technology that we used in Desert Storm to allow truckdrivers and others to drive through the night. Those kinds of new technologies, I think, are very exciting and something that we can do.

The fifth general theme, Mr. Chairman, is the question of intermodalism which, of course, was very much a part of the ISTEA legislation. We believe this can become a reality.

I am excited about the fact that many cities throughout the country are focusing on this concept and are proposing projects that integrate our modes of transportation.

SPECIFIC BUDGET REQUESTS

Now, having talked very briefly about those themes, in the budget you will see in the area of highways, as you said, full funding of the Federal-aid Highway Program. In addition, the budget includes \$214 million for intelligent vehicles.

In NHTSA, we are asking for a 14-percent increase for a total of \$307 million.

In transit, we will have a much different philosophy and attitude about transit than did the previous administration. We are supportive of transit. The transit budget is \$4.6 billion. That is a 21-percent growth over 1993 enacted levels. We think it is important to improve air quality, to relieve congestion. We are going to focus those dollars on the capital side. As respects operating assistance in the transit area, we are going to cap that at \$802 million, but, generally speaking, we are much more supportive of transit.

Railroads, \$1.06 billion; we want to be supportive of Amtrak, \$633 million, and \$204 million for the Northeast corridor. And, of course, my responsibility is to develop a major policy for a new initiative in high-speed rail technology, a \$1.3 billion program over 5 years that the President has asked us to address.

Last, the last two areas, FAA, a 3.5-percent growth over 1993—that is \$9.2 billion—with special focus and attention on the procurement problems of the FAA, particularly the AAS system where, I think, we are making significant progress.

And for the Coast Guard, Mr. Chairman, \$3.7 billion, a 4-percent increase over 1993. The Coast Guard continues to provide outstanding services to the country. They are being asked to do more and more things.

But I think we are funding it at an adequate level. And, of course, the Coast Guard also has to adjust, given the decrease in our investment in defense technology.

So let me close my comments, Mr. Chairman, by simply saying that these are the five themes we will have in this administration. The 1994 budget is a significant improvement over 1993.

I think it begins in a very dramatic way to respond to your concerns and those of other Americans about investment in infrastructure. And I look forward to working with you, to getting that job done and answering your questions this morning.

Thank you very much.

PREPARED STATEMENT

Senator LAUTENBERG. Thank you very much, Mr. Secretary. It is a wonderful summary of where we have to be. We have your full statement, which will be included in the record.

[The statement follows:]

STATEMENT OF FEDERICO PEÑA

Mr. Chairman and members of the Subcommittee, I am pleased to appear before you to discuss the Department's budget request for fiscal year 1994. This Subcommittee has provided strong support for transportation programs and the effectiveness of our programs has benefited from the guidance you have provided. If this nation is to have a sound, competitive transportation system to support our economy and our quality of life, we must invest in our transportation systems. At the same time, I am sure that you share the concern for deficit reduction and efforts to reduce the cost of Government.

The President's fiscal year 1994 budget for the Department of Transportation will ask this Subcommittee to approve \$39.9 billion in appropriations, obligation limitations and exempt obligations. (This excludes \$380 million requested for the Maritime Administration which is considered by another Subcommittee.) This request is 10.9 percent above the fiscal year 1993 enacted level. Assuming enactment of the President's fiscal year 1993 stimulus proposals, our request for fiscal year 1994 is essentially the same as the fiscal year 1993 level, reflecting a continuing commitment to investment in the capital needs of our transportation systems.

The Department's fiscal year 1994 budget responds to the President's emphasis on investment for the future, while moving concurrently to reduce the costs of government. Our request includes an increase of \$3.7 billion for investments, focused heavily on infrastructure improvements. As a means of reducing government's burden on the taxpayer, we propose a reduction of 1,114 Full Time Equivalent (FTE) staff in fiscal year 1993 and a further reduction of 651 FTE in fiscal year 1994 from the 1993 enacted level. The budget reflects savings of \$28 million in administrative expenses and proposes no new funding for certain programs funded in fiscal year 1993 which saves \$431 million from the baseline.

This budget request supports a national goal of creating jobs and stimulating the economy on more than a short-term basis. In particular, capital investment in infra-

structure, which totals \$28.4 billion and accounts for almost 71 percent of the budget, supports job creation both directly and indirectly and facilitates the productivity of American business by supporting more efficient transportation.

As we look forward to the next four years and to the goals we seek to accomplish, there are several key themes which I will stress as we manage our programs, develop our policies and formulate our budget proposals. I seek your support of these goals, as well as the appropriations entailed in carrying them out.

These include:

Strengthening Transportation's Role in Supporting the Economy

A competitive, growing economy requires a transportation system that can move people, goods and services quickly, safely and efficiently. Transportation must be a means of encouraging our full economic potential and not a constraint to growth. With nearly one out of every six dollars of Gross Domestic Product now spent in transportation-related activities, efforts to increase the speed, reliability and cost-effectiveness of the transportation sector will also play a key role in assuring the economy's competitiveness and ability to create jobs. Nearly \$28.4 billion, or 71 percent, of the Department's budget is for programs directly supporting capital investments in highway, transit, rail, maritime and aviation infrastructure. Our stimulus proposal is a down payment on this investment. The fiscal year 1994 budget follows through in a way that can create real momentum.

Supporting the Safety of Our Transportation Systems

Ensuring and promoting the safety of our transportation systems must be the primary responsibility of the Department to the users of the nation's transportation systems. This includes our own inspection and oversight role as well as encouraging, through our grant programs, State and local governments to take action to improve transportation safety.

The budget includes \$1.95 billion for programs that directly enhance the safety of our transportation services. This amount, which is five percent over the fiscal year 1993 enacted level, includes funds for safety inspections, maritime safety, safety grants, and transportation security. In addition, an appropriation limitation of \$15 million on the use of permanent budget authority is proposed for hazardous materials-related emergency preparedness planning and training grants to States. Highway and motor-carrier safety programs will seek further reduction of the traffic fatality rate which, according to 1992 estimates, stood at an estimated all-time low of 1.8 fatalities per hundred million vehicle miles travelled.

As a result of legislation enacted in past DOT Appropriations Acts, fiscal year 1994 is the first year that States will face the loss of highway funds for failure to enact laws requiring the revocation or suspension of drivers' licenses of individuals convicted of drug offenses. We will work with States to promote the enactment of such legislation to enhance safety.

Strengthening the Linkage Between Transportation and Environmental Policy

Transportation has a significant impact on the environment. Sound planning, investments and regulatory actions can support environmental improvements and mitigate environmental damages. The Department will encourage environmental improvements by coordinating our actions more closely with the Environmental Protection Agency and other Federal environmental agencies. We will also encourage State and local governments to identify environmentally sound transportation alternatives and to target their investments to projects and programs to reduce automobile congestion. The budget includes \$508 million for environmental activities. We recognize an obligation to be responsive in our activities and have included \$47.1 million to clean up environmental damage and ensure environmental compliance at DOT facilities. The budget also includes, as part of our grant programs, funds that States and localities will use to mitigate surface transportation congestion and aviation noise. Full funding for the Federal-aid Highways program will give States latitude to use the newly authorized Congestion Mitigation and Air Quality Improvement Program funds for transportation projects to help meet air quality standards in non-attainment areas. Also, States may use Federal-aid Highways funds to finance wetlands mitigation banks, bicycle facilities, billboard removal and scenic byways. I expect States to recognize these imperatives in their planning and project selection.

Advancing U.S. Transportation Technology and Expertise

The Clinton Administration is committed to the effective use of technology to meet national objectives. Sound technological investments can promote long-term economic growth that creates jobs and protects the environment; can help make government more efficient; and can provide the basis for national leadership in applica-

tion of new technology to economic growth. The budget includes \$688 million for research and development, a 6.4 percent increase over the fiscal year 1993 enacted level. The Department's research and development program not only supports departmental operating and regulatory responsibilities, but also serves as a catalyst to promote productivity improvements and new technology for transportation systems and services in support of the nation's economy. Key initiatives in the fiscal year 1994 budget will bring technology to bear on the issues of high-speed ground transportation and Intelligent Vehicle Highway Systems (IVHS). Effective introduction of technological progress in these areas will pay dividends for decades to come.

Fostering Intermodalism

The Intermodal Surface Transportation Efficiency Act (ISTEA) brought new emphasis to the obvious, but heretofore unrealized goal of intermodalism. Intermodalism seeks to foster connections to ensure the safe, efficient transfer of people and goods between modes of transportation; to ensure choice and competition in the market; and to coordinate among transportation organizations to improve transportation service in an environmentally and economically sound manner. Commitment to the flexibility provisions and planning requirements of ISTEA is part of intermodalism, as is ensuring that our investment decisions do not negatively affect the economic viability of other transportation services and markets.

The program and funding levels proposed for each operating administration in fiscal year 1994 are intended to support these key goals, as the balance of my statement will show.

SURFACE PROGRAMS

Our request for the three agencies reauthorized by ISTEA—the Federal Highway Administration (FHWA), the National Highway Traffic Safety Administration (NHTSA), and the Federal Transit Administration (FTA)—totals \$25.5 billion, 15 percent growth over the fiscal year 1993 enacted level. Implementing ISTEA, both financially and philosophically, and facilitating infrastructure investment are top priorities for the Department.

Our request for the FHWA totals \$20.6 billion, including \$2.1 billion in exempt obligations. The obligation limitation for Federal-aid Highways is proposed at the ISTEA-authorized level of \$18.362 billion, plus \$36 million (with commensurate increase in contract authority) for the Federal lands program. Legislation will be proposed for this additional authority needed above the ISTEA levels to address the backlog of necessary road projects on Federal lands. The request also includes \$75 million in total obligation limitations for motor carrier and highway-related safety grants, the same level as enacted in fiscal year 1993.

The Limitation on General Operating Expenses (LGOE) is budgeted at \$489 million, which includes about \$55 million for motor carrier safety activities. The request for LGOE also includes \$101 million to support IVHS activities which, together with \$113 million in contract authority available within the Federal-aid program for IVHS, will provide strong support for continued progress in this area. With this investment, 49 percent growth over fiscal year 1993, and planned investment in the future, we hope to bring IVHS technologies to the marketplace much faster and to set a program level that will spur private sector investment.

Under this budget proposal, resources for NHTSA would increase by 14 percent for a total of \$307 million. NHTSA will continue its successful efforts to reduce traffic accidents and fatalities. State highway safety grant programs will increase 25 percent from \$142 million (excluding carryover) to \$177 million, including \$50 million for grant programs to encourage States to enact safety belt and motorcycle helmet use laws and measures to counter drunk and drugged driving. The budget proposes \$130 million for the Operations and Research account, which is 1.4 percent above the fiscal year 1993 enacted level. The request includes \$6.5 million for alcohol programs and \$2 million toward the construction of the National Advanced Driving Simulator to be located at the University of Iowa. This state-of-the-art simulator will be used to conduct research in highway traffic safety, IVHS and automotive design. NHTSA recently signed a Cooperative Agreement with the University to ensure their participation in the design, fabrication and operation of the simulator.

For FTA, the budget proposes a \$4.6 billion program, with major emphasis on a sustained level of capital assistance. The budget request is a 21 percent increase over the fiscal year 1993 enacted level which is more growth than transit has received in the last four years. The quality of our transit systems is critical, since transit systems will be called upon to carry even more customers as States and localities develop strategies to deal with congestion and air quality. Operating assistance would be capped, as it has been in the past, at \$802 million. The urban capital

portion of Formula Grants is proposed at \$1.46 billion, a 22 percent increase over the fiscal year 1993 level including the stimulus funds. Discretionary Grants are funded at \$1.772 billion, with \$657 million for new starts, \$760 million for rail and guideway modernization and \$354 million for bus projects. I am also committed to making the flexibility provisions of ISTEA work. Last year, \$300 million in highway funds were transferred for transit use. That compares to only \$7 million transferred from highways to transit in all of the previous four years. With the latitude that the increased highway obligation ceiling permits, I would expect even more aggressive support for transit and other non-traditional uses of these funds. The budget also includes \$200 million for the Washington Metro, which supports WMATA's "fast-track" plan to complete the last 13.5 miles of the system, within the funds authorized for that purpose.

For Federal Railroad Administration programs, the budget requests \$1.056 billion. This budget recognizes the importance of rail in our passenger and freight transportation systems. Grant assistance to Amtrak is continued at current levels and an aggressive initiative is proposed to advance the development of high-speed ground transportation. At the same time, we are sensitive to our safety responsibilities. The request for Railroad Safety of \$45 million, an increase of 10.5 percent, includes funds for an additional 18 FTE's to strengthen the rail safety inspection program and to implement rulemakings and other legislative mandates.

With respect to High-Speed Ground Transportation, the budget proposes \$140 million in fiscal year 1994 and a total of \$1.3 billion over the fiscal year 1994-98 period. The proposal draws on \$648 million in contract authority from the highway trust fund, already authorized in ISTEA, together with \$637 million in general funds over the five-year period. Investment in this technology is not just a transportation commitment. It supports the growth of interdependent urban regions that are not bound only to the automobile or the airplane but can provide environmentally sensitive mobility within their boundaries. Such linkage will enhance the economic performance of these regions to the overall goal of national growth. To accomplish this goal, we would provide financial assistance to States for improvements, such as track and signal work, necessary to support speeds of 125 mph in selected corridors. In addition, we would finance development of technologies—both conventional and developmental in nature—needed to support high-speed ground transportation. This would include technical developments in the near term to advance the traditional steel-wheel-on-steel-rail systems and the initial phase of a maglev prototype with appropriate opportunity to measure its progress through the development and testing stages.

The request for Amtrak is \$633 million, including Mandatory Rail Payments. The Administration supports Amtrak and recognizes the important contribution its service makes toward meeting the nation's passenger transportation needs. At the same time, we support Amtrak's continuing goal of eliminating Federal operating subsidies. Amtrak, Congress and the Administration must pursue every opportunity to control operating expenses and increase passenger and other revenues in order to achieve this goal.

AVIATION PROGRAMS

For the Federal Aviation Administration, we propose a budget of \$9.2 billion, which provides 3.5 percent growth over the fiscal year 1993 enacted level. The Airport Improvement Program must be reauthorized for fiscal year 1994 and we will transmit our proposed reauthorization legislation soon. The capital component of the budget request totals \$4.65 billion and includes \$2.5 billion for Facilities and Equipment (F&E), \$250 million for Research, Engineering and Development (RE&D) and \$1.88 billion for Airport Grants. The request for F&E provides 7 percent growth (\$174 million) over the fiscal year 1993 enacted level and includes \$456 million for continued work on the Advanced Automation System. The delays and problems we have faced with this work are of concern to me as I know they are to this committee. We are committed to more effective oversight of this program, both at FAA and OST, as we proceed.

FAA Operations is proposed to increase one percent—\$38 million—to \$4.58 billion. This budget reflects tough choices and significant belt tightening. One of the budget reductions we propose includes termination of the Pay Demo program in October 1993. This program was due to expire in June 1994. Other actions include reducing discretionary contracts, travel and training expenses. Air traffic controller employment levels will total 17,871 controllers, the level expected at the end of fiscal year 1993.

We are proposing that 75 percent of the FAA budget continue to be financed by the Airport and Airway Trust Fund, consistent with current authorization. With the

fiscal year 1994 budget request of \$9.2 billion and the stimulus funds proposed for fiscal year 1993, the surplus in the Airport and Airway Trust Fund would decline from \$4.4 billion estimated at the end of fiscal year 1993 to \$3.98 billion at the end of fiscal year 1994.

MARITIME PROGRAMS

The budget request for the United States Coast Guard totals \$3.7 billion, a four percent increase over the fiscal year 1993 enacted level. The request would allow the Coast Guard to continue the services the public expects. For Operating Expenses, the budget proposes \$2.61 billion, an increase of two percent (\$52 million). Holding to this level requires \$42 million in reductions, such as closure of the Far East LORAN chain and reduction of the Anti-Submarine Warfare capability aboard high endurance cutters, offset by \$10 million to operate new or expanded facilities funded in previous budgets and \$7 million for improvements in the marine safety, marine environmental protection, fisheries protection and work-life initiatives.

For Coast Guard's capital program, Acquisition, Construction and Improvements, \$414 million is requested—an increase of 14 percent over the fiscal year 1993 program level which included the use of unobligated balances. Key elements of the request include \$45 million to procure two additional buoytender replacements, \$43 million to continue renovation of the medium endurance cutters, \$55 million to procure the last three HH-60J helicopters in support of the OpBAT drug enforcement program, \$22 million for necessary investments in housing for the Coast Guard's military forces, and \$35 million to modernize vessel traffic services.

With this budget proposal, Coast Guard's Environmental Compliance and Restoration program would increase five percent (\$1 million) to \$23 million. The Coast Guard will continue to deliver on its commitment to clean up and restore Coast Guard locations which have suffered or caused environmental damages and also ensure that its vessels are in compliance with applicable laws and regulations.

The budget proposal also contains \$64 million for the Coast Guard's Reserve Training appropriation, a 12 percent decrease. This reduced level will support a Selected Reserve force of 8,000. This down-sized force is based on the Coast Guard's review of its defense-related mobilization requirements.

The budget requests \$10.9 million for the Saint Lawrence Seaway Development Corporation, less than one percent increase from the fiscal year 1993 enacted level. In addition to these amounts, the Corporation will use \$300 thousand of its reserve to begin a three-year program of lock concrete repair strongly recommended by the Army Corps of Engineers.

OTHER DOT PROGRAMS

For the Office of the Inspector General, the budget request totals \$40.7 million, a 7 percent increase over the fiscal year 1993 enacted level, to support audit, inspection/evaluation and investigative activities. In particular, the budget requests \$3.6 million to finance independent audits of financial statements required by the Chief Financial Officers Act. Under the Act, the Inspector General is responsible for audits of financial statements prepared for the Department's trust funds, revolving funds and commercial type activities.

For the Research and Special Programs Administration (RSPA), the budget requests \$34 million which together with a \$15 million appropriation limitation on the use of permanent budget authority will provide a \$59 million program level. This is an increase of 18 percent over the fiscal year 1993 level. This growth will help RSPA carry out its safety and research activities, particularly in the areas of hazardous material safety and inspection, transportation research, emergency transportation, and airline statistics. The budget provides \$15 million for the Emergency Preparedness program, for State planning and training grants, and technical assistance to be financed from fees paid by hazardous materials shippers and carriers.

The request for the Pipeline Safety program is \$18.9 million, a 25 percent increase over the fiscal year 1993 enacted level. The budget request includes funding to address new mandates of the Pipeline Safety Act of 1992. The grant program is continued at \$7 million. Increased funding of \$2.6 million is requested to support RSPA's review and approval of liquid pipeline spill response plans as required by the Oil Pollution Act of 1990.

The budget includes \$15 million in fiscal year 1994, transferred from the Federal-aid highways account, to finance the new Bureau of Transportation Statistics, which was directed by the Appropriations Committees and authorized by ISTEA. The purpose of the Bureau is to compile and publish transportation statistics suitable for use in cost-benefit analyses, establish a long-term data collection program regarding the performance of the national transportation system and identify needed informa-

tion not currently collected. Under the law, the Director is appointed by the President and confirmed by the Senate for a four-year term. In fiscal year 1994, two key activities planned include completion of the nationwide Commodity Flow Survey in conjunction with the Census Bureau and initiation of a nationwide multimodal Passenger Flow Survey.

For the Office of the Secretary, the budget requests \$113 million, a four percent increase over the fiscal year 1993 enacted level, for salaries and expenses and other programs of the OST. In addition, \$149.6 million is requested for rental payments to the General Services Administration (GSA) which, together with \$17.5 million requested in the FHWA budget to be paid into this account, will support existing space and critical additions to accommodate forced moves into GSA space and workload requirements. Funds are requested to continue the Essential Air Service program (\$38.6 million) and the Transportation, Planning, Research and Development program (\$3 million) at fiscal year 1993 levels. Resources for the Office of Commercial Space Transportation total \$5.2 million.

For Salaries and Expenses, the budget requests \$65.8 million including funds to strengthen management oversight in the areas of information technology, acquisition and grants management and financial management and to continue office automation and development of financial management systems. The Office of Intermodalism, authorized by the ISTEA, will be funded from the Federal-aid Highway program as it was in fiscal year 1993. As evidence of my commitment to reduce the costs of government and streamline operations, the Office of the Secretary will reduce its staffing by 23 FTE from (two percent) to a level of 1,103 FTE recommended for fiscal year 1994.

There are a number of changes that I plan for the OST. The most significant is a reorganization of the Office of Policy into two assistant secretaries, one for aviation and international issues and one for transportation policy. This approach will allow both areas to get the full management attention they both deserve. The Office of the Assistant Secretary for Public Affairs will become the Director for Public Affairs.

The safety and soundness of the transportation infrastructure are vital to the Nation's economy. The fiscal year 1994 President's Budget for the Department of Transportation supports the priority this Administration has placed on investment—in infrastructure, in technology and in safety—which is key to America's future.

DEFICIENCY IN TRANSPORTATION PROGRAMS

Senator LAUTENBERG. Of course, the question of transportation is: How do we get there? And that is going to be one that we are going to be wrestling with, I guess, until we start to see some significant improvement in reducing the budget deficit and getting on with the programs necessary to keep our country functioning in lots of areas that need attention.

We are coming out of a period of time when programs were neglected across the country, and now are paying the price in so many ways. Thus, unfortunately, transportation programs are competing with other programs.

Now, you and I probably agree that in terms of the programs, after fundamental questions of war and peace and the economy, transportation looms among the largest, because that is the deficiency that has been there.

And it is also one that people understand. If you heard any part of the debate that has been taking place before we went out on break, you will notice that even the opponents to the President's package, came exclusive of severe criticism of the transportation budget. Transportation was always preserved.

And I guess some of that is because there are very few Senators who do not see the need for transportation investment in their State. So we have an area worth investing in and working toward, but we are going to have to wrestle with the competition for funds and be aware of that.

Could you give us a brief word about what came out of your trip to London, as long as that is fairly fresh on your mind? You got back last night.

LONDON DISCUSSIONS ON BILATERAL AVIATION AGREEMENT

Secretary PEÑA. Yes; I think I am in a different time zone at the moment.

Mr. Chairman, just by way of background, you will recall that we tentatively approved the first phase of the British Airway investment in USAir, a couple of months ago, I believe.

But part of that approval was a commitment on my part to seek the renegotiation of our current bilateral agreements with the United Kingdom, something called Bermuda II, which was negotiated several years ago, which we believe is restrictive in not allowing United States airlines access to British airports and to have the kind of competition that we think we should have.

I am happy to report that in our first meeting with my counterpart, Secretary of State for Transportation, John McGregor, we issued a joint press release in London indicating the following: One, we are committing ourselves to renegotiating this agreement within 1 year's time.

Two, we support the principles of increased flexibility and liberalization to allow all of our carriers to compete in our mutual markets. That means, specifically, lifting the restrictions we have currently on the number of cities we can access, the number of routes and planes we can use, limiting the restrictions on charter services, et cetera.

The bottom line is to try to achieve what we call open-skies agreements, or an open-skies regime, which is, essentially, allowing the carriers to compete. We believe that our United States carriers can do very well in the United Kingdom and, hopefully, beyond.

That is called Fifth Freedom Rights, which allow our carriers to go beyond London to other European markets. That was the essence of our discussion.

I was particularly pleased that we were able to agree that we will have our second negotiating session on May 5. So my staff will be back in London. And that gives you a sense of the priority that this has for the United Kingdom and for our country. So I think we are making—

Senator LAUTENBERG. Just one quick thing: When would you expect that a formal agreement would be executed?

Secretary PEÑA. Well, our goal is to do it within 1 year's time. Now, obviously, there is an opportunity for us to accelerate that schedule. And there are also some interim decisions that can be made, particularly on the part of the United Kingdom, as respects some pending matters by certain United States carriers wanting adjustments to the current bilateral.

We talked about those issues. So I am sensing some flexibility on the part of the British.

Senator LAUTENBERG. OK. But we are not just talking about, in this case, USAir having better access. We are talking about—

Secretary PEÑA. All U.S. airlines.

Senator LAUTENBERG. All.

Secretary PEÑA. That is correct.

Senator LAUTENBERG. All American carriers.

Secretary PEÑA. And that is what we mean by a liberalized regime.

Senator LAUTENBERG. OK.

Secretary PEÑA. It is opening up the markets to all, to allow more United States carriers who want access to the British market to have that opportunity.

Senator LAUTENBERG. It sounds like good news, Mr. Secretary. And we commend you for the effort and hope that a conclusion can be drawn fairly quickly, because one of the questions that looms large in aviation today is about the requirement for investment in some of our airlines, but at the same time, not to be giving away the store by permitting access to all cities here and not getting anything in return for it.

REDUCTIONS IN FISCAL YEAR 1994 BUDGET

I want to talk about some of the cuts that have to be made in order for the investment package to be able to meet the President's objective and to service the needs in our transportation budget for 1994.

The amount proposed for domestic discretionary spending in the Clinton budget is \$5.4 billion in outlays above the level allowed under the budget resolution. OMB Director Panetta has stated that the administration is interested in working with the Congress to find additional cuts in order to pay for the investment package contained in the Clinton budget.

Should we expect a formal amended budget request from OMB citing additional cuts for DOT in the coming fiscal year in order to help us pay for the proposed investment package?

Secretary PEÑA. Mr. Chairman, I do not think you will see that. What we would prefer is to work with you in trying to identify where we think we could make those cuts.

Obviously, from my perspective, we would like to preserve as much of the transportation investment piece of this, as opposed to other departments.

I am happy to work with you and see if we can creatively come up with some strategies, but, no, you will probably not see that kind of a formal—

Senator LAUTENBERG. We are going to be looking to you, Mr. Secretary, to give us the information that we need to have in order to make these decisions.

You are going to be the best one to determine what kind of staffing you need to manage these programs, to get rules and regulations out there with dispatch, and to be able to function.

We know that there is a certain amount of overhead that has to accompany the management of programs. And so we will be looking to see whether or not there are areas in which you can cut, whether they are in overhead programs.

We are all agreed that the programs designated for assistance are important programs. We look forward to working—we do not really look forward to working with you on how to cut further. [Laughter.]

But that is a requirement under law, essentially. And we are going to have to do it.

REINVENTING GOVERNMENT

Vice President Gore, as you know, is launching his initiative called reinventing Government. Have you looked at this enough to know how this initiative is going to affect DOT for next year?

Is it possible that this initiative will yield more cost savings within your agencies for the coming years as you now know it to be?

Secretary PEÑA. It might, Mr. Chairman. Let me say that in addition to the Vice President's leadership here, the Department had, for a couple of years, already been focusing on total quality management concepts, for example, and other initiatives like that.

We are going to work very closely with the Vice President. He will be working with all of the departments to have a uniform strategy throughout the Government.

But the answer to your question is, yes. Let me give you some examples. We discovered, for example, some unnecessary expenditures in the Department, which we are cutting, for example, excessive vehicles.

We are looking at all of the 300 planes that the Department of Transportation has to determine if they are absolutely critical. I believe the overwhelming proportion of them are necessary to the mission of the FAA or the Coast Guard for safety, et cetera.

But I think we ought to look at that very carefully. And we are continuing to look at FTE reductions, to ask the question: Do we need all the people that we have in the Department?

I come from an environment where we had to make some tough decisions when I was in a former position. And so I understand that process. So the answer to your question is, yes.

I think we can find additional cuts as we go through this process. And it probably has not been done in this fashion for many, many years.

Senator LAUTENBERG. Well, you have been on the job 2 months now. What, in that period of time, have you learned that would stick out as changes that you would like to make in the way DOT conducts its business that you can share with us now?

Secretary PEÑA. Well, generally speaking, Mr. Chairman, I think there are lots of—I do not want to call them frills.

Senator LAUTENBERG. Yes.

Secretary PEÑA. I am looking for a better word than the word "frills," but activities that we fund that are not critical to the mission of the Department. I gave you an example.

We have over 20 executive vehicles. We cut those in half. We do not need 20 cars to shuttle DOT staff between my building and the Capitol to conduct business.

Some might argue that those are small matters, and they are. They are symbolic, but I think they reflect the fact that we are going to review these expenditures very methodically.

STAFFING REDUCTIONS

I am looking at general staffing levels in some of the agencies and where there is an appearance of redundancy. If you look at the Department, the various modes, we have some redundancy, at least in some of the functions of those agencies.

I am asking the question of how we can either eliminate some of that redundancy and do, perhaps, some consolidation, or simply work more closely.

So I am already beginning to observe some of those improvements we can make. I believe that we will be able to make significant progress.

Senator LAUTENBERG. You know, all of us would like to rid our respective areas of responsibility of any redundancy. Are there program cuts that you think ought to be made?

