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DOT's CLASSIFICATION OF RAIL LINES, THE
PROSPECTIVE ABANDONMENT PROPOSALS OF THE RAILROADS,
AND THE HALL COMMISSION REPORT

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College of Commerce and Business Administration
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Summary:

This paper provides a summary and analysis of three major reports relating to the problem of light traffic density railway lines. The classification by DOT of all rail lines in the U.S. by traffic density indicates the low traffic lines, but unfortunately the lowest category is very broad. The listing by the Interstate Commerce Commission of those lines on which abandonment proposals are pending and those which the railroads plan to seek to abandon in the next three years or are considering for abandonment gives a picture of railroad attitudes toward the viability of various lines. The proposals in total are relatively small compared to the total mileage of light traffic lines--about 9% of the total rail mileage. Policies of the various companies differ widely. The Hall Commission report provides a detailed analysis of the light traffic railway lines in the Prairie provinces of Canada and details a plan for restructuring.

DOT's Classification of Rail Lines, The Prospective Abandonment
Proposals of the Railroads, and the Hall Commission Report

John F. Due
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The issue of light density railway lines and railway abandonments continues to be a major one in the transport field. The requirement of the 4 R Act that DOT classify all rail lines by mileage should facilitate analysis of restructuring the rail network of the country and also provides significant information about the rail system. Another requirement of the 4 R Act that the railroads report to the ICC all lines that they plan to seek permission to abandon in the next three years and lines that they are considering for possible abandonment has provided information about those lines that the railroads themselves regard as of doubtful viability. Concurrent with these listings, the various states have been developing their rail plans, which provide detailed analysis of the marginal lines, although at this time only a few of these plans have been completed and published. The issues in Canada are similar, and early in 1977 the two volume report of the Hall Commission, which reviewed the light traffic lines in the Prairie provinces and produced a restructuring plan, was published.

The purpose of this paper is to review the reports and listings that have resulted and to evaluate their findings relative to the problems with which they are dealing.

PART I. THE CLASSIFICATION OF LINES BY DOT

Section 503 of the Four R Act of 1976 provided for classification of all Class I railway lines in the United States on the basis of the "degree to which they are essential to the rail transportation system." The law further specified that the classification shall be based upon (1) the level of usage measured in gross ton miles, (2) the contribution to the economic viability of the railroad and to other railroads participating in the traffic on the line.

The process of establishing the standards and the actual classification involved three steps:

1. Establishment by DOT of preliminary standards and classifications.
2. Conduct of public hearings on these by the Rail Services Planning Office (RSPO) of the ICC, and presentation of the findings and recommendations by the RSPO to DOT.
3. Issuance of final standards and classifications by DOT.

The purpose of the classification was not made entirely clear, except for the indication in the Act that it was to be considered in allocating Federal funds for rehabilitation and improvements as provided for under the Act.

The preliminary standards were issued Aug. 3, 1976, RSP0's Evaluation Dec. 1, 1976, and the final standards, January 19, 1977.

The Preliminary Standards Volumes¹

The preliminary report stressed, as the primary objective, the classification of rail lines "so that investments in track can be directed where they will do the most good."

Four standards were employed:

1. Traffic density in gross ton miles (which includes the weight of the equipment, diesels, and cabooses as well as of the freight), and the number of passenger trains per day operated over the line.

Density is not only a measure of gross activity on the line, but is also closely related to maintenance of way costs. The report stresses the fact that one-fifth of the mileage handles two-thirds of the total traffic, while one-third of the network handles only 1 percent of the traffic. Various studies show that maintenance of way costs fall very sharply per ton mile, up to a certain point, as traffic increases on lines suitable for through freight operation.

DOT selected, rather arbitrarily, the figure of 20 million gross ton miles per mile of line (about 9 million net ton miles)--for delimiting the top category, on the grounds that the 40,000 miles with this traffic have two-thirds of the total traffic, and that maintenance of way costs per ton mile fall sharply until about this traffic density is reached.

Gross ton miles is used rather than net because data of the latter are not kept by line segments. In the determination of density, several rules were adopted:

1. A five-year period was considered: 1971-1975 inclusive.
2. The density figure used was as follows:
 - a. The 1975 figure if it exceeded the delimiting line (e.g., 20 million GTM/M for the Class A main line category.
 - b. The average of the preceding four years, unless the five-year data show a declining trend and 1975 does not show a figure above the delimiting line.
 - c. The highest annual density in the five-year period if there is no trend.

¹U.S. Department of Transportation, Preliminary Standards, Classification, and Designation of Lines of Class I Railroads in the United States (Washington, D.C.: Government Printing Office, 1976), 2 vol.

For passenger density, DOT followed the standard that if a line had three or more passenger trains a day each way it should be assigned to the highest traffic at category.

2. Service to major markets. DOT analyzed the 486 market areas into which the country is classified and determined those market areas which originated or terminated at least 75,000 cars a year, but were not served by a line with density over the 20 million GTM figure. Ten such areas were found,¹ and a line serving each included in the top-priority network.

3. Potential main lines in Corridors of Excess Capacity. Such a corridor was defined as one in which there are three or more lines, and capacity exceeds actual traffic by more than 50 percent.

4. Defense-required lines--Branch lines required to handle oversize military shipments.

With these criteria, all Class I lines were placed in the following classes:

Category A Main lines--Top Priority: Density of 20 million or more GTM per year, or three or more passenger trains per day; or necessary to provide service to a major market.

Category B Main Lines-- Those with between 5 million and 20 million gross ton miles per year. The 5 million figure was selected "as the lower bound of the density range in which a line can reasonably be classified as a mainline" (p. 12)--an unhelpful statement.