Secretary PEÑA. At this point, I have not identified program cuts. It is more redundancy in the number of people who are—

Senator LAUTENBERG. How significant can that be?

Secretary PEÑA. It is hard to say at the moment, Mr. Chairman. What I am concerned about is that as we go about even the FTE reductions we talked about, that we try not to affect people in the field where they are critically needed, but look more in our office in Washington and ask the questions.

Senator LAUTENBERG. From the administration.

Secretary PEÑA. Absolutely. Are there some midlevel or top-level people in positions that we can do without? Oftentimes, I think that the easy thing to do is to cut somebody in some regional office where that person is dealing on a daily basis with someone.

Senator LAUTENBERG. OK.

Secretary PEÑA. So we are going to be very thoughtful about that.

TRAVEL

Senator LAUTENBERG. I do not know whether you have heard the story about the Saudi Arabian prince who needed transportation after he arrived—I think it was in Paris—and pulled out a significant wad of traveler's checks to charter a Concorde for \$235,000. I could be off \$10,000, but no matter.

Secretary PEÑA. I will never see that Concorde, Mr. Chairman.

Senator LAUTENBERG. Well, I hope not, because the request you put in for the purchase of a Concorde, I think, is really excessive at this time. [Laughter.]

But in any event, this fellow flew to his destination, which I think was New York, where his private 747 was awaiting him. I assume, Mr. Secretary, you are not traveling that way. [Laughter.]

Secretary PEÑA. No, Mr. Chairman.

Senator LAUTENBERG. Yes; because I heard your comment about 300 airplanes in the Department. It is shocking. I mean, it is bigger than some of the air forces that exist in countries around the world.

Secretary PEÑA. Well, again, Mr. Chairman, I believe most of those planes are critical to the mission of the Department, but I am confident that we are going to be able to cut others.

Another example of that is, as you know, the President has asked each of us on the Cabinet to fly commercial coach as we travel. I did that to fly to London and back. It is a little thing, but you would be surprised at how many people come up to me and say, "Why are you not flying in first class?"

There is a \$3,000 difference, for example, in flying to London in business class than flying coach. So we saved the Government that kind of money.

Second, there are jets available for my use that are used by NTSB and others, which past secretaries have used, which are at National Airport. We are not using those. So we are trying to cut where we can to save the taxpayers' hard-earned money.

Senator LAUTENBERG. Those aircraft ought to be available for search and rescue—

Secretary PEÑA. Right.

Senator LAUTENBERG [continuing]. And other serious missions, accident review, that kind of thing, but you are absolutely right. And when one looks at the cost for operating an aircraft on an hourly basis, you are talking about something significant.

And that is a nice luxury, but it is not one that the American people either want or understand in terms of the regular needs of the functioning of Government.

So I would urge you on, even though, again, as we look at the total that might be saved by reduction of cars, et cetera, it goes even beyond that, beyond the direct savings. It smacks of a luxury of lifestyle that is out of phase with where we are today.

REDUCTION TARGETS

Mr. Secretary, your budget request already assumes \$28 million in administrative savings, a reduction of almost 1,800 FTE's by the end of 1994. Is that realistic target?

Secretary PEÑA. Yes, Mr. Chairman; and we will meet it. We believe that most of that can be accomplished through attrition. There may be circumstances where attrition will not get the job done, but the President has given me my marching orders. And I will reach that goal.

Senator LAUTENBERG. Is there the possibility that even more staff could be cut without impacting your agency's ability to function efficiently?

Secretary PEÑA. That is our goal, Mr. Chairman. I think we can get the job done without affecting our ability to function.

Senator LAUTENBERG. Is there the possibility that administrative expenses within DOT could be cut more than the \$28 million proposed in the budget?

Secretary PEÑA. Actually, Mr. Chairman, the original figure was \$28 million, but let me just clarify for the record that, because of the way certain expenses were classified, I think in the FAA, the official figure is \$64 million.

And that is my fault, not your fault. That figure is a new figure. But to answer your question, I think that the more we look at how we operate, over time, we can find more reductions in administrative costs.

Senator LAUTENBERG. Mr. Secretary, we will look to your management to achieve as much by way of savings as possible. I know that you sincerely want to get this accomplished and, at the same time, be able to preserve management of the functions for which you are responsible.

TECHNOLOGY DEVELOPMENT

As a leading exponent for the expansion of high-speed rail and IVHS in this country, I am interested in your effort to promote these technologies within the country.

Separate from the increased funding contained in your budget, what specific steps are you taking to see that American companies get a chance to develop these technologies and produce the maximum number of jobs within the United States under that umbrella, to promote the technology wherever we can?

Secretary PEÑA. Mr. Chairman, I think this is a very exciting opportunity for our country. And I share your emphasis on this area.

One, in my presentation in Dallas where I spoke to 800 companies which had previously been primarily focused on defense programs and projects, I outlined for them the new opportunities we have for working with them to convert their operations into nondefense, and, particularly in the area of transportation, that there are cooperative funding grants that we have the ability to use to encourage that kind of technology.

An example of that is Texas Instruments, for example, which will be starting a new toll road in California—SR-91—together with Peter Kiewit Sons, Inc.

That technology is one that, I think, they have invented, which allows cars to go through the tolls without stopping. And it is all automatically computed to get a bill at the end of the month, et cetera.

Senator LAUTENBERG. I would imagine that what you would get is a reduction in a debit account, because there is not—it is not likely to start chasing receivables—

Secretary PEÑA. That is right.

Senator LAUTENBERG. Accumulating at 50 cents or \$1—

Secretary PEÑA. Right.

Senator LAUTENBERG. At a stop, you know.

Secretary PEÑA. You are right, Mr. Chairman.

Senator LAUTENBERG. Yes.

Secretary PEÑA. You pay in advance. And then there is a debit—

Senator LAUTENBERG. Right.

Secretary PEÑA. It will also reduce the amount of travel time and, of course, reduce pollution by reducing congestion at toll plazas.

Another example of that is a program where they are using the infrared capability that was used during Desert Storm where they will put a screen in your vehicle—and I had an opportunity to see this—so that you can drive at night.

And you can see things at night that, otherwise, you would not be able to see. For example, they gave me an example in Texas of deer, which are on the side of the road, which a lot of truckers will hit.

But it can be used, for example, for police cars that have to do night driving as they are going through darkened parts of the city. We are just on the cutting edge of beginning to explore that kind of technology.

And I think that the private sector is really interested in working with us, and we with them, in trying to support more and more of this technology. And we are going to have some funding to give them the kind of incentive and, hopefully, startup assistance to help move on that technology.

PROMOTING EXPORTS

Senator LAUTENBERG. All right. How might that funding get exported or developed so that we can encourage our companies to take advantage of the research already done, the things that might be on the drawing boards that would help them also develop an export business at the same time as we employ these technologies for our own use?

Secretary PEÑA. In a number of ways, Mr. Chairman. First of all, we had that week, I think, five regional meetings throughout the country. I was in charge of the Dallas meeting.

Other Cabinet secretaries were in other cities. So No. 1, just as with a new program, we are educating companies about how this is going to work; and then, No. 2, working in partnership with them.

There will be proposals, I am sure, which will be submitted, funding which will be made available. We can also invest in what States are doing. There are many States that have already taken the lead here and have set up systems.

For example, the States of Texas and California, we can work with them. And then there are universities and colleges which also have programs that we can invest in. So there are really a number of avenues which are available to help us support U.S. technology.

The other side of that is helping to promote U.S. technology. For example, Secretary Brown will be traveling to Saudi Arabia to help a United States company sell its products.

I will probably follow him after that, because it is in the area of transportation. This is something we have not done in the past.

Take Boeing, for example: When Boeing tries to sell its planes overseas, sometimes it does it alone. We are going to be there as a government supporting Boeing and the McDonnell Douglasses of the world, the GE's of the world, to help them sell their products overseas and to let those governments know that this Government stands shoulder to shoulder with our corporations. So that is another way in which I think we can be helpful in the export side.

Senator LAUTENBERG. Yes; well, we ought to do that. And we ought to be spurred on by the fact that Kuwait Airlines bought airbuses right after the liberation of the country by our forces.

So we ought to be fairly aggressive about those things, Mr. Secretary. And I would hope that Secretary Brown keeps that in mind as well. And the fact that you are cooperating to get technology exported is, I think, the right way to go.

We are joined by Senator Specter, who needs just a moment or two for some questions.

STATEMENT OF SENATOR SPECTER

Senator SPECTER. Thank you. Thank you, Mr. Chairman.

Mr. Secretary, I join my colleagues in welcoming you here to this first budget hearing. You have undertaken a major responsibility in a very big department, which has enormous national impact and a tremendous impact everywhere, especially in a State like Pennsylvania.

Regrettably, we have simultaneous hearings in judiciary on terrorism. And General Powell was testifying on appropriation for defense so that more Members, who I know would like to be here, could not be present.

And I would just like to conclude the brief moment by asking unanimous consent that my questions be submitted to you for the record.

Senator LAUTENBERG. So heard.

Senator SPECTER. Thank you. In conclusion, I look forward to working with you.

Senator LAUTENBERG. We will be pleased to do that.

Senator SPECTER. Thank you, Mr. Secretary.

Thank you, Mr. Chairman.

Senator LAUTENBERG. And I know, Senator, all of us on the Appropriations Committee sit on several committees. And unfortunately, the time available for hearings and meetings is compressed into a few hours in the morning.

Senator SPECTER. Yes.

Senator LAUTENBERG. So thank you for being here.

Senator SPECTER. Thank you.

Senator LAUTENBERG. A vote has just gone off. And do you, Senator Harkin, want to stay for a few minutes?

Senator HARKIN. You will be back.

Senator LAUTENBERG. Yes; you can ask your questions now if you are prepared to do so.

Senator HARKIN. OK. I may have to recess it if you are not back in time. I will just—

Senator LAUTENBERG. Yes; we will be back in time.

STATEMENT OF SENATOR HARKIN

Senator HARKIN. Thank you, Mr. Chairman.

Mr. Secretary, it is good to see you again. And I am sorry; I am a little late myself getting here.

I want to cover a couple or three things: Airline slots to Chicago; something that has been a key interest of mine for a long time, the local rail freight assistance program; and some transit drug testing.

AIRLINE SLOTS

On the airline slots to Chicago, many cities in Iowa are disadvantaged by the structure of these slots. They suffer with limited service. And in the case of a medium-sized city like Dubuque, they cannot get competing service to O'Hare, which might be economically logical if slots were available.

For example, right now, American Airlines serves Dubuque. It has three slots. That is it. So there is no competition. So they have a monopoly. So they have an effective monopoly through these Government regulations.

And the citizens of Dubuque and the surrounding area pay monopoly prices. Not only does it hurt them in their pocketbook, it limits the community's ability to compete for business development, tourist traffic, and conventions.

It is a problem in Iowa, but also in Michigan, Wisconsin, and surrounding areas around Chicago. During the last administration, there was a real lack of interest in DOT in moving to deal with these questions. And I am hopeful that this administration will start to deal with them.

Great Lakes Aviation, for example, has proposed to DOT that they would provide essential air service for Manistee and Menominee, MI, and Ottumwa, IA, without the current \$700,000 subsidy.

They would do without the subsidy, if the FAA would authorize six one-for-one trades within the general aviation slot allocations at O'Hare. Needless to say, I would want to be sure.

And I am told that this would not be a problem for general aviation. So here we could do it as a subsidy, if they could just trade some of the slots around. So I do not know if this proposal has yet come to your attention.

Can you give me any update on your views on this issue of the slots, for example?

Secretary PEÑA. Yes; I can, Senator. First of all, we do have a different view than the past administration about this issue. I am very interested in reviewing the whole slot program, specifically as respects the slots at Chicago and O'Hare for the commuter airlines.

There is a notice of proposed rulemaking which is out. The comment period will end fairly soon. That will give us an opportunity to review it, at least for the commuter airlines.

The proposal that Great Lakes has made, I think, is very interesting. I spent some time in Montana a week or so ago, and there was discussion about some other proposals that Great Lakes has.

But Great Lakes, as I understand it, has formed a code-sharing relationship with United Airlines operating out of Denver, which then allows it better marketing and provides United with feed traffic. In fact, in Great Lakes' proposal to serve Williston, ND, it would provide essential air service with subsidy for 19 months and then serve the community subsidy-free thereafter.

So we are intrigued by these proposals that Great Lakes is making. And I think it offers a live opportunity to use those funds for other cities and other airlines that genuinely need the EAS funding, because we have stabilized the EAS funding. We have not been able to increase it.

Senator HARKIN. That is right.

Secretary PEÑA. So I very much appreciate those issues. And this slot area is one that we will be looking at.

Senator HARKIN. Well, I am very pleased to hear you say that. And I am glad you are going to be taking a look at that and that you are aware of the Great Lakes situation.

Let me just say that on this issue of Dubuque, American Airlines has three flights a day. They tell me in Dubuque that they are operating at a minimum of 90 percent capacity, very high fares.

In fact, some people actually drive from Dubuque down to Cedar Rapids because they get cheaper fares. The fares are that high, but still they are operating at 90 percent capacity.

And American Airlines is dropping one of their flights. Now, why would they drop a flight if they are at 90 percent capacity and they are making all that money? Well, I asked the airport people and the business community in Dubuque.

And they said, well, what they have heard is that, "See, American Airlines has these slots."

Well, the airplanes that they are flying out of Dubuque are 36- and 48-seaters. They could use that slot to fly a 100-passenger jet in there, you see. So why would they want to do that when they can shift the slot so they can shift the business someplace else?

So that is the kind of problem that we are running into in these areas. They really do just have a monopoly hold. And there is nothing that the people in Dubuque can do about it.

So, again, I am pleased at your answer. And I do hope that you would keep me informed of any progress you make in that area.

LACK OF FUNDING FOR LOCAL RAIL FREIGHT ASSISTANCE

Local rail freight assistance has been an area of interest of mine for quite a while. I have seen the good that it has done. And I just cannot tell you how disappointed I am that it was not funded in the budget proposal.

I know that the previous administration always tried to kill this program and would not fund it. We put money into it. We had support here in the Congress for it. I am wondering if, perhaps, some of those people that were developing those budget proposals in the past might not have had some hand in this. Well, anyway, I just throw that out there for your consideration.

But I, I guess, have to tell you, Mr. Secretary, the program does a tremendous amount of good. The charge has been made that it helps only in specific areas, but in those areas it can mean the difference between a branch line existing or not.

And the money has always been leveraged. The States have put in money. The shippers have put in money. The rail lines have put in money. It is, like, for every \$1 that the Federal Government puts in, it gets leveraged maybe, what, \$5—how many times?

Well, in Iowa, the latest case we had was 5 to 1—I am sorry. Four to one? Four to one. So \$4 for every \$1 we put in keeps the lines open. The shippers are able to ship.

The farmers are able to get their goods to the elevators and down the branch lines. And if this were not so, if we did not have this, those branch lines would simply go out of existence.

And so it is very important in many rural areas, this local rail freight assistance program. It is not a large program. Fiscal year 1994 is only \$30 million. So it is not a very big deal.

And I just wonder if you have had the opportunity to become aware of the pent-up demand that would allow some of these underfunded railroads to improve their rail lines through this local rail freight assistance program. Have you been—has anything come to your attention on this?

Secretary PEÑA. Senator, I wish I could tell you that we would be able to fund that program. As you know, in a difficult budget we have to cut at someplace. And we were talking earlier with the chairman of the committee about the fact that this entire budget still needs a little trimming, because it exceeds some limits.

But having said that, I know, generally speaking, that there has been some health restored to this industry, but that there are a significant number of these rail systems that still need some assistance.

And you are absolutely correct. They have to rely on the States. The budget, as we have submitted it, will put more responsibility on the States. We know that the rail lines have had mixed success in accessing private capital.

In some cases, there are financial institutions that are not willing to enter this area. So I am aware of all of that. I guess, at this point, I have not been able to find counterbalancing cuts elsewhere in the Department. I know it is important to rural communities.

Senator HARKIN. Yes.

Secretary PEÑA. And you are right. It is not a lot of money.

Senator HARKIN. It is not a lot of money.

Secretary PEÑA. No.

BENEFITS OF LOCAL RAIL FREIGHT ASSISTANCE

Senator HARKIN. And the leveraging that goes on—and, again, I just was pointing out—I wanted to point out that you are proposing to spend \$140 million in high-speed rail, an increase of \$135 million in high-speed rail.

The administration is proposing to spend \$204 million on the Northeast corridor. That is last year's level. And, again, I am from Iowa. That Northeast corridor does not mean much to me.

But will I support it? You bet I will, because I know it is important. And it is needed. I had hoped that we in the rural areas would get the same kind of consideration.

A branch line out there may not be as big as that Northeast corridor, but I tell you, you close that branch line down, and you are hurting small towns and businesses and farmers all up and down that local rail line.

And for a small amount of money, you can keep them in business. And you can keep that rail line open. And the States have been willing to come in with their money. The shippers are willing to come in with their money.

And if you have an underfunded railroad or a new owner of that railroad, they are willing to put in some money, too. And so, again, I wish you would look at that, because it is just a small program, but the amount of good it does—again, I would be glad to meet with you at any time or to give you any of the information I have on what it has done in several States in the Midwest in keeping these branch lines open.

I can get you shippers that can tell you what it has meant to them and farmers and small business people out there. So for a small amount of money, we can have, I think, some attention paid to our rural areas, too.

So I wish you would really look at that. It will be my intention to try to get that funding back in there. I do not know whether we are going to get it, but if I have to I will attempt to take it out of some of the Northeast corridor stuff.

I mean, what is fair is fair. I mean, I understand the need for that, but we have a need in rural America also. And we have to balance these interests a little bit. I know you are sensitive to that.

And I appreciate it very much, but I just want to work with you in any way we can to get some funding into that local rail service assistance program.

I am sorry, Mr. Secretary. I have to go vote now.

Secretary PEÑA. OK.

Senator HARKIN. I had one question I wanted to ask you about transit drug testing, but could I just submit that to you in writing, please?

Secretary PEÑA. That would be fine.

Senator HARKIN. I appreciate it very much.

Secretary PEÑA. Thank you, Senator.

Senator HARKIN. The subcommittee will stand in recess until the chairman returns.

[A brief recess was taken.]

Senator LAUTENBERG. We will resume the hearing. And I would ask, Mr. Secretary, if we could get several people on your staff to go downstairs and monitor the subway between here and the Capitol.

I'd like a high-speed rail program started there. Starting will not be as difficult as stopping might be when you get to the other end, but I just waited about 6 minutes for the shortest ride I've ever taken. Walking is better, I think.

Anyway, please forgive us for any delays. I know that Senator Harkin had a few things that he wanted to talk to you about. And I wanted to discuss some transit capital projects.

TRANSIT NEW STARTS

Mr. Secretary, in your budget request for transit new start funding, you have included funding, stating that the allocation of these funds will be based on the recommendations contained in the Federal Transit Administration 3-J Report.

That report has not been used for this purpose in the past, but has provided the committee with some very useful information on the various and competing new start projects.

Will the new 3-J report include specific dollar recommendations for each of the new start projects that currently exist?

Secretary PEÑA. Yes, Mr. Chairman.

Senator LAUTENBERG. Will the FTA provide a strict ranking system of the new start projects?

Secretary PEÑA. I have looked at a rough draft of the report, Mr. Chairman. No; there was not an official ranking: this is the first or second or third. It will be an entire list of recommendations of all of the projects we want to fund and the exact amounts.

Senator LAUTENBERG. Is the ranking a requirement to establish some prioritization?

Secretary PEÑA. Mr. Chairman, I think, perhaps, what you are asking about is the criteria we are using to make the judgments.

Senator LAUTENBERG. Right.

Secretary PEÑA. Well, in that regard, we do have criteria that we will be applying and have been applying, criteria that exist in ISTEA; obviously, projects that are ready to go, projects that are cost effective, et cetera. And so those are a bit—

Senator LAUTENBERG. So that will establish a rank order.

Secretary PEÑA. It will eliminate some projects, as opposed to those that will make the final cut, but, once we have them listed on the final cut, those will not be prioritized. I think I am answering a different question.

Senator LAUTENBERG. OK. So we are saying that by category, by grouping, we will establish an order for important or priority groups and eliminate those that do not meet the standard for support from the Department.

Secretary PEÑA. That's correct, Mr. Chairman.

PROCUREMENT PROCESS

Senator LAUTENBERG. Mr. Secretary, a question of procurement at DOT is one that has been discussed fairly frequently, but doubt still remains as to whether the procurement process is exactly where it ought to be.

Both FAA and the Coast Guard have had problems in recent years procuring major systems: ships, radar, and communications equipment. We have heard that one of the underlying causes of the schedule slippage experienced during the acquisition of major systems is the voluminous set of procurement regulations that agencies must comply with. What is your view of that assertion?

Secretary PEÑA. Mr. Chairman, first of all, this is a high priority of mine. I have made it a priority, and I raise this issue regularly within the Department. I think there is some truth to your comment.

We have, internally, tried to adjust certain criteria in a number of ways. For example, changing the thresholds that require oversight decisions prior to acquisitions, so that when they are minimal in amount, they do not require 15 people above a certain level to approve a program or an acquisition which does not require that kind of oversight.

In addition to some of the regulations that are in place and looking at those and making sure that they achieve the objective for which they were adopted, we started, in January, a new process. The acronym is MAPP. And we now have a coordinating group in the Department that reviews major acquisitions.

Every agency that comes in for a major procurement project has to be very specific about its needs. It has to have a very specific timetable on how it is going to move through this acquisition program, very specific goals with respect to costs, et cetera.

I think we are making some improvement. In fact, I am confident we are making some improvement. Probably the best example of that is the AAS system—the best example in terms of the problems.

Senator LAUTENBERG. The problems.

Secretary PEÑA. Yes; that's right. But the good news is that Joe Del Balzo—and others in the FAA—are putting their arms around that, have come up with a new schedule, and have elevated the importance of that project in the Department and also with the contractor.

And, in fact, he advised me last week that the new timetable that was set out, the first one we were supposed to achieve, that we actually beat that timetable.

If we can continue that over the next several years, obviously, we will be thrilled, but this is an area where we are going to spend a lot of time and attention to make sure we do a much better job.

Senator LAUTENBERG. Yes; because the question that arises, I think, fairly frequently, that is least understandable is what happens after contracts are issued? After all of the specifications are in place, what happens with the delivery of the material? There is slippage in there.

I assume that your review will not only be an evaluation of the program in terms of its efficacy and its priority, but also what happens between the time that a contract is let and the time of the delivery of either the service or the product. That is particularly obvious as we talk about the AAS system.

That is one that someone ought to get—as you described Del Balzo's feeling, getting his arms around it—but it is almost impossible to comprehend how something can slip that far behind. It seems to be an ongoing problem. And I am glad to see that you are focusing some of your attention on it.

TRANSIT NEW STARTS PRIORITIES

Before we go on, I want to back up to the FTA question that I had asked you about the prioritizing. You described a system whereby, essentially, projects are grouped to see if they meet a criteria that you or the Department feels meets the test of urgency and importance. Is that correct?

Secretary PEÑA. Mr. Chairman, I think I was responding to your question. Let me start again. What we have done—

Senator LAUTENBERG. The one thing that I want to be certain is clearly understood is that when we look at rankings or priorities, we are always going to be short of funds necessary to move these problems along, so some prioritizing has to be done.

If I understood you correctly, you said that the rank, specifically, was not part of a program. Rather, categorizing these projects, according to some degree of importance, would allow us to take care of the funding or to put the projects in the loop for funding.

Was that the message that you were conveying to me in terms of a response that said we will group these things? There are certain yardsticks that must be used to measure the value of the program or its ability to fit into the Department's criteria.

Secretary PEÑA. Let me try it again, Mr. Chairman. I apologize for that. Let me not use the word "grouping." Let me use the word "criteria."

We have all of these requests. We have a set of criteria that we use to apply to those requests. Some of those proposals will not meet the criteria, will be excluded, will get zero funding. The others that meet those criteria will be put on the list.

Once they are on the list, however, there is no prioritization among those. We are supporting all of them to the amount of funding that we have included in the report.

So that is the process that we are using. And I do not think it includes grouping, but I think it gets to your concern. And that is, what are the criteria that are being used to make the basic decision, as you say, no, to a certain proposal, and you say, yes, to others?

Senator LAUTENBERG. Right, but there has to be some way of measuring the program requests that we get, in terms of their need, their importance, and their contribution to the transportation system of a particular area. Some of that probably includes meeting some of the air test requirements. Some depend on the availability of local funding, et cetera, in support.

Secretary PEÑA. Right.

ALLOCATING NEW STARTS FUNDS

Senator LAUTENBERG. So what do you do to say, "Among the projects we have looked at, these look like the ones that are best qualified to get Federal funds"? Is there not a specific ranking once you meet the criteria for the first part? Do you then just put them all together, and some how or other we have to determine what kind of funds are going to be available?

And if we start with projects in the order of their priority, could one program absorb all of the funding that is available? How do you make those judgments?

Secretary PEÑA. I understand, Mr. Chairman. I do not have a specific answer to that question. I have just had a couple of meetings on this. And I can tell you that the way I have looked at the projects in that report is in their totality.

Senator LAUTENBERG. Yes.

Secretary PEÑA. Looking at the amount of funds we have and obviously trying to fund as many projects as we can, but unless my able assistant here can answer your question—

Senator LAUTENBERG. Yes; please feel free to chime in.

Ms. COLLINS. First of all, we have a limited pot of funds—

Senator LAUTENBERG. Right.

Ms. COLLINS. Total funding is \$657 million. We have existing commitments we must meet; the projects that have full funding agreements—

Senator LAUTENBERG. Right.

Ms. COLLINS. Also those projects that are likely to be ready for full funding agreements in this year or in 1994. For all of those other projects that are in various stages, not yet to the full funding agreement stage, we need to make sure that they really are ready to go.

We do not want to fund projects prematurely. We will also look at cost effectiveness as a criterion, such as the cost per rider; look at local support; how the project fits into a local transportation plan; and how strong the local commitment is—

Senator LAUTENBERG. To support it.

Ms. COLLINS. And also environmental and congestion factors.

Senator LAUTENBERG. OK.

Secretary PEÑA. Mr. Chairman, I am sorry. I did not introduce Kathy Collins from the—

Senator LAUTENBERG. We know that in an assignment like yours there are people with expert knowledge and professional experience that you call upon. So, Ms. Collins, we are happy to have you here. We knew that you were not just sitting there as a spectator. So we invite you to join in whenever it is necessary.

USER INPUT FOR PROCUREMENT DECISIONS

Mr. Secretary, let us conclude our discussion about procurement, and then we will call on our distinguished colleague, Senator Stevens, who has just joined us.

As we discussed the regulations and the process for procurement, I want to give you an example.

GAO recently reported that only 3 of a sample of 25 FAA missions need statements had incorporated any organized user input. And now, in light of what we know about the utility of satellite technology, many of the originally planned navigation systems could be obsolete.

Does FAA need to retrospectively review the mission needed for some of the acquisitions already in process? And, if so, what do you plan to do in that connection?

Secretary PEÑA. Mr. Chairman, we have started that process with the AAS system, where we have sat down with a wide variety of users to get their input, as Mr. Del Balzo did, to develop the next set of timetables and schedules for the AAS system. And that was very helpful.

One of the questions, for example, that came up was, are we going to be able to take advantage of, for example, the GPS system much more quickly than the program had anticipated 10 years ago? The answer is, yes.

And I think we can find a way to skip a part of this program that had been anticipated 5, 6, 7 years ago, given new technology and the rapidity with which that technology is coming on board, but that came out of that feedback from the users.

So I personally think it is a very good idea to constantly be sitting down with the users. After all, they are the ones that are going to make this program work or not work. And I think we have started that with the AAS system. I will talk to Mr. Del Balzo about continuing that with other programs the FAA has.

Senator LAUTENBERG. Thank you. Senator Stevens, welcome. Do you have some questions for the Secretary?

STATEMENT OF SENATOR STEVENS

Senator STEVENS. Mr. Chairman, we have another meeting going on, the Defense Appropriations Subcommittee, Mr. Secretary. I have been there. And I am sorry I have not been here for the full presentation of your statement.

PROPOSAL FOR A NEW FERRY IN ALASKA

I am here to tell you about a proposal that is going to come to you. As a matter of fact, I would like to give you a copy of it.

Alaska's situation is that although we are more than twice the size of Texas, which has about 300,000 miles of roads, we have about 12,000 miles of roads. We have many, many more miles of travel by our people and by tourists coming to Alaska on Alaskan Marine Highway, but we also have the situation that we have a State that has suffered the worst oilspill in the United States.

And it still has at least, and will have for many years to come, more than 2 million barrels a day of oil going out of our ports.

The State has come up with a concept now of building a new type of ferry that would be both one that would serve more automobiles and more passengers over longer routes. We have one-half of the coastline of the United States in our State.

But it would also be capable of serving, in the event of another oilspill—God forbid that we get another one of that size, anyway—but it would be a command vehicle for dealing with catastrophes at sea.

Several of our tour ships have suffered. We had one that caught on fire. We had another one that had a collision. And we really believe that we need an emergency oilspill response vessel, as well as an emergency crisis vessel for at sea.

None of the existing ferries have that capability. So the State has come up with a new concept now of a ship that would be built in the United States, of course; an all-American ship to deal with the new standards of pollution at sea, of transportation and of dealing with the possibility of prices, as far as our tour ship activities in our waters.

It, however, means that we must call on you, Mr. Secretary, to see if some of that discretionary money you have available might be used in this concept.

It will replace, incidentally—as my staff just reminds me—a ferry that is very old. It is 30 years old. It is getting dangerous. And it has reached the end of its useful life.

I would hope that I could give you this copy of the proposal. And I know the Governor of our State wants to come visit with you—Governor Hickel—about this proposal, but I wanted to see if we could just have a discussion as to whether or not this is something—I know I cannot ask you to make a commitment, but those of us who are using ferries rather than highways—and that has been the decision in southeast Alaska.

You know, we do not connect our islands in southeast Alaska. The whole archipelago is connected only by ferry. We have—as a matter of fact, our capital city has no road connection to the rest of the State. It is only by ferry.

And our connection for that whole area to the south 48 States is only by ferry, other than by air. We have air transportation, of course, but we have no surface transportation other than the ferry system.

What we need is a new concept of dealing with ferries in a State that is as unique as ours. And I would be hopeful that you would be willing to review this. And maybe we could set up some sort of a meeting with our Governor and your people to see if we could pursue it.

Is that a proposal that I could get your cooperation on, Mr. Secretary?

Secretary PEÑA. Senator, we would be happy to receive the proposal. Let me just generally say that, if you look at the ISTEA moneys, those funds can be used for ferries, as long as they are connected in some fashion to a highway system of some kind.

So I do not know if that would work in this particular case, but let me answer your question very specifically.

We are looking at this whole notion of intermodalism in the Department and trying to give it a renewed emphasis. And it could

be that without understanding all of the implications of this ferry system, et cetera, and how it connects to other systems of transportation in your State, that that might be one of these new creative approaches.

Obviously, we cannot commit on funding now, but we would be happy to sit down with the governor and talk about this.

FUNDING FOR UNIQUE FEATURES OF THE FERRY

Senator STEVENS. I understand we could use the ISTEA for the ferry portion of it, but I do not think we could use the ISTEA money for the oilspill response or the crisis-at-sea part of it. And that is where we are looking for a sort of a unique experiment.

You know, the shipbuilding portion of our economy is not that well off with the decrease in construction of naval vessels, also. This, I am told, would provide about 1 million man-hours in employment for some shipyard over a period of 2 years to build a rather unique vessel.

There is no such vessel in the American fleet. I do not know of another one worldwide, as a matter of fact. But we have those three demands. And we would like to find somebody to work with you to see if we can have an experiment to see if this concept would work.

And I will ask my staff, now, to give you this. This copy of the report was just printed up by the State of Alaska. And I would appreciate your consideration of it.

I am also here, sort of, touching the subconscious of my good friend from New Jersey, as we are looking at this, because it may be, if you do agree, we will have to find the money in one of these years to continue that on. [Laughter.]

It can't be used for fishing. So it is not a pleasure craft, but we could arrange for each of you to come up and see the waters that it would go through one of these days. If you would like to do a little marine research, we could handle that, too.

Senator LAUTENBERG. Alaska certainly is a beautiful, impressive place. As you know, I spent some time up there immediately after the *Exxon Valdez* spill and also a few months later.

Oddly enough, Senator, New Jersey, just across the Hudson River from New York, is now successfully using ferry systems that had been abandoned years and years ago to carry part of the commuting traffic.

Obviously, when you talk about Alaska, you are not talking about those short distances. Having seen the expanse of your State, I would guess that all modes of transportation have to get some consideration.

The State of Washington has been a long-term exponent of ferry service.

Senator STEVENS. Commuter ferries, they use a great many of them there.

Senator LAUTENBERG. Yes; it makes the area function. Certainly with the budget shortage and with, perhaps, some help from you, Senator Stevens, and some of your colleagues, we might be able to break this impasse. [Laughter.]

Senator LAUTENBERG. In order to get money moving along.

Senator STEVENS. I thought, perhaps, that might come up, but. [Laughter.]

And I can assure you that if you see the offer we had made, that it is highway money in each one of those. I have seen to that, Mr. Chairman.

So I know you know how much highway money means to us, in spite of the small amount of roads we have, because we do use a portion of it on the Marine Highway. It is most important to us.

But I do thank you, Mr. Secretary. Again, I urge you, as I did at your confirmation, to, as early as you can, plan a trip to come up and see our State. It is a tremendous domain for your Department. I am sure you will find more and more facets of your Department that concern Alaska directly. And we would be very much pleased if you could find a way to come up soon.

Secretary PEÑA. I will try, Senator. I have a commitment to the chairman to go to his State. And as soon as we can arrange that trip, hopefully, we can take a trip to Alaska.

Senator STEVENS. We would be delighted if you would bring him along, as a matter of fact. [Laughter.]

Thank you very much, Mr. Chairman.

Senator LAUTENBERG. That is fairly easy persuasion. It depends on the time of the year.

Senator STEVENS. He does have an airplane, do not forget. [Laughter.]

Senator LAUTENBERG. We just got rid of it. [Laughter.]

Before your arrival, Senator Stevens, we got rid of the airplane. [Laughter.]

We may have to reconsider.

Senator STEVENS. You got rid of the airplane.

DOT AIRCRAFT

Senator LAUTENBERG. No; we got rid of excessive use of airplanes. And the air force that is employed by DOT, 300 in number, is getting a thorough examination.

Senator STEVENS. Well, let me speak up for that, because when we got into this oilspill, it became apparent how much we use the expertise of our national government people, particularly from NOAA and the Coast Guard, to deal with oilspills throughout the world. And I think that that is a civilian fleet that has a—really, it has not been abused.

I have been on this subcommittee for many years. And I have watched the development of it. And I do believe it is absolutely essential.

One time, when we had that oilspill going on, you will have to remember there was an oilspill in New Jersey, there was one in Texas, and there was another one going on somewhere else in the world where our—well, and there was one going on down at the Persian Gulf at the same time. And the people we needed up there in Alaska had to do their job elsewhere and come back to Alaska, because of that ongoing problem.

I think that those aircraft were absolutely indispensable to doing the tasks that our Government is committed to, in terms of marine pollution.

And I would urge you to keep that in mind as you think about reducing or in any way limiting their use, because I think it is absolutely essential that those people get where they have to be. They cannot get there by schedules. They have to go on emergency basis.

And they are stationed throughout the United States. One part of it is in New Jersey. Part of it is Seattle. Part of it is down in—
Senator LAUTENBERG. The gulf.

Senator STEVENS. In the gulf. And they have to go around and pick up the experts that are available for each place and then get where they have got to go quickly. So I think it is absolutely—

Senator LAUTENBERG. We are determined to preserve the facility necessary for emergency response. The Secretary flew commercial on a trip he just completed, coming back from London. Frankly, I think that is a good example.

What we have to do is get rid of the kind of travel that neither the taxpayers, nor I, nor many of our colleagues, including you, I'm sure, understand in terms of expense, compared to competitive travel with commercial airlines. But we want to preserve the options for the quick dispatch of emergency equipment or personnel wherever it is required. The Secretary is committed to that, the Coast Guard, et cetera.

We ought to be able to have a reserve component for air travel included, perhaps, in the military. We are talking about cargo equipment and that kind of thing, but I assume there is no intention to get rid of those aircraft that might be employed for emergency oilspill response and that kind of thing.

Secretary PEÑA. That is correct, Mr. Chairman. And, Senator, let me clarify this issue, because this issue has come up, as you have raised it.

DOT REVIEW FOCUSED ON NONESSENTIAL AIRCRAFT USE

Our goal is to keep the aircraft critically necessary to the mission of the Department. I fully understand that the overwhelming proportion of the aircraft are needed for FAA's mission, the Coast Guard's mission, NSTB and other emergency services.

What we are looking at are the nonessential users of the aircraft. And I do not want to get into particulars here. I am not intending to embarrass anybody, but there have been cases in past years where the planes were used for noncritical purposes at significant cost to the taxpayer. And the President has asked us not to do that. And so, for that reason, I fly commercial coach wherever I am flying.

Obviously, if we have a disaster someplace and I need to use that airplane, I will use it, but I am talking about normal trips that do not require the G-4 at substantial cost to you and to the taxpayers, where I can catch a commercial flight.

So that is what we are looking at, but it will not affect the critical missions of the Department, particularly, the emergency responses that we need in the Department.

Senator STEVENS. I understand that, but I also believe that the G-4's potential to put a person in your position into two or three areas of critical responsibility in the same day, should not be overlooked. And I am not certain that I would limit the use of that plane to crisis.

I think when you are talking about going overseas, obviously, there is a pool of aircraft in Europe that you could call on that are there from our NATO forces. If you go into the Pacific, you can go and call on some theater aircraft over there. Those long distance overseas flights are different than those that I conceive here in the United States.

When you start going out to where you and I come from, the west, you cannot drive. And I will tell you, the frequency of commercial aviation goes down considerably in the off period. Whether it is up my way in the wintertime or down into the desert country in the summertime, they are not very frequent.

And I find that the cost of a person, such as yourself, in terms of the amount of work that can be completed on such a trip, of waiting for commercial transportation means, in some instances, you are going to wait until the next day or two.

If you want to go—I will tell you what, if you want to go from Anchorage to Adak, you better have your plane, because, otherwise, you are going to stay 2 days in Adak. You know—

Senator LAUTENBERG. When that is on your schedule, Mr. Secretary, please remember Senator Stevens' admonition. Any Adak trips may need some special arrangements.

Senator STEVENS. No; I am serious.

Senator LAUTENBERG. Oh, I am sure you are. The one thing I would like to do, Senator Stevens, is get back to the subject.

One question I would like to ask while the Secretary is here, is why there was a no-defense fund requested for Coast Guard, as has been the custom?

DEFENSE FUNDING FOR COAST GUARD

Here, in the last several years, the Appropriations Committee has provided roughly \$300 million of the Coast Guard budget. These funds are appropriated by the Defense Appropriations Subcommittee, of which Senator Stevens is the ranking member and of which I am also a member. This was done in recognition of the many defense-related activities conducted by the Coast Guard. Last year, the Bush administration requested defense funding for the Coast Guard in its fiscal year 1993 budget.

So, Mr. Secretary, and while Senator Stevens is still with us, why are there no requests for funding from DOD for the Coast Guard?

Senator STEVENS. Mr. Chairman, I can almost answer it for him, but go ahead, Mr. Secretary.

Senator LAUTENBERG. Well, we will give him a chance, first. And then you can make the corrections.

Secretary PEÑA. I may need a little help from Kathy Collins here, also. But it has to do, Mr. Chairman, with the single cap that we have for discretionary spending, but let me have Kathy talk about that more specifically.

I can tell you that as we look at the Coast Guard's budget, the Coast Guard, as you know, made some cuts, both in the civilian side and in the defense side, as respects its staff, but it—do you want to elaborate on this?

Ms. COLLINS. In last year's budget the administration itself requested money in the defense budget. That was because of the sep-

arate caps. Doing that was a way of freeing up room within the domestic cap. Now that we have a single cap, there is less compelling reason to do that. Also, I have to say that overall we have always sought full funding of our needs within the transportation budget.

Senator STEVENS. Now, can I get into that?

Senator LAUTENBERG. I'd be happy to have your response, because we do not have the capacity to fully fund the needs of the Department; \$300 million is a significant portion of that. I think everyone is aware of the growth in Coast Guard responsibilities, whether it is monitoring dumping, oilspills, or navigation.

Certainly, Senator Stevens is aware of the value of service that the Coast Guard performs. And if we had sufficient funds to take care of the Coast Guard's needs and the rest of our programs, then I would say fine.

Senator STEVENS. Mr. Chairman, I started that when I was chairman of both the Defense Subcommittee of this committee and the Surface Transportation Subcommittee, dealing with, basically, at that time—it has changed a little bit, but ocean transportation.

MILITARY FUNCTIONS OF THE COAST GUARD

The Coast Guard is a paramilitary agency. It has uniforms. It has requirements for drills. It has almost a military aspect, although it—and in wartime, it is automatically a military agency. So it must have a military readiness. They must have training in use of firearms and of boarding vessels at sea, as witnessed what we did in the Persian Gulf.

Senator LAUTENBERG. They are still there.

Senator STEVENS. And I took the position and I still take the position—and contrary, ma'am, to what you say—the cap is immaterial, because we were taking defense money to meet defense costs of a civilian agency.

And I fought with the Reagan and Bush administration for a series of years. We did that for 9 years, by the way. Last year we finally got them to put it in the budget, to recognize what we had been doing for the previous 8 years. Now, when you examine the situation that exists today, it is even worse.

We are calling on the Coast Guard for more semimilitary or backup for military activities and backup for other agencies, such as DEA, in terms of their drug activities. They are the law enforcement entity in the Pacific, enforcing the ban on drift nets.

Up my way, when I am talking about Adak, between Anchorage and Adak, there is 2,000 miles. There are no civilian hospitals in that area. There are no civilian helicopters that have got any range at all.

The Coast Guard is not only the emergency medical evacuation organization, they are the midwives. They deliver a lot of babies. They perform functions out there that people just do not understand. They could not do it without military equipment. They are using long-range helicopters. They are using high-speed interceptor type vessels that are built with the military specifications, because of their wartime role.

And I think it is unfortunate, now, we are going to have to go back and fight this battle, because it took us time, all of that time,

before that became a budgeted item in the defense bill to recognize the military costs of the Coast Guard.

And when we have to recognize those needs in this budget that the chairman oversees, it means we have to cut out other things that are vital to your Department, to the States that do not have any ocean problems.

And I think that we are going to have to find a way—and I am going to tell you right now, I am going to find a way to put it in the defense bill again. It has to come out of defense money, but the trouble is it becomes one of those critical items that causes Presidents to think about vetoing defense bills, because we have transferred money to a civilian activity.

I do not think this is really an activity. We need your advocacy to get it back in. I think it should be in. Every year there should be a recognition of the defense costs of the Coast Guard in the defense bill.

And the defense bill is coming down very rapidly. So it is harder to do now without Presidential approval, but we will do it this year. I will tell you that, Mr. Secretary. It may not be the \$300 million—

Senator LAUTENBERG. Just as a reminder, the Coast Guard is helping to enforce the arms embargo against the Serbs around former Yugoslavia. If that is not a military function, I cannot imagine what is.

Senator STEVENS. Because of our strained interpretation of posse comitatus and whether we should use civilians to deal with civilians or military to deal with foreign civilians, and I really think that we stretch it a little bit, but we are putting a great burden on them. And it is coming right out of their ability to do what they should do.

DEMANDS ON THE COAST GUARD

Let me close this, Mr. Secretary. Just so you know, my son is in town right now. I had breakfast with him this morning. He is captain of a 140-footer out of Dutch Harbor. He lives in Dutch Harbor most of the time. And on three—no, two occasions, now, he has gone out with three boats. And his boat has been the only boat to come back.

They are beyond the search and rescue capability today of the Coast Guard, because there is not enough equipment to cover Dutch Harbor. And yet one-half of our fishing fleet operates out of Dutch Harbor. So the demands on this agency that you oversee is going to be even greater.

There is more fishing going on now in the north Pacific than any other waters of the world. And that, of course, needs to be expanded.

So, I am belaboring it, Mr. Chairman.

Senator LAUTENBERG. Maybe we ought to try to devise a system for transferring functions, but if the functions are going to be there, then the funding ought to be there.

Senator STEVENS. Canada budgets the Coast Guard from the military budget in wartime and from civilian budget in peacetime, but they transfer the funds, too. We do not. That is what we are

trying to do with the \$300 million. It takes \$300 million a year, minimum, to do that job.

Secretary PEÑA. Are the Canadians a uniformed force—is the Canadian Coast Guard a uniformed force?

Senator STEVENS. No; not in peacetime.

Senator LAUTENBERG. But ours is continually out as part of the coastal defense mechanism of this country.

Thank you very much, Senator Stevens. You are welcome to stay, if you would like.

FAA FACILITIES AND EQUIPMENT

I want to discuss some of the F&E requests for FAA. The FAA requests for facilities and equipment grew from \$260 million in 1982 to \$2.4 billion in 1993.

Over approximately the same period, aircraft operations grew only 5 percent from \$127.6 million in 1982 to \$134 million in 1992. Despite diminishing air traffic over the last 2 years and the overestimate of air traffic growth, FAA continues to project growth in aircraft operations during the nineties and beyond.

Why does the FAA continue to ask for an increase in its F&E budget, given that the air traffic growth has been substantially less than originally projected or expected?

Secretary PEÑA. Mr. Chairman, I think, first of all, there is not a total connection between air traffic projections and F&E requests.

Generally speaking, most of the F&E requests that you are seeing now are to fund projects that were approved some time ago. And, sir, we are simply ensuring that we fully fund them, but let me assure you that given the significant budget constraints we have for the FAA—and they are significant, just as they are for the Coast Guard—that we will review these expenditures very carefully.

In addition to that, it is our view that the aviation industry in the country will become stabilized. We had 15 new entrants into the airline industry last year. One airline is expected to come out of bankruptcy very soon and, perhaps, another.

So we do see things improving over time, particularly, if we can open up these international markets. But I hear the concerns you have raised, Mr. Chairman, and we follow it very carefully.

Senator LAUTENBERG. Well, I raised concern not as a criticism, but because one need not necessarily connect the movements of passengers with the expenditures by FAA for facilities and equipment.

The fact is that that system has not kept up with either the technological pace available, nor the requirements for a more efficient system. Some part of it has to relate to passenger activity, because that is where much of the income is derived. I would like to see us continue to invest and finally catch up, because I think we are still delinquent when it comes to comparisons to other countries in terms of systems for the movement of traffic.

I am amazed, Mr. Secretary—and I fly a lot out of Newark, which is the primary airport for my use—how often delays exist when the weather is clear and when it is an odd time of day.

It is not the 7 to 9 o'clock period in the morning or the 4 to 6 or 7 o'clock period at night. I just cannot understand how it is still so backed up.

We are told, "Well, it is controller activity, air traffic control, et cetera, et cetera."

There is something awry there. I hope that as you pursue your responsibilities you examine that very closely and connect our investments with improvements in service and safety.

Is it anticipated that the F&E budget is going to level off over the next few years, when the projects in the original national aerospace plan come to fruition?

Secretary PEÑA. I cannot answer the question specifically, Mr. Chairman, in terms of leveling off. I had better review that before I say it is going to level off. I think you are going to see continued increases over the next several years or at least demands for increases in expenditures.

AIRCRAFT NOISE

Senator LAUTENBERG. I would like to raise another issue with you to which my constituents are sensitive. That is the long-time subject, aircraft noise, generally, but particularly in New Jersey.

Now FAA is in the process, and has been for as long as I have served here, of preparing, in retrospect, an environmental impact statement on the expanded east coast plan.

The final EIS was to have been issued before the end of calendar year 1992. If I sound a little bit fatigued with it, I truly am, as are the people who live underneath these approaches in New Jersey.

Do you know what the status is of the environmental impact statement for the expanded east coast plan? What are the expected completion dates of the draft and the final statements?

Secretary PEÑA. Mr. Chairman, you are absolutely correct about the delays here. And let me say, before I answer this question, that one of my other priorities in the Department is to ensure that we, on a more timely basis, make decisions, issue regulations, and—in particular, where we are responding to a request from the Congress or more than that, a mandate from the Congress—that we act quickly.

I put enormous pressure on the Department to do a better job of being timely in all of these areas, because I look at the regulations that we have that are backlogged in the Department. I am disappointed with the backlogs.

And I want you to know that we have unofficially a regulation czar in the Department who is to ensure that these regulations are put out on a timely basis. With respect to the draft EIS, in March of this year, the comment period was reopened and extended to June 14. And that was at the request of Governor Florio, and also the Port Authority of New Jersey and New York.

The additional time was also for a group called The New Jersey Citizens Against Aircraft Noise to obtain technical assistance to review and assess the draft environmental impact statements.

So, hopefully, that will be the last extension of the comment period on the draft EIS, so that we can finally complete it.

I will commit to you, Senator, that we will do it as quickly as possible, because I am also very sensitive to the noise issue, having gone through noise problems in Denver.

I know how important they are; how difficult noise issues are for communities and the extent of litigation that is brought against airports and cities, generally. I know this is of particular concern to you. So we will do our very best to make this the last time that we extend this comment period.

TRUCK SAFETY

Senator LAUTENBERG. I look forward to that day, Mr. Secretary. I do not know whether you had an opportunity to see an article in the Sunday Times 2 weeks ago, entitled, "Jackknifing" or "Jackknife."

It portrayed, in very dramatic terms, what has happened with truck safety, particularly concerning trailers and long-bodied trucks, trailer trucks, and the devastation that is created in case of an accident.

Thank goodness it does not always result in a fatality or serious injury, but it does often cause tieups in traffic. You hear a report of a jackknifed trailer on some road with traffic backed up 16 miles. We will furnish your Department with a copy of that article, if you do not already have it.

Truck safety is an area in which the subcommittee and I have voiced concern for several years. As we pointed out in our committee report 2 years ago, while medium and heavy trucks comprise only 3.2 percent of all vehicles on the road, fatal crashes with medium and heavy trucks represent 12 percent of all highway deaths.

For the last couple of years, our committee has been encouraging DOT to move quickly to require antilock brakes on heavy trucks. The issue has been around since 1969. Yet the last two administrations have brought us delay after delay. And finally, we were required to mandate a regulatory decision on this issue in the ISTEA legislation.

When, Mr. Secretary, do you think we can say that we will have a final rule requiring antilock brakes on heavy trucks?

Secretary PEÑA. Mr. Chairman, I will not repeat the comment I made to the previous question about making this whole area a priority, but I am advised that NHSTA expects to publish a final rule by the end of the calendar year, with an effective date beginning 2 years later. That is the current projection, at least.

An advanced notice of proposed rulemaking was published in June 1992. And they are currently preparing a notice of proposed rulemaking.

I will focus on this and ensure that we meet our timetables, that we do not delay, that we not once again postpone tough decisions, and that we try to respond to your concerns.

Senator LAUTENBERG. Antilock brakes are already required on newly manufactured trucks in the European Community and on most heavy trucks in Japan. Jackknifing incidents involving heavy trucks have been greatly reduced in those two regions.

The question, again, is how long will we have to wait until we have the same protection standard they have?

The trucking industry has endorsed a requirement for antilock brakes for new trucks, but not until the year 2000 for tractors, and 2002 for trailers.

Given the results of NHTSA's recent report, which indicates that utilizing antilock brakes will only add, roughly, 1 percent to the maintenance costs on truck fleets, is it reasonable to wait until the year 2000 to require antilock brakes on heavy trucks?

That is part of your study. I would ask you to respond to that question when you get back to us on the whole thing.

RADAR DETECTORS IN TRUCKS

In the appropriations bill for 1992, I included a provision mandating that the Department initiate a rule banning the use of radar detectors in trucks. The Department published a proposed rule on this issue over 15 months ago. The comment period has been closed for 1 year, and we have heard nothing.

What do you see as a target date for a final rule banning the use of radar detectors in trucks?

It is an urgent requirement. One need only get out on our major highways and see these trucks bearing down.

If you look in your rearview mirror and see a truck too close for comfort, it makes you realize that not many people travel below the speed limit. The fact is that we often see excessive speeding on our roads. Radar detectors are one way for these people to get past the law.

When might we see a final rule?

Secretary PEÑA. Mr. Chairman, I have been told that there were over 2,000 comments that were filed during this process. The comment period ended on May 26.

As with the other rulemakings, we will persuade and push the appropriate people to make a decision as quickly as possible.

Senator LAUTENBERG. Do you have any idea where those 2,000 comments came from? What portion of our society?

Secretary PEÑA. I would have—

Senator LAUTENBERG. What profession?

Secretary PEÑA. I cannot answer. Mr. Chairman, you probably have a good suspicion as to where they came from, but the point is that they are filed. And we have an obligation—

Senator LAUTENBERG. You will follow through.

Secretary PEÑA. That is right.

DEFECTIVE TRUCK BRAKES

Senator LAUTENBERG. There is the issue of defective brakes under truck safety. According to the FHA, one out of every four trucks inspected by motor carrier inspectors is cited for defective brakes. Trucks with mechanical defects are twice as likely to be involved in accidents as those that are defect-free.

Mr. Secretary, I particularly think about it when I travel on Route I-70 outside Denver and through the State of Colorado. As I see the runaway ramps that are provided, I am reminded of the danger of traveling from one altitude to another.

Some of the hills and inclines result in high-speed travel, unwillingly in many cases. If we know that the companies and the

drivers of these vehicles are responsible, there is some assurance that they can deal with the possible hazards.

What steps do you plan to take to improve compliance with the brake requirements?

Secretary PEÑA. Mr. Chairman, I am happy to say that we are working very closely with a number of State agencies to ensure that we have more inspections. And, in fact, the amount of inspections has increased over the last several years.

In addition to that, we are trying to encourage uniform penalty standards with respect to drivers who are pulled over. And by continuing to work very closely in these areas, I think we will do a much better job of ensuring enforcement in this area.

So it is a serious problem, particularly in States like Colorado, where you have a 7-percent grade and a truckdriver who is driving through there who is unaware of the dangers, does not know how to downshift or slow down as you are supposed to. And you are right, they are off on those runaway ramps and, hopefully, not ramming anybody as they go up the ramp.

So it is a serious issue. And we will continue to work with the States to secure enforcement in this area.

TRUCKDRIVERS' HOURS OF SERVICE

Senator LAUTENBERG. We have talked about the equipment requirements, antilock brakes, and current brake repair, but there is also a question about exhaustion with drivers.

It has been shown that drivers who have been behind the wheel for more than 8 hours on interstates are almost twice as likely to crash as well-rested drivers. It has also been shown that there is widespread noncompliance on the part of drivers with the hours-of-service regulation.

Do you have any measures that might improve that compliance?

Secretary PEÑA. Well, Senator, we are going to have to do a little redirection in the Department in this area. As you know, a rule was proposed which would have allowed more extended hours for truckdrivers, which I stopped the first day of my administration.

We are going to have to rethink some of the traditional attitudes that the Department had in this area and make sure that we are on the safety side, on the driver rest side, and not expose citizens to unnecessary accidents because of driver fatigue.

Senator LAUTENBERG. It is quite remarkable to see a bunch of trailers pulled over on the side of the road. It is almost impossible to get the necessary rest if one doesn't stop until 10 or 11 o'clock at night. It is hard to imagine that they could be away from driving long enough to be rested.

I urge that we look to enforcing the compliance with those rules as well.

ISTEA FUNDS FOR INTERCITY RAIL PROJECTS

During your confirmation before the EPW Committee, you voiced support for my view that States should be granted the same flexibility to use highway trust funds for intercity rail projects that they currently enjoy for transit projects.

The State of North Carolina recently requested authority from FHWA to use ISTEA for expanded rail service between Raleigh and Charlotte. Unfortunately, North Carolina's application was denied.

Since you plan to submit new legislation that will amend ISTEA as it regards the maglev prototype program, we also propose to expand the flexibility of the States to use their ISTEA funds for inter-city rail service.

Secretary PEÑA. Mr. Chairman, thus far, we had not focused on that particular part of ISTEA, by way of amendment. I would be happy to look at it. Right now, the program that we have in high-speed rail would not address that particular issue, but, perhaps, it is something we might review.

Ms. COLLINS. If I could just clarify—

Senator LAUTENBERG. You have your own mic there. It might be more convenient.

Ms. COLLINS. The budget does propose to use the trust funds that were made available for maglev. If those are broadened to be also used to finance high-speed rail, then we will have to address the issues of whether the trust fund would provide direct support for rail; like direct maintenance, track improvements, signal improvements.

Currently, the ISTEA funds can be used in situations where improvements are necessary to accommodate a highway-rail nexus, be it grade crossings or other right-of-way pieces.

Similarly, the ISTEA funds can be used for preservation of rail stations, but, in terms of direct support for maintenance, that is a new avenue.

Senator LAUTENBERG. If we are going to give the States the flexibility to make those decisions, we ought to be able to make the funds available to them.

The mission is to provide a balanced transportation network. If providing that kind of transportation facility is one avenue, we ought to take a second look at what we can do to make some of those funds available.

HIGH-SPEED RAIL

You note in your testimony that you will soon be submitting new legislation for the \$140 million you need for high-speed and maglev projects.

This subcommittee held an informative hearing on high-speed rail earlier this year, where we gathered many views in both the private sector and in the railroad industry.

Would that \$140 million be focused on a number of projects or limited to a few high-speed rail projects?

Secretary PEÑA. Well, Mr. Chairman, I cannot give you a final answer, because the policy is still being shaped, but let me share some general thoughts about the approach that we are taking.

Obviously, there were corridors that were identified through a process mandated in ISTEA for special attention or, at least, for focus. We may not want to limit ourselves only to those particular corridors.

We want to look at criteria that allow us to maximize the limited dollars we have here, because even though it is a \$1.3 billion program, the needs are far in excess of that.

We want to look at a number of different criteria, the extent to which there are matching funds, either from the State or the city or the private sector in a particular corridor. And then the traditional criteria: the ridership, population, et cetera.

My goal, Mr. Chairman, is to make sure that, assuming we can get this new initiative adopted, we actually see high-speed rail systems in place. We do not simply want to put out money and then continue to hope that someday we will see them in operation. We really want to make sure that we support those areas that have the most promise in terms of getting these systems up and operational as quickly as possible.

Senator LAUTENBERG. It would seem that the funds are not sufficient to handle the numerous requests that we have. There is a lot of interest in high-speed rail, but, because the technology is fairly limited, perhaps we should focus in a few places where the investment can make a significant difference.

We ought to try to give sufficient funding to the couple or three or four technologies that exist, as you suggest, to find a couple of places to try these things on a serious level. We should invest in them and in the development of the technology necessary for the needs of this country, because we currently look abroad in almost every case.

MAGLEV

Is the maglev technology, for instance, far enough along? Do you have enough knowledge about it at this juncture to say that we should construct a system in the United States in the near term?

As far as I know, there is no operational maglev system in revenue service today. There is a system or two in operation, but they are more in test mode than in operational mode.

Secretary PEÑA. Mr. Chairman, that is a very thoughtful question. And as you know, there has been discussion of having a maglev prototype somewhere in the country. And this is what we are looking at right now, to determine whether or not that is achievable, given the limited funds we have.

The investment in maglev technology is extraordinary on a per-mile basis, \$30 to \$40 million compared to high-speed rail. So, on the one hand, we want to be supportive. We want to advance the technology and the research in the area of maglev. Whether or not we can actually have a prototype operational, in service, is an issue that we are still reviewing.

Senator LAUTENBERG. We know that steel on steel works. One need only go to some of the countries in Europe. France, in particular, with the TGV, has had wonderful success.

We have had the Swedish transit system here, the X2000. I have ridden it. I think you have, too. If you have not, I submit that you ought to try it. It is a wonderful system.

We may have to do some track straightening, where possible, but significant speeds are obtainable with tried and true technology.

I would be the last one in the world to say we should not try something new, but it is a question of how to balance your investment, what the return is and when it comes.

We are joined here by our good friend and colleague from New Mexico, Senator Domenici. Senator, do you have a couple of things that you would like to ask the Secretary?

STATEMENT OF SENATOR DOMENICI

Senator DOMENICI. I am late, so I do not want to impose on the chairman. If I could submit a number of questions. I will. I would like to talk about one program and then submit the rest of my questions to the Secretary.

First, Mr. Secretary, let me say, I was flying over your State and happened into Denver on the way somewhere. I bought one of those rather shabby newspapers called the Sunday Denver Post. I saw you and your wonderful wife featured in it. I assume both you and she have seen it and read it. I brought it home to my wife, and please tell her how pleased we were to see the background information on you and your family and about your role here in Washington.

I think it is now understood, at least on this committee, that the Domenici's and the Hart's—your wife's maiden name—were great friends and that she grew up with our children. I hope everything is going well as you try to stabilize your young family here.

Secretary PEÑA. Thank you, Senator.

Senator DOMENICI. We did that once, with eight, as you know.

Secretary PEÑA. Yes. [Laughter.]

Senator DOMENICI. It was not very easy. You have it much easier with just two.

Senator LAUTENBERG. Senator, are you saying that the Secretary's wife was your child's age?

Senator DOMENICI. Well, I have a daughter. [Laughter.]

Of course, he—we do not want to get into how old he is. [Laughter.]

Or how old I am. We have eight children and our oldest now is about 33 or 34. I think that Mrs. Peña she is even younger than they are. So she is somewhere in the middle of my clan.

AGING AIRCRAFT

Mr. Secretary, in our State there are a number of things that I would inquire about, and I will give you those for the record. I would like very much though to talk about a program in the city of Albuquerque that has to do with aging aircraft, and the science of determining the true status of aircraft as it ages.

There has been about \$7 million heretofore appropriated for a jointly funded program that is being conducted in Albuquerque with the science leader being Sandia National Laboratories in partnership with the Federal Aviation Administration Technical Center.

Let me suggest to you that this aging aircraft, nondestructive demonstration center is about 3 years old. I would urge that you have your highest officials in that area review it carefully.

From what I can find out, it is one of two or three that are going to produce some very startling scientific information about an aging fleet of airplanes that is not only besetting America, but the world.

It is absolutely tremendous to see this merging of science and technology to address aging aircraft. The airlines are very cooperative. We now have a Boeing 737 aircraft that has been purchased that was somewhat aging. It is the demonstration airplane.

Overall, I am very concerned about whether there are sufficient funds in the budget to continue the aging aircraft research in the United States.

One of my specific questions has to do with that, which I wouldn't expect you to know today, but clearly we think that this and a few others like it are very, very important to the future of your Department in terms of staying right on the cutting edge of helping the private sector when it is something that has to be done by Government. This collaboration has to be melded by Government.

Do you have any comments on that?

Secretary PEÑA. Senator, generally, we have about \$22.6 million in the budget for the aging aircraft program, but let me find out more about that particular program in Albuquerque and see where that is at. I can get back to you with more specific information.

DEFICIT-REDUCTION TAX ON MOTOR FUELS

Senator DOMENICI. I would greatly appreciate that. With reference to the highway program and its broadened concept under ISTEA, we are going to come to a point here when we have to do something about the 2.5-cent gasoline tax that expires at the end of fiscal year 1995. The question is: Should it continue? I assume that it is now clear that the administration recommends that it continue, that it be extended, is that correct?

Secretary PEÑA. That it be extended and put into the highway trust fund.

Senator DOMENICI. Correct.

Secretary PEÑA. So that it will not be used for deficit reduction after 1995.

Senator DOMENICI. Right.

Secretary PEÑA. That is a major shift. I cannot recall at what point this came up, but you may recall, Senator, that earlier in the budget discussions, it had been left in for deficit reduction. I was able to convince OMB that it belonged in the highway trust fund.

So, starting in October 1995, the revenue will be put into the highway trust fund. It will be distributed 2 cents into the highway account and 0.5 cent into the transit account to reflect the philosophy and the compromise that was reached during passage of the 1982 Surface Transportation Assistance Act and the 1990 Budget Reconciliation Act.

Senator DOMENICI. Well, I want to ask a little more precise question. Are you aware of the Byrd rule?

Secretary PEÑA. Yes, sir.

Senator DOMENICI. What is the situation going to be, then, with reference to the way you choose to handle the 2.5-percent gas tax versus the triggering of the Byrd rule with reference to transportation allocations?

Secretary PEÑA. Senator, and I am giving you an answer based on our current estimates of what we think the revenue will be and, of course, as you know, these estimates change year by year, but

generally speaking, we should be OK with the Byrd rule, at least, until 1997, perhaps 1998.

We recognize the reality of the fact that, before that time, the administration and the Congress will have to go about rewriting and thinking about ISTEA 2 or whatever we are going to call it.

From a practical standpoint, we are going to address the long-term funding issue before those years come, but that is the general situation that we are in right now with the—

Senator DOMENICI. My understanding, Mr. Secretary, is that the Congressional Budget Office has projected, without the extension and dedication of that 2.5 cents to the highway account, the Byrd rule would be triggered by the end of 1994. Is that what you have?

Ms. COLLINS. If I—

Senator DOMENICI. Yes, ma'am.

Ms. COLLINS. Without the transfer, yes. That is exactly right. And that is why we were so eager to get the revenue back into the highway account.

Senator DOMENICI. Right. Correct. But now CBO estimates that if—with the extension and the allocation of the entire 2.5 cents to the highway account, the Byrd rule would not be triggered until 1997. Is that what you are counting on?

Ms. COLLINS. With the 2 cents, and our current revenue projections, we think we can make it through the authorization, but it will be very close to the edge. And we would have to watch that closely.

Secretary PEÑA. And let me add to that, Senator, because there has been a lot of discussion about how we separate the 0.5 cent from the 2 cents.

Senator DOMENICI. Correct.

Secretary PEÑA. Recognizing that there is the potential of a problem in the out years, we have also recommended language to the effect that in those out years, if there is a cash problem in the highway account, the highway account would be able to borrow from the transit account, because the transit account will have a significant surplus in the out years.

So I think we have built in language which allows us to have what I call an honest budget on its face, which allows for a contingency in the event that we have that problem.

Senator DOMENICI. Mr. Chairman, I have no further questions. That one concerns me, because I really think we would have a tough time if the Byrd rule is triggered. You know how hard it was to get the bill.

Senator LAUTENBERG. Yes; I share your concern, Senator. There is one thing that I want to make sure of, because of the pace of drawdown, where the highway account has been faster than the transit account. We must not automatically assume the need is not there, but the attention that you are calling to it is certainly appropriate.

I, for one, think that we ought to preserve that dedicated fund. People are willing to have that. We ought to look for budget deficit reduction from other areas.

Senator DOMENICI. Thank you very much.

Senator LAUTENBERG. Mr. Secretary, I know that you are kind of in a rush. I want to ask a couple of quick questions about Amtrak. Then we will be able to adjourn.

AMTRAK SUPPLEMENTAL

Amtrak has requested a \$57.5 million supplemental appropriation for the current fiscal year, because of their operating shortfall.

Last year was the first year in over a decade in which Amtrak saw a real decline in passenger-related revenue. They were required to take out a short-term loan to have enough cash on hand for the last couple of weeks of fiscal year 1992.

Revenues for the current year are well below Amtrak's past projections. Has the administration given any consideration to the request for a supplemental for Amtrak's operating expenses for the current year?

Secretary PEÑA. Mr. Chairman, I attended my first Amtrak board meeting, I think, 2 months ago, when this subject came up and the issue of a supplemental was discussed. As I understand, the new figure for the supplemental is between \$30 and \$67 million.

I think the earlier estimate was that it would be in the range that you had discussed. However, we want to see what the revenue looks like in the early part of next month.

And at that time, we will have a better sense of how well Amtrak is doing. At that point, I will be able to give you a specific answer on whether we are going to support that supplemental.

I must say that everyone is delighted with the progress that Amtrak has made. I think we would realize that, if there were easy decisions that Amtrak could make, they have been made, and now they are down to very tough decisions. In addition to that, we think that the funding that we are recommending on the capital side will be able to generate more revenue for Amtrak.

So we need to weigh all of those issues, but I will be taking a position one way or another sometime next month.

Senator LAUTENBERG. Do you see any areas in which Amtrak could make further cost reductions without reducing the ridership further?

Secretary PEÑA. Not that they are easy to identify, Mr. Chairman. I think everyone agrees that we are now into the tough decisions for Amtrak.

AMTRAK SELF-SUFFICIENCY

Senator LAUTENBERG. One of the things that is grossly misunderstood is the relative proportion of subsidy given different modes of transportation. People are inclined to ignore that which is given to aviation or highway.

When we look at the subsidies given to other modes of transportation, is it possible that Amtrak should be required to achieve operating self-sufficiency when, realistically, it does not happen any other place?

It does not happen in any other transportation modes. I am also talking about other countries that have significant passenger rail

service. Is it realistic to think that they can operate without some operating subsidy?

Secretary PEÑA. Mr. Chairman, that is a tough question. I think Amtrak is doing some very creative things and has done some very creative things. And we will know very shortly whether or not we have now reached the point where Amtrak will need some kind of continuing subsidy.

I would hope, and I think the board feels this way, they will continue to make more and more progress in becoming self-sufficient.

Who knows? They may surprise us all, but we have no illusions about this. We know that it is very difficult. And they have made the easier adjustments. And now they have to make some very tough decisions.

We may have to help them in the short term, by way of a little help to get them over a particularly difficult period.

And with the capital investments we are making, they might be able to increase their ridership sufficiently so as to bring in some more revenues to help them continue on this program of becoming self-sufficient, but, Mr. Chairman, I think it is difficult.

Senator LAUTENBERG. One of the things that would help us all is to gather, from your Department, the subsidy amounts applied to the other modes of transportation. Then we would seriously be comparing apples to apples.

SUBMITTED QUESTIONS

I would appreciate if you would have that done. With that, we excuse you. Thank you very much for being here. We will submit additional questions in writing to be answered for the record.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR LAUTENBERG

CAN WE CUT ADMINISTRATION/PERSONNEL COSTS DEEPER THAN CLINTON BUDGET?

SENATOR LAUTENBERG: Mr. Secretary, as I mentioned in my opening statement, this subcommittee will not have enough money to fully fund your FY 1994 budget request. Your budget request already assumes \$64 million in administrative savings and the reduction of almost 1,800 full-time equivalent staff by the end of 1994. Please explain the difference between the originally projected \$28 million in administrative savings and the more recent figure of \$64 million in DOT administrative expense reductions.

ANSWER: In the course of preparing Congressional budget justifications, we revised the estimate of administrative reductions. The major difference between our original estimate of \$28 million and the revised estimate of \$64 million is attributable to the reclassification of a \$34.8 million reduction in FAA Operations previously classified by OMB as "streamlining".

SENATOR LAUTENBERG: How do you plan to implement the personnel reductions?

ANSWER: Personnel reductions of 1,765 full-time equivalents by the end of FY 1994 have been allocated among the operating administrations and OST. Associated funding has also been eliminated from the applicable budget account(s). At this time, these reductions will be accomplished through attrition or early out programs. We do not anticipate any reductions-in-force.

SENATOR LAUTENBERG: How did you decide which offices would be reduced by how many personnel?

ANSWER: The President's Executive Order 12839 on personnel reductions requires a reduction of 1% in FY 1993 and 2.5% in FY 1994 from a base number of FTEs (ceiling and non-ceiling) consistent with FY 1993 enacted appropriations. Each DOT operating administration was allocated the 2.5% reduction with adjustments to reflect actual and projected staffing levels. We made an exception for FRA to add staff to manage the High Speed Ground Transportation program and to strengthen Railroad Safety.

SENATOR LAUTENBERG: Is it possible that even more staff can be cut from DOT without negatively impacting your agencies' missions?

ANSWER: Once the modal Administrators are on-board, we will ask them to take a hard look at the staffing needed to do our work.

SENATOR LAUTENBERG: Was the size of your proposed cut in administrative expenses determined by a thorough

review within the DOT, or was this taken as a percentage reduction by the Office of Management and Budget?

ANSWER: Consistent with the President's Executive Order 12837, the administrative reductions were taken as a percentage (3%) from the FY 1993 enacted level adjusted for inflation. As a general rule, the reductions were taken from a base which included all funds in the object class 20 series, excluding GSA Rental Payments. Certain accounts or portions thereof were excluded from the base computation by OMB. For example, FAA's Facilities and Equipment and USCG's Operating Expenses accounts have significant funding in the object class 20 series that are program oriented rather than administrative in nature. Other accounts such as FRA's Railroad Safety and RSPA's Pipeline Safety were totally excluded since their expenses are offset by user fees and thus no savings would be realized. In some cases, other reductions were included to accommodate the amount of the administrative reduction.

FOSTERING NEW TECHNOLOGIES IN THE U.S.

SENATOR LAUTENBERG: As a leading advocate for expansion of high-speed rail and IVHS in this country, I am very interested in your efforts to promote these technologies within the United States. As you know, many of the programs funded by your Department carry a "Buy America" provision that requires at least 50 percent U.S. content for taxpayer-funded projects.

Have you given consideration to restricting funding for new technologies such as high-speed rail and IVHS to 100 percent U.S. content?

ANSWER: We are giving careful consideration to a Buy America provision that could be added to the Administration's proposed High-Speed Rail Development Act of 1993. This is a complex area, with many issues of international and domestic policy to balance. We want a provision that ensures that opportunities for U.S. products and businesses play a strong role in this program.

The Buy America provisions of the Surface Transportation Assistance Act of 1982 (23 U.S.C. 101 Note) as amended by ISTEA apply to the IVHS program. These provisions require that Federal funds cannot be obligated unless iron, steel, cement and manufactured products used in a project are produced in the United States. These provisions do not apply if the Secretary finds:

- (1) that their application would be inconsistent with the public interest;
- (2) that such materials and products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; and
- (3) that inclusion of domestic material will increase the cost of the overall project contract by more than 10 per cent in the case of projects for the

acquisition of rolling stock, and 25 per cent in the case of all other projects.

The vast majority of materials used in our IVHS projects are, in fact, American-made.

SENATOR LAUTENBERG: Do you believe that the current technology transfer capability from DOT-funded research to America's private sector is adequate? How do you plan to improve it?

ANSWER: Over the past several years, legislation dealing with technology transfer, most notably the Stevenson-Wydler Act as updated and the Federal Technology Transfer Act of 1986, has provided Federal agencies with an effective set of mechanisms to encourage application of Federal research results by the private sector. DOT considers these mechanisms adequate, and believes that the key to more effective technology transfer is promoting their use on a broader basis.

The keystones of many of these mechanisms are the Federal laboratories. DOT is an active member of the Federal Laboratory Consortium, and has promoted the use of Cooperative Research and Development Agreements (CRADA's) to make the capabilities and expertise at the laboratories available to industry. The Federal Aviation Administration has been particularly effective in using this channel, and DOT is moving to foster similar initiatives in the other operating administrations.

DOT also participates in multi-agency technology transfer initiatives like the National Technology Transfer Center, designed to assist industry with technical problems and help commercialize new technologies. In addition, private sector users have full access to the range of clearinghouses, data services, document distribution systems, and technology transfer centers used by DOT to communicate technical material to the transportation community.

TRANSIT CAPITAL PROJECTS FUNDING ALLOCATION

SENATOR LAUTENBERG: Mr. Secretary, in your budget request for transit "new start" funding, you have included language stating that the allocation of these funds will be based on recommendations contained in the Federal Transit Administration's 3(j) Report. The 3(j) Report has not been used for this purpose in the past, but has provided the Committee very useful information on the various and competing new start projects. Does this new statutory proposal to allocate funds according to proposed use of the 3(j) report require a complete new format and content of the report?

ANSWER: The reference to the 3(j) report in our budget proposal does not require either a new format or a change in content. The report has always contained the Department's recommendations for funding in the upcoming fiscal year and its format is still appropriate, even in light of its new role in decision making.

SENATOR LAUTENBERG: When do you expect to have that report delivered to the Committee?

ANSWER: The 3(j) report will be delivered to Congressional committees prior to FTA's May 11 hearing before the House Appropriations Subcommittee on Transportation.

SENATOR LAUTENBERG: Will the new 3(j) report provide specific dollar recommendations for each new start project that currently exists?

ANSWER: The 3(j) report provides specific dollar recommendations consistent with the President's Budget request for FY 1994 and for outyears for all projects currently in the new start pipeline.

SENATOR LAUTENBERG: Will FTA provide a strict "ranking" system of new start projects?

ANSWER: Projects are prioritized within categories but not strictly ranked. When making funding allocation decisions, the Department believes that it is better policy to make small adjustments in funding to a large number of projects than to focus all funds on the highest priority projects.

SENATOR LAUTENBERG: The 3(j) report includes the cost of attracting an additional rider as one measure of cost/benefit. What other criteria will be used by the 3(j) report in evaluating new start proposals and allocation of new start funds?

ANSWER: The Intermodal Surface Transportation Efficiency Act (ISTEA) provides a set of criteria that the Department uses to determine which new start projects will receive funding. This set of criteria consists of: cost-effectiveness (cost per new trip); mobility improvements; the potential environmental benefits; operating efficiencies; and local financial commitment. When considering the specific allocation of funds, readiness of the project to spend money is also considered.

SENATOR LAUTENBERG: How will the source of funding, the stability of funding, and the stage of the building process affect the ranking of a new start project in your new 3(j) report?

ANSWER: Local financial commitment is considered equally with the other ISTEA criteria in determining projects to fund. A project's proposed capital financing plan is evaluated on the stability and reliability of each proposed source of local matching funds, on the provisions made in the plan to cover unanticipated cost overruns and, on the ability of the local transit agency to run the system once it is operational. The stage a project has reached affects its consideration for funding in two ways. First, the criteria applied to establishing stability of local funding become stricter as the project nears construction. Second, the amount of money allocated to a project in a given year depends upon its readiness to use those funds; the further a project has

moved in the development process, the more likely it is to be ready to use funds within the fiscal year.

SENATOR LAUTENBERG: No such report exists for capital acquisition projects, such as buses. What criteria does the Administration plan to use when allocating the funding for bus purchases?

ANSWER: A number of considerations are taken into account in evaluating applications for funding of bus purchases. First, projects are looked at in terms of the three priority capital categories for Section 3 bus funds: construction or rehabilitation of maintenance facilities; acquisition of buses for replacement or expansion; and other facilities such as intermodal terminals or transfer centers. Within those categories, projects are assessed as to how they contribute to the program emphasis areas: maintaining transit fleet and infrastructure; contribution to clean air goals; improving accessibility; and demonstration of innovative financing/overmatch. Other criteria include providing a fair share of funding to all city sizes and geographic areas; readiness of the project for implementation; an assessment of an area's use of formula funds; and the system's spare ratio.

TRANSIT OPERATING ASSISTANCE

SENATOR LAUTENBERG: The overall transit formula grants program is proposed to receive a 44 percent increase over the level provided in FY 1993. However, the amount of operating assistance for the urbanized areas was not increased above the \$802 million level. What were the reasons for freezing the operating assistance funding level at \$802 million?

ANSWER: The budget includes \$802 million for operating assistance, nearly the same as enacted by Congress each year since FY 1988. By comparison, ISTEA would allow \$1.04 billion in FY 1994. Operating assistance was kept at the historical level rather than the ISTEA level because the Administration's priority is first to fund the much needed long-term capital investments that maintain and expand the current transit system. It should be noted that State and local governments have demonstrated an increasing ability to fund operating expenses, as evidenced by their non-Federal share increasing from 85% to 95% over the past 11 years.

PROCUREMENT AT DOT

SENATOR LAUTENBERG: Modernizing this nation's air traffic control system is a 20-plus-year effort and is fast approaching a total cost of almost \$40 billion. What seemed like a technologically sound idea in 1980 might not be the best alternative in 1990, 1993, or the year 2000. In fact, one of these new technologies -- the Global Navigation System -- would seem to have the

potential to replace several parts of FAA's modernization program. Does the Department have an estimate of the potential for satellites to supplant the capability now provided by various radars and landing systems? Which systems, both installed now and in planning stages, could potentially be affected?

ANSWER: DOT is actively working with DOD to explore additional civil use and the appropriate management structure for the Global Positioning System (GPS). In addition, there is an ongoing research program in DOT to determine what future applications of GPS will be feasible and economical for DOT. Early results indicate that GPS will be widely used for Category I precision landing guidance, and work continues toward deciding whether or not it can be used for Category II and III precision guidance. That decision is now scheduled for 1995. GPS will also be used for oceanic navigation, and it may be used for domestic navigation. However, replacement of existing systems will take several years. Given the large investment, both private sector and government, in existing equipment, a transition of several years must be provided before requiring the use of new systems. The Federal Navigation Plan shows that all present FAA operated navigation systems other than TACAN will remain in operation until past the year 2000, because transitioning to a new system takes 10 to 15 years. In addition, virtually every navigation application requires both a primary and secondary system. There are no plans to replace radar surveillance for air traffic control at this time.

SENATOR LAUTENBERG: How much can be saved by scrapping plans for new radars and landing systems with a satellite-based precision landing system?

ANSWER: About \$1 billion would be saved between 1995 and 2003 if the satellite based system is used for category I landings.

SENATOR LAUTENBERG: What other major systems in FAA's Capital Investment Plan could have their procurement truncated if satellite navigation is successful and implementation is possible within the next few years?

ANSWER: Because of the long transition time necessary to convert to use of a satellite navigation system, there are no near term savings from cutting short current system procurements at this time. We will continue to carefully examine future budgets to find any programs and expenditures that could be cut, but would expect that savings would not occur until the year 2000 or later. In addition, conversion to use of satellite navigation would require substantial investments to modify existing automation and communication equipment.

SENATOR LAUTENBERG: Mr. Secretary, you are well aware that the need to fund infrastructure activities that create jobs in the various parts of the

transportation sector is creating budget pressures in other places. For example, we could be forced to look very carefully at FAA's F&E account to achieve budget savings. If so, does the Department have mechanisms to make such a budget review an efficient and effective exercise?

ANSWER: If cuts are made in the F&E budget, we would like to work with the Committee to identify the areas to be cut.

FACILITIES AND EQUIPMENT REQUESTS AND INCREASES IN AIR TRAFFIC

SENATOR LAUTENBERG: The Federal Aviation Administration's (FAA) Facilities and Equipment (F&E) appropriation grew from \$260 million in fiscal year 1982 to \$2.4 billion in fiscal year 1993, an increase of over 800 percent. Over approximately the same period, aircraft operations grew only 5 percent (from 127.6 million in 1982 to 134.2 million in 1992). Despite diminishing air traffic over the last 2 years and the overestimation of air traffic growth over the last decade, FAA continues to predict growth in aircraft operations during the 1990's and beyond. Does FAA anticipate that the F&E budget will level off over the next few years when projects in its original National Airspace Plan start to come on line?

ANSWER: Current projections show a leveling off in the future F&E budget requests through the latter half of the 1990s. The need for infrastructure support such as building and equipment replacement will continue. There will also be a continuing need for update of the existing systems, but system enhancements will be easier because the design of the current systems use open architecture software and a more modular configuration.

SENATOR LAUTENBERG: FAA has predicted increased capacity in the air traffic control system when F&E was implemented. How will we know when the capacity of the air traffic system catches up with the volume of air traffic? How will FAA measure this? Should we expect a decrease in the number of delays in the air traffic system over the next few years as projects are installed and, if so, how much of a decrease?

ANSWER: FAA's F&E appropriation pays for much more than just expanding capacity. It pays for modernizing the air traffic control system, supporting it, and replacing worn out or obsolete equipment. For example, FAA replaced the obsolete, vacuum tube computers (which were at maximum capacity) with modern host computers that can handle the system into the next century. Another major and equally important purpose of F&E spending is increasing safety. Aviation safety has increased steadily over the years.

FAA has made some progress in reducing delays. While air traffic operations declined by almost 2 percent from 1990 to 1992, delays declined at a faster rate -- 28 percent from 1990 to 1992. Much of this decline can be

attributed to recent FAA capital investments (e.g., the Traffic Management System). Further reductions in system delays are expected in the future with the implementation of capacity-related capital projects such as modernizing the precision approach and landing system using the Microwave Landing System and the Global Positioning System.

Currently, many major airports do not have sufficient capacity to handle today's demand. FAA uses delays, especially capacity-related delays, to measure where demand exceeds capacity. With the growth in system capacity resulting from the implementation of capital investment projects, system delays are expected to decrease substantially. FAA expects demand to grow. Although FAA forecasts today are not as optimistic as a few years ago, they still expect modest long term growth.

SENATOR LAUTENBERG: Has FAA made adjustments to its long-term forecasting models as a result of the inaccurate forecasts in aircraft operations and other activity measures over the last decade? Does FAA adjust its future air traffic estimates given changes in other technologies?

ANSWER: Yes, FAA periodically evaluates and adjusts its forecast models to account for changes in the economic environment. FAA sponsors workshops to critique the techniques and practices used by FAA and other aviation forecasters and to examine the outlook for the industry and the prospects for aviation growth. The workshops focus on the forecast process and ways to improve the reliability and utility of the forecast results. The future air traffic estimates are reviewed and adjusted periodically to account for major influences such as significant changes in the price of oil and deep fare discounts. There has been some concern that changes in technology such as video-conferencing and voice mail may lead to reduced demand for air transportation by business travelers. Although many firms have implemented video conferencing, some people believe that technology increases productivity, saves time, enhances business opportunities, and may even increase travel. Changes in other technologies, such as tilt-rotors, supersonic transportation, and high speed ground transportation are considered when preparing and evaluating the aviation forecasts.

FAA's AIRPORT IMPROVEMENT PROGRAM

SENATOR LAUTENBERG: The Administration favors a 1-year extension of the Airport Improvement Program (AIP), ostensibly for the purpose of having more time to develop a long range strategy for airport development. Last year, FAA issued its report entitled, "Long-term Availability of Adequate Airport Capacity." Moreover, FAA's National Plan of Integrated Airport Systems (NPIAS) forecasts airport needs out past the turn of the century, and FAA had completed more than 30 airport-specific

capacity studies. To what extent do these reports meet or fall short of your need for strategy documents in the area of airport development?

ANSWER: The long-term needs report and the NPIAS, while providing valuable information about the airport system, fall short of being able to tell us what investments to make to ensure future needs will be met.

SENATOR LAUTENBERG: If they meet your needs, why would you propose only a temporary extension of the AIP and not full 5-year reauthorization?

ANSWER: The Department's primary concern is to ensure that there is no lapse in Airport Improvement Program (AIP) funding, which will expire at the end of FY 1993. There are a number of critical issues facing the aviation industry today and a comprehensive review, such as the one being undertaken by the National Commission to Promote a Strong and Competitive Airline Industry, will help shape the course that we should take. While AIP is an important piece of the FAA reauthorization process, a number of other issues are also routinely addressed. The 1992 reauthorization act included air traffic controller and safety inspector staffing, a commission to study the airline industry, aviation security training, slots and civil penalties. The 1990 reauthorization act was equally diverse, including increases in tax levels, phasing out of Stage 2 aircraft, multi-year contracting authority, and authority for Passenger Facility Charges. A number of issues need to be addressed before a comprehensive bill can be developed. Having the benefit of the management team in place would be desirable.

SENATOR LAUTENBERG: If the report falls short, what do you intend to do in one year that the Department could not do in the 4-year period from 1988 to 1992 to develop a long-range needs assessment for the national aviation system?

ANSWER: FAA has a number of efforts underway to improve the planning process including development of system models to measure performance, an analysis of airport financing, and a review of airport access.

SENATOR LAUTENBERG: Because of the expense of -- and sometimes controversy over -- developing additional airport capacity, and the competition among airports for grants that are available for that activity, I have asked the General Accounting Office (GAO) to look into the process FAA uses for awarding grants and would appreciate any assistance that your Department could provide GAO in that exercise. The Department has reported to us in the past that it is developing a way to model the performance of the airport and airway system to better forecast needs and to determine how an enhancement in one airspace sector or at a specific airport can affect the entire system. Because development of such a model has been underway for some time, and because something near \$10 million per year is appropriated for modeling and

simulation in FAA's R,E&D program, please update us on the status of this effort.

ANSWER: FAA has developed a number of models of the airport and airway systems. The majority of the effort and the funding for modeling and simulation in the R,E&D budget has focused on the airway system. This effort includes measuring ATC system performance, automating national traffic flow planning, improving airspace use and controller work load, and analyzing effectiveness of new ATC technologies.

With regard to airport performance, FAA uses two models funded in R,E&D: the National Airspace System Performance Analysis Capability (NASPAC) model and Simulation model (SIMMOD). NASPAC is a system-wide model that simulates aircraft movements throughout the system and estimates how delay accumulates during the day. SIMMOD is an airport and airspace simulation model that measures capacity, delay, configuration of gates and runways, and sector demand at a particular airport or in a region with several airports. This model is useful for airport specific issues but does not measure system performance. FAA is developing a new model that they believe will be more effective in measuring airport system performance. The model will compute local and system-wide delay over time for each airport and show how congestion spreads from one or a few airports over the entire network.

SENATOR LAUTENBERG: Although the FAA's long-range needs study discussed and summarized the findings of studies done by the National Research Board and others on airport capacity, it did not identify airport needs into the next century as intended. What is your assessment of what the Department needs to do to define the long-term outlook for airport development?

ANSWER: Projecting the long-term outlook of 20 to 30 years is always difficult, but it is an important effort in determining what decisions need to be made in the short term to ensure that the future system will meet the demand. FAA will continue to refine its capability to more effectively measure and forecast air transportation demand and the relative benefits of airport improvements on the system.

ENVIRONMENTAL IMPACT STATEMENT

SENATOR LAUTENBERG: I want to raise an issue with you that is very sensitive to my constituents: aircraft noise in New Jersey. FAA is in the process --- and has been for as long as I can remember --- of preparing in retrospect an Environmental Impact Statement on the Expanded East Coast Plan (changes to air routes FAA made in 1987). Mr. Secretary, the final EIS was to have been issued before the end of calendar year 1992. What is the status of the EIS for the Expanded East Coast Plan and what are the expected completion dates of the draft and final statements?

ANSWER: The Draft Environmental Impact Study (DEIS) was issued November 12, 1992. Comments were requested by January 22, 1993, and subsequently extended to March 5, 1993 to allow more time for public comment. On March 15, 1993, the comment period was reopened and extended to June 14, 1993, to accommodate a request from Governor Florio of New Jersey and the Port Authority of New York and New Jersey. The additional time was also granted to enable the New Jersey Citizens Against Aircraft Noise to obtain technical assistance to review and assess the DEIS. Once the comment period has closed, FAA will act expeditiously to complete the final EIS.

SENATOR LAUTENBERG: During the FAA budget hearing last year, the acting administrator and I had some discussion about whether property values would be addressed in the EIS. Has this issue been worked into the current EIS?

ANSWER: Yes. Property values are addressed in the EIS.

PAY DEMONSTRATION PROGRAM

SENATOR LAUTENBERG: The FAA recently decided to terminate the Pay Demonstration Program. This program was intended to enhance FAA's ability to recruit and retain experienced, qualified personnel in certain hard-to-staff facilities by providing a retention allowance of up to 20 percent of the employee's rate of base pay. FAA estimated that terminating the program in October 1993 rather than the original end date of June, 1994 would save \$20 million. Has FAA performed a formal evaluation of this pay demo project? If so, please provide the highlights of this evaluation.

ANSWER: The formal evaluation of the project is being conducted by an independent contractor under FAA and OPM direction. The first evaluation report covering the implementation and initial year of operation was issued in October 1991. A second evaluation is ongoing and is expected to be completed within 4-5 months. Preliminary data from the ongoing evaluation reflects:

- o Since implementation in June 1989 through mid-December 1992, staffing levels increased from 2,129 to 2,352, a net increase of 223 (10 percent).
- o Total accessions of 1,013:

Air traffic	736
Airway facilities	193
Flight standards	84
- o Total separations of 790:

Air traffic	562
Airway facilities	152
Flight standards	76
- o Experience levels increased from 10.3 years per employee at implementation to an average of 11.3 years.

o Full performance level (FPL) controllers increased from 604 at implementation to 910, a 51 percent increase.

SENATOR LAUTENBERG: What analysis did FAA conduct before deciding to terminate the program? How did FAA arrive at the \$20 million cost savings?

ANSWER: FAA considered many different factors before deciding to terminate the pay demonstration project, including the current and projected staffing levels, the ongoing costs, the potential effects of ending the project early, and other alternatives available to address recruitment and retention, such as the Federal Pay Comparability Act. While there has been a net increase in staffing, FAA decided that the project had achieved its purpose, that it was no longer essential, and that the substantial cost of the program did not justify its continuing. The primary objective of the project was to test whether a pay allowance would improve the recruitment and retention of employees at selected hard-to-staff facilities. This was a five year demonstration which began in June 1989 and was scheduled to end in June 1994. By the end of September 1993, more than four years of data will be available, and ending the project nine months ahead of schedule will not compromise the evaluation of project. The \$20 million savings is based on the estimated annual cost of the pay demo allowances.

SENATOR LAUTENBERG: Does FAA have any hard-to-staff facilities? What impact on your ability to staff high-cost facilities will terminating the pay demonstration program have? Without the program, how does FAA plan to attract controllers to those facilities?

ANSWER: There will probably always be some Federal facilities, including FAA facilities, where it is more difficult to recruit well-qualified employees. However, system-wide improvements in recruitment and retention over the past several years, combined with improvements in overall economic conditions, have alleviated many of the staffing difficulties at these facilities.

The pay demonstration project was never intended to address high cost of living. It was designed to test whether a pay incentive would improve recruitment and retention of employees at facilities where staffing problems were most critical and chronic. Since the demonstration project was implemented in June 1989, the Federal Employees Pay Comparability Act (enacted in 1990) gave Federal agencies additional authority to address recruitment and retention problems and established new methods for determining government-wide comparability increases and addressing geographic pay differences. Given these new authorities and the staffing improvements that have occurred at FAA facilities, terminating the demonstration project will likely have little effect on FAA's ability to attract controllers.

SENATOR LAUTENBERG: What is the current staffing situation at the facilities that were included in the

program? What impact does terminating the program have on the work force that has been receiving a pay differential?

ANSWER: The pay demo payments average \$2,300 per employee per quarter. The employees will no longer receive this allowance when the demonstration project terminates. The following table reflects the employment levels at the facilities as of mid-December 1992:

	<u>Air Traffic</u>	<u>Airways Facilities</u>	<u>Flight Standards</u>	<u>Total</u>
New York area:				
New York Center	412	95		507
New York TRACON	271	62		333
Farmingdale FSDO/ MIDO			23	23
New York FSDO			41	41
Teterboro FSDO/MIDO			<u>41</u>	<u>41</u>
Total NY area	<u>683</u>	<u>157</u>	<u>105</u>	<u>945</u>
Chicago area:				
Chicago Center	544	87		631
Chicago O'Hare				
Tower	58			58
TRACON	115			115
AF Sector		<u>120</u>		<u>120</u>
Total Chicago area	<u>717</u>	<u>207</u>	0	<u>924</u>
Los Angeles area:				
Coast TRACON	88	10		98
Los Angeles Int'l				
Tower	55			55
TRACON	93			93
AF Sector		71		71
Los Angeles FSDO			<u>38</u>	<u>38</u>
Total L.A. area	<u>236</u>	<u>81</u>	<u>38</u>	<u>355</u>
Oakland area:				
Bay TRACON	106	22	0	128
Total for all pay demo facilities.....1,742				
		<u>467</u>	<u>143</u>	<u>2,352</u>

SENATOR LAUTENBERG: What response have you received from your air traffic controller work force to the early termination of the program?

ANSWER: Naturally, controllers are not pleased with having to accept the reduction. The pay demo payouts were purposely given on a quarterly basis so that the allowance did not become a part of the controllers regular paycheck. Many controllers expected that FAA would continue the pay demo allowance beyond the scheduled June 1994 expiration date.

SENATOR LAUTENBERG: Apparently many controllers who are eligible to retire are staying on because of the pay

demonstration project. What impact on your overall controller numbers will eliminating the pay demo project have?

ANSWER: FAA does not expect a significant number of early retirements because of the termination of the pay demonstration. Since most of the controller work force has been hired since the 1981 PATCO strike, it is a young work force and relatively few are eligible to retire. There are more than 1,500 controllers at all the pay demo facilities. Only 95 of them are eligible to retire. FAA does not anticipate any problems replacing these potential retirees through normal reassignment and recruitment processes.

SENATOR LAUTENBERG: Did FAA consider other options to terminating the program? If so, please explain what those options were and their pros and cons.

ANSWER: Yes. FAA examined numerous options before deciding to terminate the pay demonstration project. FAA is taking cuts in other areas of Operations. In addition to the \$20 million from the pay demonstration, the Operations budget takes another \$149 million reduction from the baseline. The additional reductions include \$71 million in staffing reductions, retirements and turnover, \$40 million in administrative expenses and travel, \$11 million for ending the DUATS subsidy, \$27 million savings in leased telecommunications, and other miscellaneous cost areas.

With personnel costs comprising over 75 percent of the Operations funding, there is very little flexibility to reduce program costs in the short term. In order to avoid further reductions in staffing or critical contractual support, a decision was made to terminate the pay demonstration early.

SENATOR LAUTENBERG: What benefits gained from the program will be reversed by the termination?

ANSWER: While it appears there have been benefits from the pay demo program, there have also been system-wide improvements during the same period, as well as improvements in general economic conditions. It is difficult to determine to what extent improvements at the demonstration sites are attributable solely to the demonstration project and to what extent, if any, those benefits would be reversed. Once the evaluation of the project is completed, FAA should be able to determine more precisely the actual effects of the project.

CONSOLIDATION OF AIR TRAFFIC CONTROL FACILITIES

SENATOR LAUTENBERG: In response to questions about consolidating FAA's air traffic control facilities, FAA responded that a final plan was under development, and would be issued to Congress early in 1993. As yet, however, we have received no plan. Nevertheless, FAA's decision to consolidate its facilities is pivotal to reconciling several air traffic control modernization issues. Mr. Secretary, can you give us any information

on the consolidation plan's substance or when the decision will be made?

ANSWER: The Administration has decided to pursue a course of limited consolidation, i.e., facilities will be consolidated only in those locations where it is justified on operational or economic grounds. Five locations for new Metroplex Control Facilities (MCFs) have already been identified. Any additional MCFs to be established would be based on a case-by-case review of costs and benefits and operational need. FAA expects to have a detailed plan to Congress within the next month.

SENATOR LAUTENBERG: Please provide for the record a listing of the major capital investment plan systems and their acquisition costs that are significantly affected by the facility consolidation decision.

ANSWER: The list below shows the major capital investment programs that are affected by the limited consolidation decision, and a preliminary estimate of the incremental costs (over and above the 1991 CIP) associated with the limited consolidation decision:

<u>Capital Investment Plan Programs</u>	<u>Additional Costs - Limited Consolidation</u>
o Establish MCFs	*
o New automation for TRACONS	+\$244 million
o Air Traffic Control Tower replacements	+\$107 million
o Air Traffic Control Tower modernization	+\$ 81 million
o Data Multiplex System	+\$ 32 million
o Enhanced Terminal Voice Switch	+\$ 12 million

* The exact amount spent for MCFs will vary depending on the number of sites justified. New York is already established, Southern California, Dallas/Ft. Worth, Denver, and Chicago combined cost about \$400 million which is virtually all appropriated. Cost of additional MCFs would be slightly less than \$100 million per site.

ANTI-LOCK BRAKES

SENATOR LAUTENBERG: Anti-lock brakes are already required on newly-manufactured trucks in the European Community, and on most heavy trucks in Japan. As a result, jack-knifing incidents involving heavy trucks have been greatly reduced in the EC and Japan. Will NHTSA's upcoming regulation require anti-lock brakes on just truck tractors, or also on truck trailers?

ANSWER: NHTSA's upcoming rulemaking on this subject will address both heavy trucks and trailers. NHTSA is currently preparing a Notice of Proposed Rulemaking, and expects to issue a Final Rule by the end of the calendar year.

TRUCK SAFETY

SENATOR LAUTENBERG: In the FY 1993 transportation appropriations bill, I was successful in earmarking \$1 million in highway funds for improving the training of heavy truck brake mechanics. What is the status of that project?

ANSWER: The \$1 million research project is part of a \$4.5 million package of six research projects that will be performed for the FHWA by the American Trucking Associations' Trucking Research Institute (TRI). The House Report accompanying the 1993 Appropriations Bill recommended that FHWA use the expertise available at TRI.

A request for proposal was issued to TRI on April 9 for all six projects. FHWA anticipates that a contract will be awarded in June 1993.

SENATOR LAUTENBERG: I note that your FY 1994 budget has requested little more than inflation increase for the Office of Motor Carrier Safety and its grant programs. Do you believe that the motor carrier safety grant program is the only avenue you have to improve compliance by the trucking community?

ANSWER: No. FHWA has established other compliance enforcement programs to complement States' efforts. Through its Education and Technical Assistance Program, the FHWA continues to educate carriers and provide technical assistance as a means of improving carrier compliance. The Selective Compliance Enforcement Program has been successful in identifying and prioritizing potentially unsafe motor carriers for compliance reviews and enforcement actions, which has resulted not only in improved compliance but also in a reduction in accidents.

FHWA's continual effort to improve and enhance its information systems has resulted in more accurate and timely carrier data, thus allowing carrier reviews to be targeted to the most unsafe carriers.

Later this year, FHWA will begin to assess State compliance with the Commercial Driver's License provisions contained in the Commercial Motor Vehicle Safety Act of 1986, in order to achieve increased compliance with safety requirements.

STATUS OF RADAR DETECTOR BAN FOR TRUCKS

SENATOR LAUTENBERG: In the FY 1992 Transportation Appropriations Bill, I included a provision mandating the Department initiate a rulemaking banning the use of radar detectors in trucks. The Department published a proposed rule on this issue over 15 months ago. The comment period on the proposed rule has been closed for a year and we have heard nothing. When can we finally expect to see a final rule banning the use of radar detectors in trucks?

ANSWER: The Federal Highway Administration received more than 26,000 responses to the notice of proposed rulemaking to ban the use of commercial motor vehicle

radar detectors. These comments which represent both sides of the issue are currently being analyzed.

UNDERAGE DRUNK DRIVING

SENATOR LAUTENBERG: Earlier this year, this subcommittee held a hearing with the National Transportation Safety Board on the appalling consequences of drunk driving by underage youth. Your budget request for FY 1994 seeks increased funding for highway safety grants, including programs aimed at limiting drunk driving. As you may know, I am the principal author of the Federal 21 drinking age legislation, and I am greatly disturbed by the rate of non-compliance with this law. What steps do you intend to take to improve enforcement of the 21 drinking age? Are you looking at any new Federal legislation in this area?

ANSWER: The Department is certainly concerned about the problem of underage drinking and driving and works continually with State highway safety agencies to develop effective countermeasures. We have seen some improvement in recent years in accident statistics involving alcohol use and young drivers.

Our FY 1994 budget requests over \$158 million for Section 402, 410, and 408 grants that can all be used by States to combat drinking and driving. The Section 402 program can fund education and enforcement programs to reduce impaired driving, while the Section 410 program provides incentive funds for States that enact a BAC of .02 or lower for youth.

We play a leadership role by encouraging States and national organizations to support laws that will reduce alcohol involvement in highway accidents. We work with highway safety agencies, including police departments, to encourage effective enforcement programs of existing laws. At this time, we do not think it is necessary for the Administration to introduce new legislation concerning underage drunk driving.

SENATOR LAUTENBERG: The Bush Administration committed itself to boosting the seat belt usage rate across the country to 70 percent by 1992. This was achieved in some States and not in others, but all States saw increased use. Are you prepared to commit the Clinton Administration to a quantifiable goal in reducing underage drunk driving?

ANSWER: Although we do not have a specific goal for underage drunk driving in particular, we have set a goal for reducing overall drunk driving. Currently, 46 percent of all crashes are alcohol related. At the LIFESAVERS Conference in March 1993, the Secretary announced the goal of reducing the number of alcohol related accidents to 43 percent by the end of this Administration.

SENATOR LAUTENBERG: Just as we sanctioned States' highway apportionments for failing to raise the drinking age to 21, I believe that it may be time to sanction

those States that do not adequately enforce the law. What are your views on this proposal?

ANSWER: The highway safety alcohol incentive grant programs can be an effective means for achieving changes in State laws and enforcement programs. However, the penalty approach may need to be evaluated if it becomes clear that current programs are not achieving their purposes.

HIGH-SPEED RAIL PROPOSAL

SENATOR LAUTENBERG: You note in your testimony that you will soon be submitting new legislation for the \$140 million you are seeking for high-speed rail and Maglev projects. This subcommittee held an informative hearing on high-speed rail earlier this year, where we gathered the views of many in the private sector, as well as the railroad industry. How do you plan to structure this program in order to maximize the contribution of the States and the private sector? Will you be calling on States to make a larger percentage contribution toward a high-speed rail project than they currently do for a highway or transit project? Why?

ANSWER: The proposed legislation would establish a high-speed rail program that would involve a partnership with state and local governments and the private sector. Our proposal will incorporate several measures to facilitate this partnership. First, states would be required to request designation as a high-speed corridor, and our decision to designate a high-speed corridor will be based, in part, on evidence of financial commitment of the state and local governments and the private sector to development of high-speed rail service. Second, states (or other responsible public agencies) would be required to develop detailed master plans for proposed corridor improvements, and in reviewing these plans we will be looking for an allocation of financial responsibilities and sources of funding, including the private sector. Third, in developing any subsequent financial assistance agreement, the maximum amount of private funding for the project will be sought, and the remaining costs -- the public share -- will be shared by the Federal, state and local governments. The program will fund up to 80 percent of the cost of any eligible improvement project, as with highway and transit project funding, but no more than 50 percent of the total public share of any program of projects.

SENATOR LAUTENBERG: You have testified that you intend to restructure the regular prototype program in ISTEA to ensure that we do not spend hundreds of millions of dollars and find that we have nothing to show for it. How do you intend to ensure that your proposed Maglev funding will not be wasted?

ANSWER: The prototype development program that we propose follows the general outline of the program outlined in ISTEA, but with certain modifications.

First, where ISTEA proposes to use five contractors in Phase I and three contractors in Phase II, we would use three contractors in Phase I and two in Phase II. The funding requirement would be reduced accordingly. Second, in recognition of the complexities involved in developing new technologies, we would extend Phase I from 12 months (as outlined in ISTEA) to 18 months, and we would extend Phase II from 18 months to 30 months. Third, we propose to complete the commercial feasibility study by the end of CY 1994, rather than in two years as outlined in ISTEA. We also propose to evaluate the prototype development program at the end of CY 1994. The program will not proceed if the commercial feasibility study and the results of the Phase I design work do not support continued investment.

SENATOR LAUTENBERG: What is your general view on whether we should be directing new high-speed rail funds to new technologies such as Maglev versus targeting funds on incremental high-speed improvements over current rights-of-way?

ANSWER: Both approaches have merit. While, in the short-term, we would support ongoing efforts to develop high-speed service with incremental improvements on existing infrastructure, research conducted in the past few years suggests that ultra high-speed and maglev technologies may have potential for helping to meet the transportation needs in the next century.

SENATOR LAUTENBERG: We have heard greatly varying estimates of the likely cost-per-mile for a prototype Maglev project, ranging from \$20 million to \$60 million per mile. FRA has been researching this question. What do you estimate to be the likely cost per mile of a Maglev prototype project? How does that compare to the costs of incremental improvements to create high-speed rail corridors over current rights-of-way?

ANSWER: Maglev is an evolving technology and cost information is still very preliminary. Based on the ongoing research, it appears that new maglev infrastructure is likely to cost between \$30 million and \$40 million per route mile on a completely separate right-of-way when the costs of right-of-way, guideway, stations, vehicles, etc. are considered.

Incremental improvements to existing rail systems would vary greatly, depending on the location and the type of improvement. Our most extensive experience with incremental improvements has been the Northeast Corridor Improvement Project (NECIP) that cost \$5.5 million per route mile, or about \$8 million per route mile in current dollars.

Preliminary plans submitted to DOT by the States in connection with the Section 1010 (ISTEA) program contemplated incremental speed improvements that are generally more modest than under the NECIP and on railroads that have only one or two tracks (vs. an average of three tracks on the Northeast Corridor).

According to State estimates, these improvements would cost between \$2 and \$6 million per route mile.

PRIORITY ON HIGHWAY FUNDING OVER OTHER MODES

SENATOR LAUTENBERG: Mr. Secretary, in your original proposed FY 1993 stimulus program, you requested the fully authorized level for highway funding under ISTEA, but a lesser level of funding than the authorized level for transit. Similarly, your FY 1994 budget asks us to fully fund the highway program, but provides some lesser level of funding, below the authorized level, for transit and Amtrak. And just this week, President Clinton has proposed an alternative stimulus package that would preserve the fully authorized level for highways, but would cut by 43 percent the proposed stimulus levels for Amtrak, transit and airports. I am a very strong advocate for increased highway spending, but I also think we need to boost spending in all the other modes in order to bring about a balanced transportation program. Please explain why the administration has sent a very clear signal that it prioritizes highway funding above funding for all other modes.

ANSWER: We would not agree that we have prioritized highway funding above funding for all other modes. In our original stimulus proposal, the increases in capital investment were larger in percentage terms for Amtrak (114 percent) and transit (22 percent) than for the Federal-aid highway program (17 percent). Even after the President agreed reluctantly to some reductions in the stimulus package, the percentage increase for Amtrak capital is still larger than for highways, and the transit capital increase is 12.5 percent.

To the extent that there is a perception that we have placed a higher priority on highways, it probably comes primarily from a comparison of our proposals with the levels authorized in ISTEA for highways and transit. For FY 1994, we are proposing full funding of highways and 86 percent of the authorized amount for transit.

Comparison to authorized levels is one way to evaluate our budget proposals, but there are two others that we think are compelling: increases over current spending levels and spending as a percent of capital needs. Our proposal for the transit budget overall for FY 1994 represents 21 percent growth over the FY 1993 enacted level. That is more growth in one year than transit has seen in the past four years. For capital programs, the increase from FY 1992 to FY 1994 with the President's investment proposal is 30.2 percent. Under our proposal, a much higher level of transit capital needs, than of highway capital needs, will be met. With full funding of highways, there is a good chance that we will see a significant amount of highway funds supporting transit projects. In FY 1992, with total Federal-aid highway obligations of \$17.9 billion, some \$300 million of highway funds were used for transit. With a program of over \$20 billion a year and more experience in

implementing these new flexibility provisions, we expect much more.

SENATOR LAUTENBERG: Why is the administration prepared to reduce its stimulus package for Amtrak, transit, and airports by 43 percent while protecting the funding levels for highways?

ANSWER: We were reluctant to offer any reductions in the stimulus package, but two reasons for not offering a reduction in the proposed increase for highways were that this element of the package enjoyed comparatively broad support in the Senate and that, as a result of changes made by ISTEA, highway funding is the most flexible; that is, an increase in highway funding offers State and local governments the most choices in meeting their particular infrastructure needs.

SENATOR LAUTENBERG: Given that we will likely be unable to fully fund your budget request for FY 1994, should we assume that you will want us to fully fund the highway program, even if it comes at the expense of your requested funding for transit, Amtrak and airports?

ANSWER: You should not make that assumption. We will want to work closely with the Committee to accommodate as much of our total budget request as possible. But we have proposed increases in all our infrastructure programs, and, if all those increases cannot be accommodated, we will want to be sure there is an appropriate balance among the modes in the final figures.

SENATOR LAUTENBERG: Do you have data indicating that highway spending produces a greater number of jobs per dollar than Amtrak spending, airport spending, or transit spending?

ANSWER: In general, there is reason to believe that there are differences in the job-creation impact of different categories of capital investment; for example, highway construction generates more jobs than manufacture of rolling stock. However, our estimates of job impacts are not exact enough to reliably predict that highway investment will produce more jobs than comparable investment in Amtrak, airports, or transit.

IVHS RESEARCH FUNDING

SENATOR LAUTENBERG: Mr. Secretary, the administration has requested an additional \$70 million for research on intelligent vehicle/highway systems (IVHS) in FY 1994, for a total program of \$100 million. What prompted this request? What types of programs or areas would you like to see receive this funding?

ANSWER: The Administration requested a total of \$100.8 million for General Operating Expenses of FHWA's IVHS program. This \$70 million increase over the FY 1993 baseline is in response to our recognition that the Federal government must invest more in the infrastructure and future of our country. Money invested in IVHS will

provide a return of benefits in the form of reduced congestion, reduced pollution, and increased safety. These benefits will be translated into money saved in the future.

The specific funding will go toward developing an Automated Highway System and a Commercial Vehicle Network, converting Defense technologies to civilian use, and funding additional operational tests and research and development to hasten the development (and therefore the benefits) of all IVHS technologies. Further detail on the use of these funds is found in the budget justifications for the Federal Highway Administration.

SENATOR LAUTENBERG: Some of the IVHS money that has been used in the Corridors Program for field application has been used on technology that is not American built, or that is existing off-the-shelf types of technology. Do you believe there should be "Buy America" requirements for IVHS technology purchased with Federal funds? Please provide for the record a listing by field project the types of systems being installed and the main components of that system, and whether they use American-made and American-built equipment.

ANSWER: There currently are "Buy America" provisions in the Surface Transportation Assistance Act of 1982 (23 U.S.C. 101 Note) as amended by ISTEA that apply to the IVHS program. However, these provisions include three exceptions: 1) for products not produced in the United States in sufficient quantity or quality, 2) for domestic material that will increase the cost of the project by more than 25 percent (10 percent if it involves purchasing vehicles), and 3) if the provisions would be inconsistent with the public interest. Nonetheless, the vast majority of the materials used in IVHS projects are, in fact, American-made.

Examples of imported equipment include navigation and route guidance devices manufactured in Germany and used in the Pathfinder and Fast-Trac IVHS Operational Tests, Canadian-made weigh-in-motion devices used in a number of Commercial Vehicle Operation projects, and adaptive traffic control systems developed in the United Kingdom and Australia. This use of foreign equipment is necessary if we want to avoid reinventing the wheel for every technology.

Corridor Program projects help create an American market for the IVHS technologies involved. For example, American firms such as Motorola and Delco Electronics have in-vehicle route guidance devices planned for deployment at least in part as a result of their participation in IVHS Operational Tests. The small number of foreign devices that have been purchased with the Corridor Program funds also help to expose the public to the benefits of IVHS and help to create an American market for such devices that an American manufacturer can subsequently fill.

SENATOR LAUTENBERG: What do you believe are the critical research questions that must be answered before we can see the full deployment of IVHS technologies?

ANSWER: The IVHS program is not one for which a major breakthrough is required in order for it to work. IVHS involves the adaptation of advanced surveillance, communications, and data management, processing and display technologies to solving surface transportation problems. The key research questions do not involve development of new technologies, but address new applications of evolving technologies. The key technical research questions involve developing IVHS services that are designed to meet user needs, determining the best system concepts for providing these services under the framework of a national system architecture, and determining the effectiveness and safety of different enabling technologies for providing the services. Other key research questions involve the resolution of institutional issues such as government procurement policy, public/private issues such as intellectual property rights, and legal issues such as liability, that all may hinder IVHS deployment.

ELIMINATION OF APPROPRIATED HIGHWAY DEMONSTRATION PROJECTS

SENATOR LAUTENBERG: Mr. Secretary, your budget proposes the elimination of single-purpose highway programs that receive appropriated general fund money. In FY 1993, these programs received about \$350 million. However, your budget proposal does not call for the reduction or elimination for similar types of highway projects that were granted trust fund dollars in the Intermodal Surface Transportation Efficiency Act (ISTEA). Do you believe there is any real distinction between those highway demonstration projects that are granted trust fund dollars in ISTEA and those that received appropriated general funds from this Committee in the past?

ANSWER: There is no way to generalize about demonstration projects, whether they are in authorization legislation or annual appropriations acts. Each project would have to be reviewed on its individual merits. The best way to ensure such a review is to let projects for which funds are sought go through the normal project selection procedures that each State must have.

SENATOR LAUTENBERG: Mr. Secretary, of those highway projects receiving appropriations, over 65 percent of the funding went for projects that were authorized, and therefore were eligible for general fund appropriations. Why shouldn't the Committee consider legitimate funding requests for highway projects that are authorized?

ANSWER: Specific demonstration projects that have been authorized in authorization legislation, like those that have been provided contract authority, often have not been through the normal State project selection process, and their priority for funding has not been

established by that process. We generally believe that project selection should be left to State and local officials, rather than established in Federal statute.

SENATOR LAUTENBERG: Do you believe projects that are slated to receive contract authority through ISTEA authorization are more legitimate, more worthwhile, or more cost-beneficial than those authorized to receive general fund appropriations? If so, why? If not, why didn't you call for a similar reduction in those projects as a way of reducing costs?

ANSWER: Such a generalized statement about either projects provided contract authority or authorized for general fund appropriations cannot be made. We have not proposed to rescind contract authority already provided in ISTEA, but we have proposed that there be no new funding for demonstration projects in the appropriations bill. There is inequity in our proposal, which reflects the difficulty of revisiting "automatic" funding in authorization bills compared to making recommendations for decisions in annual appropriations bills.

SENATOR LAUTENBERG: In a hearing that we conducted March 31, witnesses -- including the GAO, the acting administrator of the Federal Highway Administration, and highway association representatives -- agreed that it was not fair to reduce the regular Federal-aid highway program below the authorized level while other programs, like ISTEA demonstration projects and the Minimum Allocation program, received full funding. Do you agree with their assessment?

ANSWER: Our FY 1994 proposal is for an obligation limitation on the Federal-Aid Highways program equal to that established in ISTEA and that ISTEA demonstration projects and the Minimum Allocation program would be exempt from the obligation ceiling per ISTEA and in accordance with past practice in appropriations acts. If the Committee were to reduce the obligation limitation from the level we have proposed, we would want to consult with you on the appropriate treatment of ISTEA demonstration projects and the Minimum Allocation program. Fairness would seem to suggest some reduction in the funds available for those programs in that case.

DEPARTMENT OF DEFENSE TRANSFERS

SENATOR LAUTENBERG: For the last several years, the Appropriations Committee has provided roughly \$300 million of the Coast Guard budget from funds appropriated by the Defense Appropriations subcommittee. This was done in recognition of the many defense-related activities conducted by the Coast Guard. Last year, the Bush Administration requested defense funding for the Coast Guard in its FY 1993 budget request. Why does your budget request that no Defense funds be provided to the Coast Guard?

ANSWER: The President's Budget did not use Defense funds to help fund Coast Guard because of the single cap

on discretionary spending. Full funding in function 400 has always been our stated position as the proper way to fund the Coast Guard.

As the Nation's fifth armed service, unquestionably, the Coast Guard performs a very significant and important role in the national defense. However, as an agency within the Department of Transportation, many other missions are performed that are also not Defense-related. Full funding in function 400 avoids among other things: potential appropriations subcommittee (Defense vs Transportation) jurisdictional overlap, conflicting amounts from the Department of Defense for each account subject to each subcommittee's actions, and strained relations between the Coast Guard and the Department of Defense. Another consideration was the removal of the "fences" between the defense, domestic, and international discretionary accounts under the provisions of the Budget Enforcement Act. In these tight fiscal times, funding from the DOD has ensured that critical Coast Guard missions and programs would continue.

SENATOR LAUTENBERG: Many Coast Guard cutters still spend some considerable time participating in joint military exercises with the Navy. Why, if your budget is requesting no funding from the Defense Department for the Coast Guard, should Coast Guard cutters participate at all in these operations?

ANSWER: The joint military exercises conducted with the Navy are necessary to ensure the Coast Guard is ready to meet its defense readiness mission set out in Title 14 of the U. S. Code (USC). This requirement stands, regardless of the funding source. 14 USC 145 requires the Secretary of Transportation to provide for this training to ensure the Coast Guard is ready to operate with the Navy. This ability to operate with the Navy is also used for peacetime missions. Current examples of Coast Guard/Navy joint operations include Alien Migrant Interdiction Operations (AMIO) in the Caribbean, drug interdiction operations in the deep Caribbean (JTF 4.1), and Maritime Intercept Operations in support of United Nations sanctions against Iraq and the republics of Serbia and Montenegro of the former Yugoslavia.

SENATOR LAUTENBERG: Are these defense-related activities likely to increase, decrease, or remain the same in the coming year?

ANSWER: The level of effort for these joint military exercises is expected to remain the same for fiscal year 1994. Beyond that, if the Navy reduces the frequency or length of these exercises, there will possibly be a small reduction in the number of days spent on this training due to scheduling conflicts. However, since these exercises are one of the primary means for maintaining Coast Guard/Navy interoperability, we will continue to participate to the maximum extent possible. The Coast Guard will continue to balance the training resources available between fleet exercises and other contingency training exercises.

COAST GUARD DEFENSE ACTIVITIES AND THE NEW WORLD ORDER

SENATOR LAUTENBERG: Your budget request for the Coast Guard proposes to cut the Reserves by 24 percent. This proposed reduction grew out of a reassessment by the Coast Guard of its likely wartime requirements. However, except for the termination of a few billets involved in anti-submarine warfare, the Coast Guard proposes no defense-related budget savings in the active duty Coast Guard. If the end of the Cold War indicates that we can cut the Coast Guard Reserves by 24 percent, why isn't there more savings to be found in the active duty Coast Guard?

ANSWER: While the size of the Coast Guard Reserve is defined almost entirely by defense mobilization requirements which were recently revised, the size of the active duty force is driven by all multi-mission requirements. Therefore, a direct correlation between the relative size or change in size of each would have little meaning.

The FY 1994 Coast Guard budget request does, in fact, cut defense-related support costs. In Operating Expenses, Coast Guard is proposing to cut over \$9 million as a result of the decision to turn over operation of overseas LORAN stations to Host Nations. Also, in FY 1994, Loran C facilities in the Far East will be shut down. Also, in FY 1993, Coast Guard took a reduction of \$1.4 million in closing the Central Pacific LORAN chain. In addition, Coast Guard plans to save over \$6 million annually (\$5.8M in FY 1994) by removing -- and no longer having to operate -- antisubmarine warfare (ASW) equipment from its twelve "Hamilton" Class 378' High Endurance Cutters, as the result of a joint Navy/Coast Guard decision. The Coast Guard will also reduce operating costs by eliminating the Navy-furnished Harpoon surface-to-surface missile system from its 378' cutters.

One of the Commandant's goals is to ensure that Coast Guard maintains the proper balance among its varied missions. He sees this as a continual process capable of responding to changing national priorities. This includes reviewing defense readiness and mobilization requirements and recommending appropriate actions. The proposal to reduce Coast Guard Reserve strength significantly in FY 1994 is evidence of this process at work, as are the actions cited above.

The Coast Guard is a multi-missioned armed service. Many of its operating platforms and personnel are capable of responding to a broad range of national defense or defense-related contingencies as well as conducting domestic peacetime missions. However very few platforms and personnel are devoted entirely to one specific mission. Because of this characteristic, Coast Guard resources cannot always be offered up when a mission area is de-emphasized. However, when resources can be identified as performing a single mission which is no longer required, as is the case for the anti-submarine warfare resources, a reduction becomes appropriate.

DEFICIENT FOREIGN FLAG STATES/CLASSIFICATION SOCIETIES

SENATOR LAUTENBERG: Mr. Secretary, in the area of maritime safety, we depend on the foreign flag nations to ensure compliance with international safety and pollution treaties. However, the record indicates that numerous foreign flag nations do a very poor job at ensuring compliance by their ships when they enter U.S. waters. What steps are being taken by the Coast Guard in cracking down on foreign flag nations who sign international safety and pollution treaties and do nothing to implement or enforce them?

ANSWER: The Coast Guard has been one of the driving forces in the establishment of the Flag State Implementation Subcommittee at the International Maritime Organization (IMO) to deal with the issue of implementation of treaties from both the compliance and the technical assistance aspects. The first subcommittee meeting in April 1993 produced three sets of guidelines to assist in reducing the use of substandard ships. These guidelines outline Flag State responsibilities, responsibilities of Flag States in delegating authority, and standards for those organizations that authority will be delegated to.

Coast Guard has also altered our MARPOL (Maritime Pollution) enforcement policy. Since July 1992, the Coast Guard's policy on MARPOL V (Marine Plastic Pollution Research and Control Act) enforcement has been to prosecute all cases against vessels, both foreign or domestic, where it can be proven that violations have occurred within the navigable waters of the U.S. or the EEZ (Exclusive Economic Zone). This action was driven by a continued lack of information from flag states on actions they had taken on cases forwarded to them, which the Department of Transportation found unacceptable.

SENATOR LAUTENBERG: Most foreign flag nations depend on "classification societies" to certify compliance by their ships with international safety and pollution treaties. The Coast Guard Chief of Marine Safety stated last year that there are many "tinker toy" classification societies that are willing "to put a compliance stamp on a ham sandwich". If this is the case, why do we let ships that are no safer than a ham sandwich enter U.S. waters?

ANSWER: The Coast Guard targets its limited vessel boarding resources to vessels that are believed to pose the greatest risk to our ports and waterways. The Coast Guard maintains a history of Coast Guard examinations for each vessel. Examination results are recorded in the Coast Guard Marine Safety Information System (MSIS) computer database. A vessel's MSIS record and history is reviewed upon notice of a vessel's pending arrival at a U.S. port. Each ship is evaluated on a case-by-case basis. If a vessel's record and history indicate that the vessel should be denied entry into U.S. waters, the Coast Guard has the authority to direct the vessel to remain outside U.S. waters. When a vessel is allowed

entry into a U.S. port, the MSIS data is used to prioritize the Coast Guard's Port State Control Examination program. This program ensures that vessels utilizing U.S. ports meet the applicable United States and international safety standards. The scope of these examinations is increased based on the condition of the vessel and whether "clear grounds" as defined in IMO Resolution 681(17) exists. When deficiencies are found, appropriate action is taken, which may include: civil penalties, operational restrictions, requiring temporary or permanent repairs, or formal intervention under international treaty authority. When formal intervention is conducted, the Coast Guard notifies the flag state and classification society of the deficiencies and reports the particulars of the intervention to the International Maritime Organization.

SENATOR LAUTENBERG: The International Maritime Organization (IMO) is attempting to address the issue of deficient flag states and classification societies. However, the IMO is notoriously slow in bringing about real change by its members. How long do you think we will have to wait before we see the international community crack down on deficient flag states and classification societies?

ANSWER: IMO has recently formed the new Flag State Implementation Subcommittee specifically for the purpose of addressing the issues noted in your question. The members of IMO are fully cognizant of the immediacy of this problem, and have acted with great dispatch. The first subcommittee meeting in April 1993 produced three sets of guidelines to assist in reducing substandard ships. These guidelines outline Flag State responsibilities, including delegating authority, and standards for those organizations delegated authority. These guidelines will be forwarded to the 18th assembly in October 1993 for adoption as Assembly resolutions. The resolutions will press for immediate adoption of the guidelines. In addition, the subcommittee completed guidelines for operational port state control inspections which will increase the emphasis on identifying substandard ships.

ENFORCEMENT OF PLASTICS DUMPING TREATY (MARPOL V)

SENATOR LAUTENBERG: The Justice Department just announced that a cruise ship line will pay the maximum penalty allowed under Federal law (\$500,000) as part of a guilty plea stemming from illegal dumping of plastic garbage off of a cruise ship. Last year, this subcommittee pointed out that many foreign flag nations were doing little or nothing to prosecute cases of plastics dumping that were forwarded to them by the U.S. Coast Guard. As a result, the Justice Department has begun prosecuting these foreign flag ships under U.S. law. Should we expect to see many more cases where foreign flag ships are finally being punished under U.S. law for plastics dumping?

ANSWER: Yes. Since July 1992, the Coast Guard policy has been, and will continue to be, to prosecute any case against a vessel, foreign or domestic, where it can be proven that the violation occurred within the navigable waters of the U.S. or the Exclusive Economic Zone (EEZ). These cases are either forwarded to a Coast Guard hearing officer for consideration of a civil penalty or forwarded to a District legal officer for review and possible referral to the Department of Justice, depending on the severity of the case and the evidence available. In addition to the case just settled for \$500,000 in Miami, a second case involving a fish processing vessel was settled in Seattle for \$150,000. Three other MARPOL V cases have been referred to the U.S. Attorney in Florida and the Coast Guard is preparing evidence for referral in several other cases. Each of these cases could result in a fine of up to \$500,000.

SENATOR LAUTENBERG: The Coast Guard has stated that they are giving each foreign flag nation a six-month period to demonstrate they are prosecuting plastics dumping violations before we prosecute these ships under U.S. law. Can you tell me how many foreign flag nations the Coast Guard has determined do not adequately prosecute plastics dumping cases?

ANSWER: The Coast Guard has not been able to determine how many foreign flag nations adequately prosecute plastics dumping cases. The Coast Guard did not receive sufficient, reliable information from flag states to determine which countries adequately prosecute MARPOL V cases. With this in mind, in July 1992 the Coast Guard shifted from flag state to port state enforcement wherever U.S. jurisdiction could be established. This action was driven by a continued lack of information from flag states on actions they had taken on cases forwarded to them, which we found unacceptable.

PROPOSED DECOMMISSIONING OF COAST GUARD UNITS

SENATOR LAUTENBERG: Your FY 1994 budget requests only two percent growth for Coast Guard operating expenses. The budget proposes to expand funding for fisheries enforcement and programs to improve the worklife of Coast Guard members by decommissioning certain Coast Guard units, including LORAN stations and a Great Lakes icebreaker -- the MACKINAW. Should we expect the administration to request the decommissioning of other Coast Guard units in future budgets?

ANSWER: The Administration is attempting to reduce the federal budget deficit. The initial effort began with the fiscal year 1994 budget submission with the elimination of cost-of-living adjustments and reductions in personnel and administrative expenses.

Additional government-wide deficit reduction opportunities may become apparent later this year depending upon the results of the Administration's Performance Management Review as well as other program specific reviews, such as the one being conducted by the

National Security Council on international law enforcement interdiction strategy.

In order to fund new initiatives in support of changing national priorities, along with uncontrollable cost increases and capital follow-on requirements, agencies will certainly be expected to achieve efficiencies, some of which may be in the form of unit decommissionings.

SENATOR LAUTENBERG: What type of Coast Guard units are likely to be proposed for closure in coming years?

ANSWER: The following efforts, which are under review within the Coast Guard, may produce unit closures or consolidations:

A. The Coast Guard is planning to close or transfer to host nations, all overseas LORAN C stations by December 31, 1994: five stations in the Northwest Pacific, four stations in Northwest Europe, three stations in Greenland and Iceland, and four stations in the Mediterranean.

B. While we do not know the final outcome of the Defense Base Closure and Realignment Commission recommendations, the Coast Guard may have to disestablish or relocate units which are currently collocated or dependent on DoD facilities for support.

C. There is a possibility that some Reserve units will close. The proposed FY 1994 Reserve Training appropriation will require a reduction of 2,500 Selected Reservists. A downsizing of that magnitude is expected to generate Reserve unit consolidations and/or closures.

D. The Coast Guard is conducting a mission analysis for its coastal patrol boat capability requirements. The current eighty-two foot Point class patrol boats (WPB's) are reaching the end of their service lives. The outcome of this mission analysis will be used to determine future resource requirements, if any, and will be used to determine if it is possible to reduce the current fleet of Point class patrol boats prior to their possible replacement.

E. The Coast Guard is also developing a Unit Change Guide in response to the 1988 GAO audit which indicated a better process was needed to justify closing small boat stations. The guide will be used to review small boat units to determine if changes are in order.

F. As the replacement sea-going and coastal buoy tenders come on line, the (more numerous) units that they are replacing will be decommissioned.

SENATOR LAUTENBERG: Given the tight funding envelope we will have this year, are there certain additional Coast Guard functions that you believe we can terminate in FY 1994?

ANSWER: The Coast Guard is consolidating and automating communication stations. The first installment on those efficiencies is in the FY 1994 budget. In addition, the Coast Guard is continually evaluating the need to retain facilities in light of changing mission

requirements. The potential for unit consolidations and other organizational restructuring will be considered including telecommunications system automation and streamlining.

The Coast Guard's goal is to make government more effective and efficient. The requirements analysis and mission analysis described above should produce some efficiencies. However, it would be premature to be more specific on unit closures other than those mentioned above until the requirements and/or mission analyses have been completed.

SELECTED READY RESERVE STRENGTH

SENATOR LAUTENBERG: The FY 1994 budget that you submitted for the Coast Guard includes a 24% personnel reduction in the Selected Reserve from 10,500 members in FY 1993 to 8000 in 1994. The rationale for this reduction was apparently in large part based on the reduced military threat with the new world order resulting from the end of the "cold war." Other than the \$5.838 million Category I savings from reduced anti-submarine warfare capabilities, what other "post cold war" reductions do you foresee?

ANSWER: We do not foresee any further decrease in the Reserve Training appropriation.

The FY 1994 Coast Guard budget request does, in fact, cut other defense-related support costs. In Operating Expenses (OE), Coast Guard is proposing to cut over \$9 million as a result of the decision to turn over operation of overseas LORAN stations to Host Nations. Also, in FY 1994, Loran C facilities in the Far East will be shut down. In FY 1993, Coast Guard took a reduction of \$1.4 million in closing the Central Pacific LORAN chain. As you indicated, Coast Guard plans to save over \$6 million annually (\$5.8M in FY 1994) by removing -- and no longer having to operate -- antisubmarine warfare (ASW) equipment from its twelve "Hamilton" Class 378' High Endurance Cutters, as the result of a joint Navy/Coast Guard decision. The Coast Guard will also reduce operating costs by eliminating the Navy-furnished Harpoon surface-to-surface missile system from its 378' cutters.

We do not foresee any other significant defense related reductions in the Coast Guard's Operating Expenses appropriation at this time. However, the Coast Guard is currently reviewing its Maritime Defense Zone requirements which may produce a small number of personnel savings from the Sectors that have been deactivated.

SENATOR LAUTENBERG: Do you anticipate any major organizational changes either internally within the service or externally in the Coast Guard's relationships with other DoD services as a result of this "new world order"?

ANSWER: We do not anticipate any major changes internally within the Coast Guard. Externally, some

changes have already taken place, and more are possible as DOD shifts its emphasis from defending against a global conflict to that of responding to overseas regional contingencies. This change in focus has implications on organizations established for the defense of the continental U. S. and U. S. territories. The Maritime Defense Zone (MDZ) organization was reviewed in the Atlantic Region as a result of a "Way Ahead" study conducted in 1991. A follow up "Way Ahead" study intended to continue looking at the entire MDZ organization and how it fits into current and future scenarios, will be conducted in 1993. Another change in the Coast Guard/DOD relationship which has manifested itself recently results from the 1986 Goldwater - Nichols Reorganization Act. This act gave the regional Commander in Chiefs (CINCs) combat command of all military forces within their geographic areas. As a result, we are working more closely with the CINCs than we had before, and now receive requests for Coast Guard support from them, rather than from the Navy.

A Coast Guard/Navy permanent joint working group and the Navy/Coast Guard (NAVWARD) board continue to refine how the Coast Guard can best augment Navy efforts to support national defense and security requirements. The overall intent is to eliminate duplication, look for operational cost effectiveness, and to provide service to the CINCs using capabilities best maintained by the respective armed forces.

SENATOR LAUTENBERG: The Coast Guard's major cutters have in past years, in support of the services Defense Readiness responsibilities, participated in joint U. S. Navy exercises and comprehensive military readiness training at U. S. Navy Fleet Training Groups (FTG). Will the Coast Guard's level of major cutter participation in defense related exercises and training scenarios be reduced in the future to a level reflective of the reduced threat?

ANSWER: The Coast Guard's participation in defense-related exercises and training scenarios will not be reduced unless funding limitations force the Navy and DOD to reduce the frequency and length of these exercises. The level of participation in military exercises is not driven by a particular threat. It is intended to maintain interoperability with DOD forces, allowing the Coast Guard to operate jointly with them to conduct peacetime missions, respond to peacetime contingencies, and to minimize the time necessary to shift to a service in the Navy when so required. Reduction of the current level of participation in either fleet exercises or Fleet Training Group (FTG) training will have a detrimental effect on the Coast Guard's ability to operate jointly with the other military services and will also negatively impact our peacetime missions. A significant portion of FTG training is in damage control which can result from a variety of reasons other than battle damage, such as a shipboard fire or flooding. Other primary training areas

are engineering casualty control, communications, and navigation. Training of this type is required to ensure the safe and efficient operation of cutters in both peace and war. If the cutters did not receive this training at the FTGs, the same training would have to be provided by Coast Guard resources. In addition, some military exercises provide other direct benefits to national security efforts. Some fleet exercises such as UNITAS (a South American Training Cruise) and the West African Training Cruise (WATC) provide important opportunities for assistance to developing nations.

SENATOR LAUTENBERG: Will the reduced defense readiness taskings of these cutters allow the decommissioning of any major cutters and a reduced Coast Guard fleet?

ANSWER: The number of cutters we currently operate is driven primarily by all the Coast Guard's mission requirements, not just the potential wartime taskings. The Defense Readiness mission of the Coast Guard consumes relatively little Coast Guard resources. For example, in FY 1994, it is estimated that 4.8% of the Coast Guard Operating Expenses appropriation will be used to support the Defense Readiness mission. That figure has changed only slightly since FY 1988, when 5.5% of Operating Expenses went to the Defense Readiness mission. Thus, approximately 95% of cutter operating time was devoted to other Coast Guard missions. These percentages are expected to remain relatively constant in the coming years.

SENATOR LAUTENBERG: Do you feel that with the decreased military threat, the need for the Coast Guard's defense responsibilities issues are still justified?

ANSWER: The Coast Guard's defense responsibilities are justified and necessary. DOD is working to identify operational efficiencies within the armed forces. The Navy is facing major fleet reductions and will need to find new, creative ways to meet their forward deployment commitments. Regional contingencies can be expected to continue if not increase for the foreseeable future. The United Nations is asserting its role as world wide peacekeeper. As a multi-mission force, the Coast Guard operates assets which are used every day to advance the national security interests of the United States. Because of their multi-mission nature, they are an extremely cost effective national defense asset which maintains interoperability with existing Navy/DOD forces. The Coast Guard has core competencies developed from daily peacetime operations that quickly translate into specific, necessary national defense capabilities. Expertise developed from Maritime Law Enforcement Operations, for example, has been applied to conduct maritime interception operations to enforce maritime embargoes.

ENFORCEMENT OF SAFETY/POLLUTION TREATIES BY FOREIGN FLAGS

SENATOR LAUTENBERG: The primary checks to ensure that vessels meet international safety standards are accomplished through inspections by flag nations and/or surveys by classification societies. Foreign flag vessels that enter U.S. ports are additionally boarded by the U.S. Coast Guard at regular intervals, as an exercise of port state control authority, to ensure that the required international inspections have occurred. At times these port state control inspections have revealed that the flag nations or classification societies did not fully identify or adequately resolve all problems that affect a ship's safety. One of the major problems is that although a standard set of international safety standards exists, the standards allow sufficient flexibility in interpretation and implementation to result in a widely diverse set of standards when actually applied. Wide disparity between various flag countries enforcement practices further exacerbate the actual differences in safety levels between ships from various countries. Given the potential for disparate safety levels between U.S. and foreign flagged ships, should the U.S. continue to accept verification from flag nations or classification societies that have less than a respectable safety history. Should the U.S. increase their scope of inspection on these vessels?

ANSWER: The Coast Guard Port State Control Examination program is based on the premise that any ship from any flag state inspected by any classification society may not meet the applicable United States and international safety standards. The Coast Guard therefore maintains a history of Coast Guard examinations for each vessel. Examination results are recorded in the Coast Guard Marine Safety Information System (MSIS) computer database. A vessel's MSIS record and history is reviewed upon notice of a vessel's pending arrival at a U.S. port. Each ship is evaluated on a case by case basis. If a vessel's record and history indicates that the vessel should be denied entry into U.S. waters, the Coast Guard has the authority to direct the vessel to remain outside U.S. waters. When a vessel is allowed entry into a U.S. port, the MSIS data is used to prioritize our Port State Control Examination program. The Coast Guard targets our limited vessel boarding resources to vessels that we believe pose the greatest risk to our ports and waterways. The Port State Control Examination program ensures that vessels utilizing our ports meet the applicable United States and international safety standards. The Coast Guard does increase the scope of these examinations based on the vessel history, the condition of the vessel and whether "clear grounds" as defined in IMO Resolution 681(17) exist. When deficiencies are found, appropriate action is taken. Action taken may include civil penalties, operational restrictions, requiring temporary or permanent repairs, or formal intervention under international treaty authority. When formal intervention is conducted, the

Coast Guard notifies the flag state and classification society of the deficiencies and reports the particulars of the intervention to the International Maritime Organization.

SENATOR LAUTENBERG: In your view, are the potential savings from reduced Coast Guard boardings due to internationally harmonized marine safety inspections worth the possible risk in safety from reduced oversight?

ANSWER: The Coast Guard does not intend to reduce its oversight of foreign vessels due to harmonization. There will be no increase in risk regarding safety. Harmonization will not decrease the number of boardings. Harmonization may decrease the amount of time spent on boardings due to standardization. This will result in more effective examinations and efficient use of resources.

ADMINISTRATIVE STREAMLINING

SENATOR LAUTENBERG: As part of President Clinton's effort to reduce the cost of government, he proposed an "administrative streamlining" program that included a 100,000 reduction in the federal civilian workforce by 1995, with 10% coming from the ranks of management. Given the Coast Guard's longstanding history of fully integrating their civilian employees in critical positions, and in consideration of the Coast Guard's non-defense related mission emphasis, will not the reduction of the civilian workforce within the Coast Guard upset a delicate balance between the civilian and military workforce?

ANSWER: As its share of President Clinton's effort to reduce the federal civilian workforce by 100,000 by 1995, the Coast Guard will be reducing its civilian workforce by 4% over the course of the next three years. This will equate to 258 full-time positions. Over the last four years, the ratio of military to civilians in the Coast Guard has actually decreased from 6.8:1 to 6.1:1. With respect to the military/civilian workforce balance, assuming the size of the military workforce remains relatively constant after the planned reduction of 486 full-time positions in 1994, the ratio of military to civilian would rise slightly to 6.3:1 by the end of 1995. Although the civilian workforce reduction slightly reverses the trend experienced over the last four years, the military to civilian ratio remains below the level of four years ago. We do not expect a reduction of this magnitude to upset the balance. We recognize the importance of managing these reductions so as to maximize efficiency, and minimize the impacts on public service, and our people.

SENATOR LAUTENBERG: The Coast Guard has always relied on the valuable historical knowledge of their civilian workforce given the large percentage of Coast Guard missions which evolve around law enforcement and regulatory administration to ensure fair and consistent

standards. Recognizing that the standard military staff tour is only four years in length, who will maintain corporate knowledge previously held by these civilians?

ANSWER: The Coast Guard's share of President Clinton's effort to cut the federal civilian workforce by 100,000 by 1995 equates to 258 positions over the next three years. We will seek to manage attrition in a manner that achieves reduction while maintaining fairness and consistency in mission performance. With respect to the loss of corporate knowledge through military transfers, although the standard military tour is four years, the vast majority of units are comprised of multiple military billets that do not rotate simultaneously. In addition, military personnel are typically assigned to repeated duties in the same specialty, often at a higher pay grade, further mitigating this concern.

SENATOR LAUTENBERG: Do you feel that an across the board 14% administrative cut to the Coast Guard can be accomplished without affecting operational missions given that typically administrative costs to most agencies such as communications and computer systems are used for operational Coast Guard missions such as directing CG SAR efforts and tracking merchant vessel safety deficiencies?

ANSWER: The Coast Guard's Operating Expenses appropriation will be subject to the majority of the reduction in administrative expenses. Assuming enactment at the level of the President's request, the Coast Guard does not expect the fiscal year 1994 reduction to have an adverse impact on public service. Activities that can be quickly scaled back, such as travel and conferences have been targeted for reduction.

It is expected that the balance of the administrative efficiencies will be achieved in part through carefully managed organizational re-engineering, energy conservation and voice/data communications reductions. We are assessing the efficiencies that could be achieved to support further reductions in the outyears in the other administrative related areas which include: transportation, communications, utilities, postal services, printing and reproduction, consulting and other services, and housekeeping.

STATUS OF OIL POLLUTION REGULATIONS

SENATOR LAUTENBERG: Last year, the Coast Guard testified that President Bush's regulatory moratorium had no effect in delaying the issuance of regulations stemming from the Oil Pollution Act of 1990 (OPA 90). Even so, there are several critical rulemakings that have yet to be finalized, two and a half years after the law was signed. When can we hope to see the rulemaking on financial responsibility of tanker owners, which is at the heart of the purposes of the Oil Pollution Act?

ANSWER: The Coast Guard is evaluating all Notice of Proposed Rulemaking (NPRM) comments and has also prepared a Preliminary Regulatory Impact Analysis (RIA), which

should be made available to the public soon. The RIA will have a 60 day comment period. About 300 comments to the NPRM were received, most unfavorable. Many comments on the Preliminary RIA can be expected. After evaluation of these comments, we will make our decision on the final rule.

One of the major issues is whether OPA 90 provides regulatory flexibility to accept Protection and Indemnity (P&I) Club membership as evidence of financial responsibility without the P&I Club being subject to direct action. The Coast Guard is still evaluating potential options, although the difficulty is in promulgating requirements that will assure prompt payment of removal costs and damages to the limits of liability, and accord with OPA 90.

Until new rules are published, financial responsibility is being documented at the lower levels of the preexisting laws, but liability is at the new, higher OPA 90 levels. Vessel owner/operators normally carry insurance well in excess of OPA 90 limits, but the coverage is subject to a host of defenses and exclusions just as any non-guaranteed coverage would be.

SENATOR LAUTENBERG: I was instrumental in establishing a mandate in the Oil Pollution Act requiring that the Coast Guard consult a national driver register to ensure that they are not granting a merchant mariners license to individuals with a drunk driving record. When can we expect to see a final regulation implementing this requirement?

ANSWER: The NPRM was published in September 1991. However, since the Federal government cannot access the NDR directly, it must be accessed through participating States. DOT is considering offering for reintroduction legislation to amend Section 307 of the NDR Act 1982 to allow Federal agencies direct access to the NDR. Similar legislation was introduced by DOT in 1992; the measure was passed by the House but the Senate failed to approve it.

QUESTION SUBMITTED BY SENATOR BYRD

WEST VIRGINIA PROJECTS

SENATOR BYRD: Mr. Secretary, there are several projects under the jurisdiction of the Federal Aviation Administration that are very important to me and the State of West Virginia. Please provide for the record the significant milestone events leading to full completion of: (1) the Benedum Airport runway extension, (2) the Martinsburg radar, and (3) the Mid-Atlantic Aviation Training and Education Center. In addition to providing the significant milestone events with description of the project, please provide a record of the costs involved and whether additional funds are necessary for successful completion.

ANSWER: The information follows:

1) Benedum Airport Runway Extension

Received sponsor's application for land acquisition and design, September 11, 1992. Letter of Tentative Allocation sent to sponsor, December 28, 1992. Actions to be completed: Sponsor submits Project Application; FAA transmits Grant Offer to Sponsor; Sponsor executes Grant Agreement; Consultant begins design of extension; National Guard reviews design and determines what it can do; FAA reviews National Guard information and makes funding decision; if funding available, Sponsor submits preapplication for construction; FAA issues Tentative Allocation; Sponsor takes bids for construction; Sponsor submits project application; FAA issues Grant offer; Sponsor executes Grant Agreement; Runway extension is constructed. The sponsor expects design work to begin later this summer with completion in 6-8 months. The estimated cost of the runway extension is \$28 million.

2) Martinsburg, West Virginia ASR-9 Radar

Actions to be completed:

Complete site preparation	- October 1994;
Deliver ASR-9 radar	- November 1994;
Operational readiness	- March 1995;
Commission radar	- June 1995

The 3-month period between operational readiness and commissioning is to conduct operational test and evaluation to ensure that the radar performs adequately and that logistical elements are in place. The total cost to establish the ASR-9 radar at Martinsburg is \$22.5 million: \$7 million appropriated in FY 1991; \$14.5 million in FY 1992; and \$1.5 million in FY 1993. No additional funding is required to complete the project.

3) Mid-Atlantic Aviation Training and Education Center

As directed by Congress, a \$3 million grant to Fairmont State College for site acquisition, construction, equipment, and personnel costs was awarded in September 24, 1990. Construction began in August 1992. Completion is projected for July 1993. To date, FAA has reimbursed FSC a total of \$1.6 million. Also, Congress directed in FY 1991 that FAA award \$300,000 to FSC for the acquisition of computer hardware and software and aircraft/avionics system training simulation equipment. The grant agreement was signed on October 5, 1992. The majority of equipment is on order. To date, no requests for payment have been submitted to FAA. The FAA is not aware of additional funding requirements.

QUESTION SUBMITTED BY SENATOR HARKIN

TRANSIT DRUG TESTING

SENATOR HARKIN: I do believe that we need to move forward with testing of employees who operate and work on transportation vehicles, properly protecting individual rights and maximizing the accuracy of the process.

However, there is a specific concern with rural transit systems--I am not talking about rural as defined by DOT, cities under 50,000. I am talking about really rural systems! In Iowa, I am proud to say that almost the entire rural area of the state has some access to transit. The rural systems, such as the one in Creston and Decorah each operate in a 3,500 square mile area with the largest city having a population of about 8,000 people.

These rural systems have vehicles stationed in very small towns. There is no transit garage or transit employees to fix their vehicles. They pull into "Joe's garage". The trouble is that Joe might not feel that all of his mechanics should go through this process in order to occasionally work on one or two vehicles. The result may be that maintenance will deteriorate and costs will rise as vehicles may have to be driven or towed 50 miles to be serviced.

I would appreciate your looking into this problem.

ANSWER: The Department is well aware of this problem. We have received a number of comments on this issue as result of the Department's December 15, 1992 notice of proposed rulemaking on drug and alcohol testing for the transit industry. In addition, the Department held public hearings on the rulemaking action where comments were also received on this issue.

The Secretary has directed that high priority be given to expeditious review of the comments and publication of a final rule on the drug and alcohol testing requirements.

 QUESTIONS SUBMITTED BY SENATOR SASSER

LABOR PROTECTION PROVISIONS

SENATOR SASSER: During last year's Senate debate on the FY93 Transportation Appropriations bill, an amendment was approved regarding the preservation of domestic jobs in the event of a transfer of an international air route certificate. However, the amendment was dropped in Conference due to a threatened Bush veto.

Last year, Department of Transportation officials testified before the Congress that it had "the authority to impose labor protection provisions (LPPs) on a case-by-case basis" in international route transfer

situations. However, such authority has rarely been exercised.

The FY94 Transportation Budget includes a proposal within the Office of the Secretary to reorganize the Office of Policy and International Affairs. Under the proposed reorganization, two assistant secretaries would be established, one of which would oversee aviation and international issues.

Assuming approval of the proposed reorganization, what degree of priority would the newly formed office of aviation and international affairs place on assuming a more proactive role in preserving domestic jobs in situations involving the transfer of an international air route certificate?

ANSWER: The Administration recognizes that airline employees have an important stake in the future of their own airlines and in the well being of the airline industry. As a general approach, we would hope that, similar to the rest of the economy, appropriate protection for airline employees' jobs and benefits can be achieved through the collective bargaining process. The Administration has not yet had an opportunity to address the LPP issue directly.

OFFICE OF INTELLIGENCE AND SECURITY

SENATOR SASSER: The Administration has requested just over a million dollars for the Office of Intelligence and Security. This Office was created in FY90 upon the recommendation of the Commission on Aviation Security and Terrorism.

Will the primary focus of this Office involve aviation security? To what extent, if any, will there be coordination between this Office and the proposed Office of Aviation and International Affairs?

Also, during last year's Budget hearings, House Appropriators expressed some concern that the Office would go beyond its role of policy, oversight, and coordination of security issues with intelligence and law enforcement agencies and officials. The specific concern was that the Office would assume responsibility in the areas of research, development, and procurement of intelligence and security equipment. How would you, Mr. Secretary, envision the role of the Office of Intelligence and Security?

ANSWER: The Office of Intelligence and Security was in fact created in response to the Commission on Aviation Security and Terrorism, but is also mandated under the Aviation Security Improvement Act of 1990.

As described below in the "Mission and Functions Statement," this Office provides a focal point within the Department on all matters affecting the security of the traveling public. The Office is limiting itself to oversight and policy matters; long range strategic planning; and coordination and liaison with the Department and other agencies, with the Intelligence Community, and with the industry and the public in

general. The Office will coordinate with the Office of Aviation and International Affairs on security issues overseas, particularly those aimed at achieving a level playing field among nations in the enforcement of security regulations.

From the start, this Office has focused on aviation security matters. This is where the greatest threat continues to be. The Office has not, however, ignored the very critical area of cruise ship and cruise ship port security, as well as other modes of transportation.

[The following is an extract from the DOT Organization Manual]:

OFFICE OF INTELLIGENCE AND SECURITY

1. **MISSION.** To advise the Secretary on domestic and international intelligence and security matters; to coordinate the development and implementation of long-term strategic plans, information management systems and integrated research and development programs affecting the security of the travelling public and of cargo; to be the focal point in the Department for transportation intelligence and security policy; and to provide oversight of transportation security and intelligence programs.
2. **FUNCTIONS.** Under the executive direction of the Secretary, the Director of Intelligence and Security:
 - a. Serves as the principal advisor to the Secretary and Deputy Secretary on transportation intelligence and security policy, and develops such policy for approval by the Secretary.
 - b. Serves as the Department's primary liaison with the intelligence community; assists the Operating Administrations in setting up and maintaining their direct linkages to the intelligence community and ensures the Secretary is provided general and specific intelligence on national security and other issues necessary for effective performance as a member of the President's Cabinet.
 - c. Serves as the Secretary's primary liaison with public, private and international agencies, corporations, and interest groups on transportation intelligence and security policy.
 - d. Administers a Departmentwide transportation systems intelligence and security strategic planning process, with special emphasis on counter-terrorism.
 - e. Reviews all transportation security rulemaking.
 - f. Coordinates policy and procedures for administering the transportation intelligence and security information program, including associated data collection, analysis and dissemination, and automated information systems.
 - g. Reviews research and development activities related to intelligence and security; ensures the sharing and integration of such activities and technical expertise among the modes of

transportation and other public and private agencies.

- h. Conducts intelligence and security program analyses; monitors the performance of the Operating Administrations in transportation intelligence and security activities in both the public and private sectors.
- i. Performs such other duties as the Secretary may assign.

3. ELEMENTS. The Director oversees and supervises the following elements:

- o Intelligence Division
- o Security Division
- o Plans and Policy Division

BTS ROLE IN DATA COLLECTION PROCESS

SENATOR SASSER: Among the accomplishments cited in the Office of the Secretary of Transportation's Planning Research and Development justification was DOT's signing of a Memorandum of Understanding with the Bureau of the Census. The Memorandum was for the "coordination and planning of Census Bureau transportation data collection program."

As you know, there was considerable controversy regarding the significant population undercount in the 1990 Census. Many Federal programs use a population factor to distribute funds. With limited Federal funding available, many communities, especially large urban areas, felt shortchanged by the Census process.

Since then Secretary of Commerce Robert Mosbacher ruled against a statistical adjustment to correct the undercount, what specific steps will DOT take to ensure that data collected from the Census Bureau accurately reflects the service populations of the affected communities? Also, to what extent will the Bureau of Transportation Statistics be involved in the data collection process?

ANSWER: The Memorandum of Understanding between the Bureau of the Census and the Bureau of Transportation Statistics provides a mechanism for mutual discussion of data needs and opportunities to meet those needs. This mechanism has been used primarily to discuss economic and freight transportation issues. The Decennial Census has been discussed through the pre-existing interagency groups that include the DOT and many others.

The unadjusted results of the 1990 census issued by the Bureau of the Census are the official statistics upon which all Federal programs using decennial census population factors, including several transportation programs, distribute funds.

To ensure that data collected in the 2000 census better reflect the service populations of all communities, DOT is already working closely with the Census Bureau in its 2000 census planning activities. As members of the Policy Committee of the Task Force for

Designing the Year 2000 Census, DOT representatives are providing Census with guidance as it develops and tests new techniques for improving the quality of decennial census data and reducing the undercount. Also, in response to the Office of Management and Budget's request, DOT prepared and submitted in February of this year comprehensive documentation of its requirements for data from the 2000 census for planning and implementing transportation programs across the nation during the decade following the census.

Once the design issues for the 2000 census are settled, the Bureau of Transportation Statistics will assist the Census Bureau in the data collection process by working with Census in designing the transportation questions included on the 2000 census questionnaire and in the assigning of geographic codes to workplace addresses provided by respondents to the question on place of work.

FOCUS OF FHWA R&D REQUEST

SENATOR SASSER: The Administration has been a staunch proponent of the transportation Research and Technology. The Limitation on General Operating Expenses Account of the Federal Highway Administration includes approximately \$104.5 million for Highway Research and Development. Included in that request is \$30.8 million for IVHS Research and Development.

What other specific areas will be the focus of the balance of the Highway R&D request?

ANSWER: In addition to the \$30.8 million for IVHS research, FHWA'S Research and Technology budget request focuses on the following program areas:

- The \$42.7 million for the Highway Research, Development, and Technology program includes sub-programs for: Safety (\$5.7 million), Pavements (\$6.8 million), Policy (\$7.4 million), and Motor Carriers (\$7.7 million).
- The \$10 million Long-Term Pavement Performance (LTPP) program focuses on (1) monitoring LTPP data collection; (2) finishing all specifically designed and constructed experimental test sections identified in the Specific Pavement Study (SPS); (3) integrating LTPP and other SHRP activities (SHRP research in asphalt, concrete and structures, and highway maintenance); (4) continuing international cooperation; and (5) conducting data analyses and special studies.
- A \$15 million program for Technology Assessment promotes technology transfer to potential users of research products. Marketing techniques include field evaluation to prove the merits of the technology, demonstrations to convince potential users of the value of the new research products, and packaging techniques to

make the product more readily accepted by the users.

- The \$0.5 million Local Technical Assistance Program operates 50 technology transfer centers throughout the country, addressing the needs of both rural and urban local communities. These centers are focusing on increasing transportation expertise in these communities, as well as, promoting the effective use of private, local, and State resources for transportation purposes.
- The \$5.5 million National Highway Institute programs include sponsorship of training courses related to the latest highway technology to highway professionals in the public sector, including State and local governments, and private groups. In addition to the courses for State and local agencies, NHI makes training available to the international community, manages the Eisenhower Fellowship program for students interested in acquiring transportation skills, and oversees the operation of the Pan America Institute of Highways.

NATIONAL ACCIDENT DATA COLLECTION

SENATOR SASSER: The Bureau of Transportation Statistics was created to compile and publish transportation statistics used in cost-benefit analyses. Under the National Highway Traffic Safety Administration, the Administration is requesting funds to continue a national accident data collection program.

What is the estimated cost of that program, and to what extent has or will the information derived from the program be coordinated with Bureau of Transportation Statistics?

ANSWER: The FY 1994 President's Budget includes \$9.56 million for the National Accident Sampling System (NASS) and \$4.44 million for the Fatal Accident Reporting System (FARS).

The Bureau of Transportation Statistics (BTS) works with DOT operating administrations as well as other Federal agencies to obtain needed information, and assumes leadership in the collection of data only for subjects that are not covered by existing programs. The Bureau currently depends on well-established data programs for information on transportation safety, and is focussing its initial staff resources and budget on obtaining multimodal commodity and passenger flow data. Once these initiatives are under way, the Bureau will begin to work with the National Highway Traffic Safety Administration and others to consider improvements in the collection and availability of safety statistics.

ENFORCEMENT FUNDING BENEFITS

SENATOR SASSER: The Administration's Transportation Budget bolsters enforcement activities. Your testimony notes, in fact, that FY 1994 is the first year that States will face a loss of highway funds for failure to enact laws requiring the revocation or suspension of drivers' licenses of individuals convicted of drug offenses. Does the Administration have any specific data that estimates the extent to which funding in enforcement activities have provided specific cost-savings and efficiencies in other program areas?

ANSWER: Our enforcement activities are intended to promote safety or compliance with the law, rather than to produce cost savings or program efficiencies. For example, highway funding sanctions for States that do not require the revocation or suspension of drivers' licenses of individuals convicted of drug offenses are intended to encourage States to adopt a measure that will discourage drug use and trafficking. FAA's enforcement activities are intended to ensure compliance with safety and security regulations. The Coast Guard works to ensure compliance with, for example, marine safety requirements and fishing restrictions, and to prevent illegal immigration. We have no evidence that such enforcement efforts lead to savings or efficiencies in other DOT program areas. One might expect, however, that safety enforcement does result in health care savings, which are reflected in programs outside DOT.

AMERICANS WITH DISABILITIES ACT

SENATOR SASSER: One of the areas in which Tennessee transit operators, and I'm sure others nationwide, have a concern is the cost and deadline for compliance with the Americans with Disabilities (ADA) requirements. The Administration proposes \$4.6 billion for the Federal Transit Administration. This amount still falls short of ISTEA full funding for transit. Your testimony indicates that some \$300 million in highway funds have been transferred to transit under the flexibility provisions of ISTEA. To what extent have transferred funds been utilized for ADA purposes?

ANSWER: The FTA budget proposal for FY 1994 is 21 percent more than the FY 1993 budget. This additional funding would help communities in implementing the ADA transit requirements. In addition, the flexible funding features of ISTEA are available to assist communities. Of the \$300 million transfer of flexible funds from FHWA, approximately \$250 million of this amount was for improvements to rail systems, including accessibility features in rail stations and on new rail vehicles.

SENATOR SASSER: Also, under the OST Transportation Planning Research and Development request, the Administration is proposing a study (\$75,000) to determine the national costs and effectiveness of implementing ADA transportation regulations. DOT's

budget justification indicates that "...many gaps still exist in (DOT's) knowledge of the cumulative costs of ADA improvements..."

Pending specific findings from the proposed study, what specific steps can DOT and FTA utilize to ensure against undue financial burdens on communities?

ANSWER: DOT has already estimated the costs of implementing the transit requirements of the ADA as part of the Regulatory Impact Analysis. FTA, however, is updating these costs as paratransit and key station plans are submitted. The study referred to in the OST budget will deal specifically with how ADA applies to the passenger vessel industry.

Section 37.151 of DOT's regulation implementing the transit provisions of the ADA allows operators to request a waiver from the six paratransit service requirements in cases of undue financial burden. This waiver is really a time extension, of limited duration, from the requirement for full compliance. Despite the effect of the recession on local tax revenues, only 2 of the 543 entities submitting plans to the FTA in the first year (1992) requested a waiver due to undue financial burden. However, these waiver requests are expected to increase as we approach the 1997 full compliance timeframe for ADA paratransit service.

ADA COMPLIANCE DEADLINES AND COSTS

SENATOR SASSER: OST's budget justification for Transportation Planning Research and Development also indicates the concern of rail operators regarding compliance deadlines for ADA. The unknown, but expectedly steep, cost of paratransit service was a specific concern.

Do you have any preliminary indication of the extent to which waivers in meeting the compliance deadline have been requested?

ANSWER: Despite the effect of the recession on local tax revenues, only Richmond, Virginia and Suffolk County, New York (out of the 543 entities submitting ADA paratransit plans to the FTA in the first year) requested a waiver due to undue financial burden. However, these waiver requests are expected to increase significantly as we approach the end of the 5-year phase-in of service in 1997.

SENATOR SASSER: Does the Department of Transportation have an estimate of the costs to rail operators for paratransit service compliance? Also, with respect to the development of High Speed Ground Transportation and Maglev, are there any estimates regarding the extent to which ADA requirements might affect overall cost projections?

ANSWER: High-speed rail, like Amtrak, and other rail systems, must fully comply with ADA requirements. These requirements include, among other things, wheelchair access to passenger cars, spaces both for parking and storing wheelchairs, and accessible

restrooms. (Unlike rapid and light rail service, Amtrak, high-speed intercity rail, and commuter rail service are not subject to ADA paratransit requirements). The Regulatory Impact Analysis (RIA) for the Department's 1991 ADA rule included cost projections for compliance by then-existing rail systems. While these cost estimates, - particularly those for Amtrak - may have some relevance in projecting compliance costs for high-speed rail systems, the Department did not make specific estimates applicable to these systems.

NASHVILLE-LONDON ROUTE

SENATOR SASSER: Mr. Secretary, when you approved the British Airways investment in USAir, you stated that the United States/United Kingdom bilateral agreement did not provide a level playing field. You also said the bilateral agreement prevented U. S. carriers and cities from getting access to and beyond London. Specifically, you stated - "I strongly believe that we must eliminate restrictions that undermine competition and which limit U. S. carriers' access to British markets." I can certainly attest to the restrictiveness of the bilateral agreement.

As you know, Mr. Secretary, the City of Nashville and the State of Tennessee have for many years aggressively sought a route to London. Although officials have made several trips to London and spoken to British officials, all of their good efforts have been without success. This is a very important matter for Nashville and the State of Tennessee. I would invite you, Secretary Peña, to come to Nashville, meet with the community and Governor McWherter so that you can get a better appreciation of just how very important this route is to all of the citizens of Tennessee. I just have a few questions to follow-up on this matter. Do you remain committed to securing nothing short of a truly "open skies" agreement by year's end?

ANSWER: DOT remains committed to eliminating the restrictions in our aviation agreement with the British. On April 19, Secretary Peña met with John MacGregór, the U.K. Secretary of State for Transport, and confirmed our common aim of liberalizing the U.S.-U.K. Air Services Agreement. Both sides recognize that difficult decisions will be required, but agree that the potential for an agreement is there. Negotiations resume on May 5, with the aim of reaching agreement within a year.

SENATOR SASSER: It is my understanding that as a result of British Airways' investment in USAir, there are now three London routes that are available for reassignment. May I trust and presume that you, Mr. Secretary, and neither British Airways nor USAir, will make the determination of where those authorities will be located?

ANSWER: In assessing both route transfer applications and authority for new services, the

Department always applies the decisional standards of the Federal Aviation Act, including the requirement that the grant of authority be consistent with the public interest. It should also be clarified that the route authority held by USAir between Philadelphia and London is not, under the existing bilateral agreement, transferrable to another gateway.

SENATOR SASSER: In making those determinations, I urge you to give preference to the needs of those cities and regions that have no service to Great Britain, rather than allowing those scarce routes to go to cities already having multiple routes to Great Britain and Europe. It is essential for Nashville that this route be in operation by this summer. Will you use expedited procedures to award these routes?

ANSWER: The Department is also interested in having the USAir routes available for other airline services as quickly as possible. However, we are still reviewing the filings that we have received and we expect additional requests to be filed. Consequently, the Department has not yet determined the best procedures to accomplish our goal of timely reassignment of the service opportunities.

QUESTIONS SUBMITTED BY SENATOR D'AMATO

FAA CONTROLLER PAY DEMONSTRATION

SENATOR D'AMATO: The FY 1994 budget proposal would terminate one year early the FAA controller pay demonstration program. I understand that DOT's goal is to save about \$20 million by this action. About \$6.6 million of this cost reflects the NY-NJ area air traffic controllers. As you know, I wrote legislation extending this pay "demo" to controllers in the New York - New Jersey metro areas who were not included in the original demo program. My chief goals were to recruit and retain full performance level (FPL) controllers in the complex airspace around NY city. FAA's own analysis of the success of the demo project found that the number of FPL controllers at pay demo facilities increased significantly from 604 to 910 --- a fifty one percent increase! --- since the program began. Why is DOT cutting funds that have proven to enhance safety at our air traffic control facilities?

ANSWER: The controller work force (CWF) has now stabilized and the number of full performance level (FPL) controllers has increased system-wide, not just at the pay demonstration sites. While the total CWF increased from 16,554 in June 1989 (the beginning of the pay demonstration project) to 17,826 at the end of March 1993, an 8 percent increase, FPLs have increased from 9,905 to 12,192, a 23 percent increase. This is a reflection of the increasing experience level of the workforce. Also, under the Federal Pay Comparability

Act, Federal salaries increased with the 8 percent geographical adjustment in several high cost areas including the New York area. Finally, the pay demonstration was a 5-year project. By the end of September 1993, FAA will have more than four years of data. The project will have achieved its purpose and will no longer be essential. Terminating the project 9 months ahead of schedule will not compromise the project, and will provide significant cost savings during fiscal year 1994.

SENATOR D'AMATO: FAA's own data show that staffing levels and experience levels have increased, while turnover has declined as a result of the pay demo. Why didn't DOT look for other areas to take cuts, rather than termination of a successful program?

ANSWER: FAA is taking cuts in other areas of Operations. In addition to the \$20 million from the pay demonstration, the Operations budget takes another \$149 million reduction from the baseline. The additional reduction includes \$71 million in staffing reductions, retirements and turnover, \$40 million in administrative expenses and travel, \$11 million for ending the DUATS subsidy, and \$27 million for savings in leased telecommunications, and other miscellaneous cost areas.

With personnel costs comprising over 75 percent of the Operations funding, there is very little flexibility to reduce program costs in the short term. In order to avoid further reductions in staffing or critical contractual support, a decision was made to terminate the pay demonstration early.

SENATOR D'AMATO: I believe that NY-NJ facilities joined the pay demo program at least a year later than other facilities in other locations. Don't they deserve to be included in the program at least as long as other facilities have participated?

ANSWER: All facilities currently in the pay demonstration project, including those in the New York and New Jersey area, have been covered since the project's implementation in June 1989. No facilities have been added to the project since its implementation.

QUESTIONS SUBMITTED BY SENATOR DOMENICI

FISCAL CONDITION OF THE HIGHWAY ACCOUNT OF THE HIGHWAY TRUST FUND

SENATOR DOMENICI: In the report to the Chairman of the Budget Committee dated September, 1992, GAO predicted that the highway account of the Highway Trust Fund would be facing a shortfall as early as fiscal year 1995. Failing the enactment of additional revenues to the trust fund, the Byrd Amendment would force the Federal Highway Administration to reduce states' highway apportionments

in 1995. On March 31, 1993, the author of that report, Mr. Ken Mead, testified before this subcommittee that the problem of projected shortfalls in the highway account of the trust fund had worsened, even in the six months since his initial report. Mr. Secretary, would you review for the Subcommittee the Administration's proposal regarding the extension of the 2.5 cent fuel tax?

ANSWER: Extension of the 2.5 ¢ fuel tax and transfer to the Highway Trust Fund is essential to assure that States' apportionments are not affected by operation of the Byrd Amendment. That requires legislation to extend the tax through FY 1999 and switch the fuel taxes paid by highway users (2½ ¢/gallon) from the general fund to the Highway Trust Fund beginning in FY 1996. We would allocate the revenue from 2 ¢ of the tax (\$2.7 billion annually) to the Highway Account and ½ ¢ (\$0.7 billion) to the Transit Account. This would prevent triggering of the amendment through the life of ISTEA, based on our estimates of spending and revenues. As an insurance measure, we would propose that either Account could borrow from the other to protect cash balances.

SENATOR DOMENICI: CBO has projected that without the extension and dedication of the 2.5 cents to the highway account, the Byrd Rule would be triggered by the end of fiscal year 1994. CBO estimates that with the extension and allocation of the entire 2.5 cents to the highway account, the Byrd Rule would not be triggered until 1997.

Should the Congress choose to exempt railroads from the 2.5 cent tax, or designate a half-cent to the transit account, how would you estimate the timing on the triggering of the Byrd Rule?

ANSWER: Using the budget and revenue proposals of the 1994 President's Budget, our projections show that the Byrd Amendment would be triggered for the beginning of FY 1998 -- to the extent of about \$800 million. This assumes the transfer in FY 1996 of revenue associated with 2.5 ¢ paid by highway users. The 1994 President's Budget, with its FY 1993 Stimulus proposal and the FY 1994 Investment Initiative, would fully fund Federal-Aid Highways at ISTEA levels in FY 1993 and FY 1994-1997.

FAA AGING AIRCRAFT NONDESTRUCTIVE INSPECTION
DEVELOPMENT AND DEMONSTRATION CENTER

SENATOR DOMENICI: Mr. Secretary, it is my pleasure to see you again and to have the opportunity to discuss the Administration's FY 1994 budget request for the Department of Transportation.

Over the past three years, I have been pleased to work with the distinguished Subcommittee Chairman and Ranking Member, as well as the Department of Transportation and the Federal Aviation Administration (FAA) on a very important and immediate issue -- the safety of aging aircraft. We have begun to see the serious implications of an aging fleet of aircraft. U.S.

airlines are now operating the oldest fleets in aviation history with the average age of the fleet of approximately 3,300 airplanes, being 13 years. One-third of these planes are actually 20 years or older. They have, in fact, reached their designed economic life.

I am pleased to report that the FAA Aging Aircraft Nondestructive Inspection Development and Demonstration Center in Albuquerque is now officially in operation. I was extremely pleased to be at the official opening of the center this last February, and I am very excited that we have the opportunity to establish a world-class center to develop and demonstrate nondestructive inspection techniques on aging aircraft; provide assessments of both the reliability of proposed inspection techniques and cost benefits that can be derived by their use by the aviation industry; and validate the NDI processes developed throughout the FAA's overall program and transfer them to industry use.

I hope that you will continue the Administration's valuable support for this innovative project. I want to commend the FAA for its support for the project on the multi-year basis. I am pleased that the FAA and Sandia National Laboratories in Albuquerque, along with the University of New Mexico and industry, the Science Applications International Corporation (SAIC), have established a good working relationship that seeks to meet the needs and interests of the aviation industry.

Mr. Secretary, does the FY 1994 budget for the Federal Aviation Administration include the necessary funding to continue the collaboration on the Aging Aircraft NDI Center? If so, what is the requested funding level for this initiative?

ANSWER: Yes. The FY 1994 budget includes \$3 million to continue the current collaboration on the Aging Aircraft NDI Validation Center (AANC) operated by the Sandia National Laboratories on behalf of the Federal Aviation Administration.

SENATOR DOMENICI: The Congress and the Administration have placed significant focus on the economic health of the aviation industry, establishing a commission to assess its viability. As part of that initiative, will the Administration be looking at ways to help the industry remain competitive?

ANSWER: The Aging Aircraft NDI Validation Center (AANC) validation and reliability enhancement procedures will accelerate technology transition from applied nondestructive evaluation science research into the industrial arena. The potential savings in inspection methodologies may save the airlines operating costs and thus contribute to their economic well-being.

SENATOR DOMENICI: I believe that efforts like the Aging Aircraft Center in New Mexico, which seeks to bring new technology and efficiency to aircraft inspections, has the potential to save the airlines operating costs and contribute to their continued economic viability. Do

you see such initiatives as aiding the aviation industry in the long term?

ANSWER: The innovations as well as the validation of nondestructive evaluation technology carried out at the AANC has the potential of aiding the aviation industry in the long term.

ROSWELL RADAR

SENATOR DOMENICI: Congress has appropriated funds for the emplacement of an ASR-9 radar to service the Roswell airport. The FAA, the City of Roswell and various other interest groups have been examining the optimum operational arrangement for the system. Currently the three options are: 1) stand alone in Roswell, 2) remote to Albuquerque, and 3) remote to Lubbock.

I am very concerned that I have been unable to get accurate and timely information from the FAA on this issue. In January of this year, FAA officials provided information on the technical feasibility of the various options which subsequently was refuted by both air traffic technicians and the manufacturer of the equipment. On 29 January, I sent a letter to Mr. Del Bazo asking for an explanation of the apparent shortcomings in the FAA information provided earlier in the month and raising several other questions. To date, and despite several calls by my staff to FAA contacts, I regret to say that I still have not had the courtesy of a response.

There have been several concerns raised about the safety implications of remoting radar service to hub locations, particularly vulnerability of transmission lines to outages and the lack of familiarity and responsiveness of remote radar operators with local conditions and operational necessities. My understanding is that there have recently been several breakdowns in transmission lines which have stopped radar coverage at remote locations for extended periods of time. Has the FAA examined these safety issues in detail?

ANSWER: The FAA has extensive experience in remoting radar service over transmission lines which are often hundreds of miles long. Although there have been infrequent interruptions to individual transmission circuits in the past, FAA continues to reduce or eliminate the vulnerability. Specifically, the entire network of leased services is currently being replaced by the Leased Interfacility NAS Communications System (LINCS), which will greatly improve the reliability of leased circuits through the use of extensive diversity. Also, in many cases the FAA-owned Radio Communications Link (RCL) microwave system is now used to supplement leased services. Dial-up circuits are often used as another level of back-up for critical connections. This combination of strategies will essentially remove any telecommunications vulnerability associated with remoting of radar service.

The air traffic controllers at the Lubbock, Texas, terminal radar approach control are fully trained and proficient in all procedures and operational requirements to absorb the Roswell operation. The distance of the site from which radar services are provided to the radar sensor has no bearing on the quality of the service to be provided.

SENATOR DOMENICI: If the Roswell radar is remoted to Lubbock, Roswell will receive ground control from its own tower, approach control from Lubbock (which is in the Fort Worth ARTCC region), and ARTCC control and administrative/logistic/management oversight from Albuquerque. When the FAA makes a determination to remote radar service, does it consider such factors as ARTCC and hub boundaries in an effort to avoid confusing cross-border responsibilities and diluted supervisory authority which can have seriously dilatory effects on operations?

ANSWER: Airspace boundaries are based on a well defined area necessary for an air traffic control facility to provide safe, efficient, and effective air traffic control services for a specific location of a designated area.

The supervisory and administrative functions at Roswell ATCT will remain at Roswell Industrial Air Center Airport. The air traffic terminal hub facility at Albuquerque, New Mexico will continue to provide administrative support, first and second line supervisory guidance, and training support for Roswell. Logistic support for all Southwest Region facilities is handled from the regional office at Fort Worth, Texas.

SENATOR DOMENICI: Has the FAA yet determined, as the system manufacturer indicates, that it is technically feasible for the ASR-9 to be remoted to Albuquerque? If not, when can we anticipate that answer?

ANSWER: It is technically feasible for the Roswell ASR-9 to be remoted to Albuquerque terminal radar approach control. However, the cost of this alternative is approximately \$3 million greater than remoting to Lubbock, primarily because additional equipment would have to be procured. The automated radar terminal system at Albuquerque does not have adequate capacity to absorb the additional radar from Roswell. Also, that equipment is not immediately available. Remoting to Lubbock would allow radar services to be available to the Roswell aviation community a year before Albuquerque could be commissioned.

SENATOR DOMENICI: Assuming that remoting to Albuquerque is technically feasible, as we believe the case to be, when can we anticipate seeing a cost comparison of the three alternatives?

ANSWER: A cost analysis has been accomplished to determine the optimum site from which to provide radar services to Roswell. Three alternatives were studied:

remote data from the Roswell surveillance radar sensor to the Lubbock, Texas terminal radar approach control (TRACON); remote data from the Roswell sensor to the Albuquerque, New Mexico TRACON; or establish a low activity radar tower in Roswell. The Albuquerque alternative was the most costly at almost \$3 million higher than the Lubbock alternative. The results of the analysis will be provided to the Committee.

SENATOR DOMENICI: What criteria were used to determine that the Moses Lake, Washington ASR-9, which services an airfield very similar in mission to Roswell Airport, would be operated as a stand alone facility rather than being remoted to a larger hub? How do these criteria differ from the situation at Roswell?

ANSWER: Many years ago when Larson Air Force Base was closed and was converted to Moses Lake Airport, Congress directed that FAA provide approach control services at Moses Lake. The radar approach control services at Moses Lake also provides radar control services for the Moses Lake Municipal Airport. All airports are subjected to cost/benefits and quality of service considerations before being considered for new establishment or replacement of air traffic services.

SENATOR DOMENICI: To what extent is the dramatic decline in air traffic and aviation training in Harlingen, Texas, a function of the initiation of remoted radar coverage at that location?

ANSWER: The decline of air traffic and aviation in the Harlingen area was impacted by the Confederate Air Force moving their museum, air operations, and airshow activities to Midland, Texas. The decline in petrochemical associated activities throughout Texas also contributed to the decline in air traffic. The Harlingen air traffic control tower has always been a visual flight rules tower with the approach control being worked from other locations. Brownsville non-radar approach control was responsible for Harlingen airspace prior to being remoted to Corpus Christi, Texas.

NAFTA-RELATED INFRASTRUCTURE, ISTE A SECTION 6015 STUDY
AND THE CENTER FOR THE NEW WEST

SENATOR DOMENICI: The volume of trade with Mexico has expanded dramatically since 1986, imposing an increasing strain on transportation and related infrastructure along our southern border. It now appears that the administration is disposed to support the North American Free Trade Agreement although it is not clear what the so-called side agreements on environment, labor and import surges will look like. All agree that a NAFTA will add even greater pressure on border transportation infrastructure facilities. It also seems clear that increased trade will create very different commercial corridors in North America which will need detailed analysis -- such as that encompassed in Section 6015 of

the ISTEA -- if we are to optimize our spending in transportation infrastructure.

Mr. Secretary, would you please explain how Department of Transportation funding will be focused to address the national transportation infrastructure imperatives along the southwest border?

ANSWER: As you know, the Department is conducting a study under Section 1089 of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) to determine the feasibility of creating an international border highway discretionary program, which would be used to enable state and federal agencies to construct or replace highway infrastructure facilities along the border. This study is being conducted in conjunction with the 6015 study, which is national and multi-modal in scope, and which should give us a clearer idea of what national infrastructure needs may result from NAFTA. Both reports will go to the Congress by September 30, 1993.

SENATOR DOMENICI: Will there be any attempt to target funds beyond formula distributions to the border region to address these unique national needs?

ANSWER: The Administration's budget proposal does not include funding specifically identified for infrastructure improvements along the borders. However, it will provide for an increase in infrastructure investment. For example, the DOT request for the Federal-Aid Highway Program for FY 1994 is for full funding of the Highway title of the ISTEA, which includes \$2.7 billion as an investment initiative above the baseline amount for FY 1994. In addition, our request for the Airport Improvement Program of \$1.88 billion for FY 1994 represents a 4.4 percent increase above the FY 1993 level. With the planning and prioritizing that has already been done by States and regional organizations along the U.S. borders, those communities are well-positioned to advance applications for funding early in the fiscal year to the State or federal agency that will have decisionmaking authority for these funds.

SENATOR DOMENICI: Have you considered how you will continue the initial work assessing changes in national commercial flow patterns now being conducted by the Center for the New West under Section 6015 of the ISTEA?

ANSWER: Future investigation of possible emerging or transforming trade corridors will depend upon the outcome of the current ISTEA studies and observed developments along the borders. It is possible that additional study efforts may be required. We would be able to ascertain the additional study efforts upon completion of the work on the Section 6015 study by the Volpe National Transportation Systems Center (VNTSC) and the Center for the New West.

SENATOR DOMENICI: To what extent do you plan to have the Office of International Programs in the Office

of the Secretary directly involved in FHWA management responsibility for and the Center for the New West execution of the 6015 program?

ANSWER: The OST Policy Office is working with FHWA, particularly to facilitate ISTEA requirements for consultations with the Governments of Mexico and Canada. The OST Office is also a member of a DOT interagency study coordinating group that includes concerned modal administrations and OST Offices involved in cross-border and NAFTA transportation issues. This group was formed in order to comply with the ISTEA's requirement that the studies be international and multi-modal in scope. All involved Departmental elements will continue to cooperate in the development of the studies and in preparation of the final reports to Congress.

SENATOR DOMENICI: New Mexico, Colorado and several municipalities are examining the potential of passenger rail service from El Paso through Albuquerque to Denver and possibly beyond as north-south routes gain importance with the development of a North American free trade area. What do you see as the prospects for enhanced passenger rail service in the west as the trade relationship with Mexico and Canada builds?

ANSWER: In July 1992, Amtrak completed a report mandated by Congress that explored potential new routes and services. The report did not recommend an El Paso to Canada route as you have described because Amtrak's marketing staff concluded that there was insufficient demand for such service. We would be interested in reviewing the state and municipal studies that you mentioned. While DOT is represented on Amtrak's Board, the Department does not have authority to mandate new routes or services. Amtrak makes those decisions based on analysis of the net contribution such service would make to the company.

DRIVING WHILE INTOXICATED LEGISLATION

SENATOR DOMENICI: For many years, New Mexico has recognized the DWI problem that it shares with the rest of our country. In fact, I am told that our state leads the nation with over 14 deaths per 100,000 due to DWI-related accidents. The second ranking state kills in excess of 12 per 100,000; some states, however, are in the low single digits.

I understand that, nationally, the costs in human suffering and drain on our treasury from automobile crashes is enormous, and that DWI is a major contributing factor in these statistics: five million motor vehicle crash victims injured annually, \$48.5 billion lost in costs, wages and productivity, and 15 million days of lost employee time annually.

The state of New Mexico has now been galvanized into a committed resolve to deal with this issue as a result of the tragic loss of a young mother and her three small daughters to a drunk driver in a horrible crash on

Interstate 40 in the heart of Albuquerque on Christmas Eve.

Traffic regulation, including DWI, is principally a state issue and our New Mexico legislators and Governor King have been immersed in it throughout this legislative session. There is, however, a federal role here and Congressman Steve Schiff in the House and I have introduced two pieces of legislation to assist in this campaign to stop the mayhem on our roads and highways. The first will withhold highway funds from states which, after a grace period, fail to establish a .08% blood alcohol standard for intoxication, a top legislative priority of Mothers Against Drunk Driving this year. Funds withheld for a period of three years will be released to the states, but will be limited to use in programs directly related to prevention of DWI. The second bill opens up the 1968 Omnibus Crime Control and Safe Streets Act by adding DWI prosecution and enforcement as a twenty-second category of initiatives toward which states can apply formula grant money.

We all appreciate the dedicated concern that NHTSA has for the well-being of our constituents. Let me ask just a few questions. Could you summarize the costs paid annually by the American taxpayer that are incurred as a result of DWI?

ANSWER: A recently published analysis of the costs to society of motor vehicle crashes included a detailed estimate of the cost to society of alcohol-related crashes. That analysis showed that the total cost to society of all alcohol related crashes was \$46.1 billion in 1990. Of this amount, eighty one percent, or \$37.5 billion, was the result of crashes wherein the driver had a blood alcohol concentration (BAC) of 0.10% or greater. A BAC of 0.10% is the legal limit for intoxication in most states. To counter this costly drain on American society, the National Highway Traffic Safety Administration has active programs funded through its Operations and Research Highway Safety Programs and its Section 408 and Section 410 grants. In FY 1993, \$38.2 million is planned for obligation on these programs. This federal money leveraged state funds for these activities. In addition, considerable private sector funds are available in support of preventing drunk driving. The bottom line is that the American consumer ultimately bears the costs of highway crashes through higher taxes to fund public assistance and injury prevention programs, higher insurance premiums, and higher prices as a result of lost productivity in the workplace.

SENATOR DOMENICI: While new programs and enhanced enforcement and prosecution have a cost, do your assessments show that funds spent in highway safety programs pay meaningful returns on each dollar invested through the avoidance of fatalities and severe injury?

ANSWER: NHTSA analyzed the Department's highway safety programs for the twenty five year period from 1966 to 1990. This analysis showed that for each dollar spent

on highway safety, society has received a return of \$3.41. This figure is based on a thorough analysis of highway safety programs, counting only those lives and injuries that could be directly attributed to a specific program. The analysis included only the dollar equivalent of reduced injuries and fatalities, not reduced property damage. Given the assumptions in this study, highway safety programs have saved society \$552 billion (in 1992 dollars) from 1966 to 1990. The portion of this estimate attributed to fatalities avoided was \$171 billion (based on 243,000 lives saved, at an average of \$702,000 each). All of these savings are out of pocket and do not account for the enormous savings in terms of pain and suffering and quality of life. The total cost to society of achieving these savings, including the cost of government programs and the additional cost to the consumer of adding safety to their vehicles, totaled \$162 billion over the same period. Thus, as a society we received a return of \$552 billion for an expenditure of \$162 billion, or \$3.41 for each dollar spent.

SENATOR DOMENICI: Is the \$25 million authorized for the National Highway Traffic Safety Administration's Section 410 Alcohol Incentive Grant Program and requested in the administration budget adequate in your opinion?

ANSWER: The National Highway Traffic Safety Administration estimates that the \$25 million will cover the requests from eligible states during FY 1994. If it turns out that states apply and qualify for more than \$25 million, NHTSA has contingency plans to make pro rata reductions in order to provide partial funding of the grant amounts authorized for each eligible state.

SENATOR DOMENICI: Should the requirements in the Section 410 program for both basic and supplemental grants be tightened so that all criteria must be met in each category to qualify for the respective funding?

ANSWER: No. NHTSA believes it is appropriate to continue the currently authorized requirements for basic and supplemental grants.

In the case of basic grants, the current requirements encourage significant legal and programmatic accomplishments by states to reduce drunk driving. At the same time, it is possible for a significant number of states to be able to participate in this worthwhile program.

The supplemental grants provide incentives for additional actions beyond those required for the basic grants. The current approach provides an incentive to states to implement each of the supplemental countermeasures. No state would now qualify for supplemental funds if all seven criteria had to be met. States would not even be motivated to attempt such a difficult task. Thus, the incentive value of supplemental grants would be lost.

LOCAL RAIL FREIGHT ASSISTANCE ACT

SENATOR DOMENICI: Small local railroads play an important role in the economic viability of many smaller communities around this country. This is clearly the case in New Mexico. Maintaining the condition of the lines can be a significant burden on these frequently fragile enterprises, despite the central role they fill in preserving jobs and the small town way of life in which many Americans find worth and satisfaction.

This year, two New Mexico railroads have initiated requests for Local Rail Freight Assistance Act funding to meet important needs. In order to encourage manufacturing expansion in the community, the Santa Fe Southern Railroad is attempting to reestablish the link from the City of Santa Fe to the main line of the Atchison, Topeka and Santa Fe railroad which bypasses the city. In the southeast part of the state, the Texas-New Mexico Railroad seeks to repair 34 miles of track in order to support the re-opening of the Lea Refinery between Hobbs and Lovington, New Mexico.

It is my understanding that the budget submitted by President Clinton has cut all funding for the Local Rail Freight Assistance Act.

Mr. Secretary, how will the administration support struggling small railroads in our country as they try to perform services essential to the economic viability of and jobs in our small, particularly rural, communities which rely on them?

ANSWER: Based on travels to rural parts of the nation, it is apparent how important continued rail service can be to the economic health of communities. We need to think carefully, however, about the need for Federal involvement in assisting shortline railroads, particularly given the current Federal deficit and the relative health of the shortline industry, as well as the local nature of shortline operations.

According to information available to DOT, the majority of shortline railroads are in good financial shape and do not need assistance. In the January 1993 report to Congress, "Small Railroad Investment Goals and Financial Options," the Federal Railroad Administration reported that only 30 percent of shortline railroads surveyed expressed any need for external sources of capital. While this 30 percent may at first blush sound high, one must remember that their potential sources of capital are wide-ranging, including the banking system, States and localities, and shippers. Entrepreneurs have not been skittish to enter the shortline business; indeed, the number of shortlines has increased from about 200 in 1980 to nearly 600 at the beginning of 1993.

Shortline failures have been rare. The FRA's annual report on shortlines in February 1993 reported that in the past three years, only nine shortlines went bankrupt and 14 abandoned lines. Some abandonments were due to financial problems of the railroads, but others were due to low traffic volume, where capital investment might not

be justified. According to the FRA, financially shaky shortlines are usually bought out by better capitalized parties and service continues. Some entrepreneurial firms are now acquiring and managing several shortlines, and in other cases, States, localities and shippers have stepped in to see that service is maintained.

We will continue to monitor this industry, but at this point, continued funding of LRFA is not essential or the best use of Federal dollars.

FAA AIRPORT FUNDING

SENATOR DOMENICI: Albuquerque International Airport has sought funding for a major renovation project involving its Taxiway A and ancillary facilities. With a total projected cost of \$26.2 million over FYs 1993 and 1994, the project is now underway. As the single major scheduled airline airport in the state, this critical renovation at Albuquerque International will have serious implications throughout the region if it is for some reason interrupted or delayed. What is the current status of funding for the Taxiway A repair at Albuquerque International Airport?

ANSWER: Reconstruction of Taxiway A (including related aircraft parking apron, service road and drainage work) has been partially funded in fiscal years 1992 and 1993 under FAA's Airport Improvement Program (AIP). The Federal share of costs to date is approximately \$11.8 million. Albuquerque has requested an additional \$8.875 million to complete the project. With the fiscal year 1994 AIP budget request of \$1.879 billion, approximately \$3.2 million in sponsor entitlement funds would be available. The remaining \$5.675 million will be considered for fiscal year 1994 discretionary funding.

SENATOR DOMENICI: Artesia Airport has also submitted its application for Airport Improvement Program funding. In November, I was advised by the FAA that it was optimistic that FY 1993 money would be available to begin work on the most urgent items on the city's request. What is the current status of Airport Improvement Program funding for the Artesia project?

ANSWER: FAA has received a \$4.1 million request for runway, taxiway and apron upgrading and reconstruction at Artesia Airport. Unfortunately, all available funds for the State of New Mexico for fiscal year 1993 have been committed to other projects. FAA hopes to fund a portion of the work in FY 1994, and the remaining portions of the project would be considered for funding in future years.

QUESTIONS SUBMITTED BY SENATOR SPECTER

HIGHWAY TRUST FUND

SENATOR SPECTER: Mr. Secretary, I understand that the highway account of the highway trust fund is projected to run a deficit given its current revenues by fiscal year 1997. What is the Department's projection of the highway account over the next five years?

ANSWER: Without additional revenues, the Highway Account cannot support the full ISTEA levels in FY 1994-1997 for Federal-Aid Highways. The Byrd Amendment would be triggered for the beginning of FY 1995, to force withholding of about \$2.8 billion in state apportionments. To address the need for additional revenue, we propose to switch 2 ¢ of the fuel tax receipts -- now dedicated to deficit reduction -- to the highway account. Then, our projections show that the Byrd Amendment would be triggered for the beginning of FY 1998 -- to the extent of about \$800 million. We would await the next authorization bill to address that situation.

SENATOR SPECTER: What is the Department's projection of the transit account over the next five years?

ANSWER: Using the proposals of the 1994 President's Budget, our projections show that the transit account at the end of FY 1998 would have a cash balance of \$9.7 billion, a surplus of \$1.4 billion, and a positive \$4.8 billion transit equivalent of the Byrd Amendment headroom. These figures are based on our proposal to designate revenues associated with a half-cent of the fuel tax -- now dedicated to deficit reduction -- to the transit account.

SENATOR SPECTER: Does the Administration support the extension of the 2.5 cent fuel tax currently targeted to deficit reduction to be applied to the transit and highway accounts?

ANSWER: We do support that. We propose to extend the 2.5 ¢ fuel tax through FY 1999 (consistent with other trust fund taxes), and to transfer in FY 1996 to the Highway Trust Fund the revenues associated with the taxes paid by highway users. We would allocate the revenue from 2 ¢ of the tax (\$2.7 billion annually) to the Highway Account and $\frac{1}{2}$ ¢ (\$0.7 billion) to the Transit Account.

INTERNATIONAL AIR SERVICE

SENATOR SPECTER: Mr. Secretary, international air service is extremely important to a community's ability to compete in the international marketplace. Although

the Philadelphia Tri-State Region is the fifth largest metropolitan area in the country, it has very little non-stop international air service. Specifically, Philadelphia has non-stop service to only two European cities, London and Paris. This amount of non-stop international service is far less than the service enjoyed by the major gateways, such as New York and Chicago, and is also less than the service that several cities much smaller than Philadelphia enjoy. I understand that there is a case now pending before the DOT that could eliminate Philadelphia's U. S. flag-service to London. While I am not asking you about any particular case pending before the Department, I would appreciate knowing what efforts you will undertake to enable Philadelphia and other underserved cities to retain their existing international service, particularly to European cities.

ANSWER: It is an important part of my goals for international aviation that service opportunities be available from all U.S. cities so that there will be no question of some cities receiving service at the expense of others. When route opportunities are not limited by externally imposed restrictions, the forces of competition and marketing judgements can determine the pattern of services in the aviation industry just as they do in most other sectors of the economy.

SENATOR SPECTER: USAir recently announced that it was going to start service between Philadelphia and Frankfurt, but has now been told by the Department of Transportation that it cannot do so under the existing agreement between the United States and Germany. This new service would have been extremely beneficial to Philadelphia. What can be done to allow service to Frankfurt from Philadelphia?

ANSWER: We regret that Germany was unwilling to allow USAir to operate Philadelphia-Frankfurt services this summer under the interim capacity regime signed last November. Currently, the only way a U.S. carrier can provide Philadelphia-Germany nonstop service is by taking frequencies from another U.S. city and moving them to Philadelphia. German carriers, however, would be allowed to provide such service. The bilateral situation with Germany is very difficult, because Germany is not happy with the current aviation agreement and is seeking a new agreement that would significantly limit U.S. carrier opportunities. We are seeking an agreement that would ensure that U.S. cities, such as Philadelphia, would have the opportunity for nonstop service by a carrier of either country.

AIRPORT IMPROVEMENT PROGRAM

SENATOR SPECTER: Mr. Secretary, under the Airport Improvement Program (AIP), the FAA may issue Letters of Intent (LOI) to provide multi-year grants for large airport projects. It is my understanding that total

funding for all LOI projects is limited each year to 50 percent of AIP discretionary funds available. However, I have heard projections that LOIs approved in prior years may absorb all of the LOI portion of AIP funding for fiscal years 1994 and 1995. Do you anticipate that this problem will actually occur?

ANSWER: LOI's are not subject to a specific statutory limit in terms of a percent of AIP funds available. Section 513(d)(1)(F) of the Airport and Airway Improvement Act states that LOI's shall not exceed the amount reasonably estimated by the Secretary to be necessary for grants not covered by LOI's. To comply with this provision, FAA administratively limits each fiscal year the total grants issued under LOI's to approximately 50 percent of the fiscal year's available discretionary funds not specifically set aside for other airport types or purposes (e.g., relievers, noise). LOI commitments for discretionary funding in FY 1994 total \$185 million, approximately 50 percent of the projected discretionary funds.

SENATOR SPECTER: Mr. Secretary, the apparent shortfall in funds is of particular concern to the City of Philadelphia and all of us who have been working to improve air service throughout the crowded Northeast Corridor. Philadelphia is planning to construct a new commuter runway at Philadelphia International Airport. The runway will increase capacity at the Airport by more than 40 percent, will reduce delays at Philadelphia, and will alleviate congestion along the Northeast Corridor. This project will cost about \$215 million and Philadelphia plans to seek an LOI for about \$120 million in AIP funds over four years, beginning in FY 1994. Can the Department ensure this Subcommittee that any shortfall in AIP discretionary dollars due to LOI demands will not be allowed to postpone airport projects like the new Philadelphia runway?

ANSWER: FAA administratively limits the total grants issued under LOI's to approximately 50 percent of the discretionary funds not specifically set aside for other airport types or purposes. The purpose of this administrative limitation is to provide an appropriate balance between the LOI projects and other airport needs. This helps to ensure that LOI demands will not be allowed to postpone high priority projects.

SUBCOMMITTEE RECESS

Senator LAUTENBERG. This subcommittee stands in recess until May 5, when we will have a hearing on procurement reform, the FAA.

Thanks very much.

[Whereupon, at 12:25 p.m., Wednesday, April 21, the subcommittee was recessed, to reconvene at 2:05 p.m., Wednesday, May 5.]

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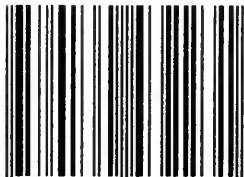
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