Potential A Main Line--Temporary status for lines in corridors of : excess capacity, ultimately to be reclassified on the other criteria.

A Branch Lines--Density of less than 5 million GTM but more than 1 million. These are the lines--some branches in the usual sense, some relatively long secondary lines--that carry substantial traffic, but below what the DOT regards as reasonable for main line operation.

B Branch Lines--less than 1 million gross GTM/M. These in fact range all the way down to 10,000 or even less, quite apart from lines not currently operating.

Defense Essential Lines

The primary classification was on the basis of density; the major market criteria resulted in the adding of about 1500 miles, particularly in northern New England. The passenger train criterion added another 1568 miles--major links being Newark and Boston, Chicago and St. Louis via Bloomington, and Jacksonville to Miami via Orlando.

¹Bangor and Augusta, Maine; Panama City and Fort Myers, Florida; Parkersburg, W. Va.; Escanaba, Two Harbors, and Marquette, Michigan; Bemidji, Minn.; Baton Rouge, La.; and Corpus Christi, Texas.

The analysis of the corridors produced some interesting information, particularly the high degree of excess capacity in some areas (e.g., Chicago-Pittsburgh) and the dominance of traffic by particular roads. For example, Chicago-Buffalo is dominated by Conrail (primarily via Cleveland); Chicago to the Southern Gateways by the B and O (via Cincinnati); Chicago to Kansas City and to Dallas by the Santa Fe; Chicago to Omaha by the CNW; Kansas City and Omaha to Colorado by the Union Pacific (some of its line is carrying 100 million GTM/M); Chicago to Minneapolis by the Burlington Northern.

Some other basic data presented are of interest. On the average, the density of traffic on the railroads is about 10 million GTM/M. The estimated cost to rebuild a poorly maintained line to high standards is estimated to be \$250,000 per mile--but the report stresses that most lines do not require such rebuilding, given the traffic. Strong emphasis is placed upon the need for consolidation to raise traffic density.

The Evaluation by the RSPO

As was to be expected, RSPO was highly critical of certain aspects of the report and recommendations,¹ based in part on the statements at the hearings, partly on the work of the RSPO staff. The criticism concentrates on four issues: failure of DOT to develop a nationwide system; overstress on gross ton miles (gross density); use of the excess capacity corridor concept; and overstress on consolidation.

Failure to Develop a System. A basic criticism of the report was that it did not develop a nationwide rail system essential to meet the needs of the country, but instead dealt with each line segment separately. Appropriate methodology, RSPO argues, requires the initial development of a system and then treatment of each segment, rather than emphasis on the segments without a system. Thus there are absurd results. The segment of the Rio Grande main line between Bond and Dotsero is not placed in the top priority category (at Dotsero some traffic goes off via the Royal Gorge route, while at Bond, eastbound traffic from the Craig line joins the main line--thus a segment essential for the system is not in the top category. There is a small gap in the Burlington Northern's main (Great Northern) line, St. Paul to Seattle. On the other hand, small isolated segments are placed in the top category because traffic happens to concentrate on them. Similarly, when tracks are paired, as between Cheney and Pasco, Washington, all westbound traffic using one line, all eastbound the other, each was treated separately, dropping them out of the top category.

Overstress on Gross Traffic Density. A second major criticism stressed the almost complete emphasis in classification upon gross ton miles--total traffic. RSPO points out the obvious difficulties with the GTM measure; it ignores completely the value of the commodities being carried and thus the economic significance of the transport, and it gives equal weight to tons of freight cars as to their content. The result is to penalize roads that have been particularly successful in minimizing empty car movements.

¹Rail Services Planning Office, Interstate Commerce Commission, Evaluation Report of the Secretary of Transportation's Preliminary Classification of Rail Lines (Washington: Interstate Commerce Commission, 1976).

Secondly, density figures have been distorted by inadequate maintenance; otherwise preferred lines have not been used in recent years because of poor track and service.

Most important, however, by stressing density, the report ignores the economic viability of the lines--the essentiality of lines to the system, to the carrier, and of course to shippers. Thus essential segments of main lines are not included, as for example, the portion of the Western Pacific west of Flanagan--yet the carriers could not survive without these lines.

RSPO also stresses the need for greater emphasis on passenger service; the need for using projections of traffic rather than simply historical data; with respect to consolidations, the problems of terminal yard capacity and delay; and of seasonal peaks.

Thus RSPO proposes that the lines be placed in two categories: system essential, and carrier essential; and that any lines having passenger service be placed in the top priority category.

The Excess Capacity Corridors. RSPO is particularly critical of the use of the excess capacity corridors. Failure to classify these lines by the regular standards places them in limbo--and may result in traffic losses. It is also argued that the report greatly overstresses consolidation and the gains from it--that doing so is beyond the appropriate scope of DOT's task. The techniques used to measure capacity are criticised as well as the neglect of terminal yard capacity and the seasonal peak problem. RSPO also notes other issues raised in the hearings--for example, the need for greater state input; the need to retain lines to aid development of rural areas and smaller towns; and the questions raised as to whether consolidations would actually improve the financial situation of the industry.

In summary, the basic recommendations of the evaluation report can be condensed as follows:

1. The lines given top priority should constitute a unified interstate rail system.
2. Policy with respect to consolidations should not be determined until all of the studies relating to markets and restructuring are completed, and should not enter into the classification-of-lines process.
3. There should be provisions for continuing public input into the planning process.
4. Instead of A and B main line designations, the main lines should be classified into two categories: system essential and carrier essential.
5. Branch lines indicated as potentially subject to abandonment should be identified in the final report.

6. Terminal capacity should be considered with respect to consolidations.

7. At least current data, and preferable projections, should be used rather than historical data.

8. All lines over which passenger trains are operated should be classified as essential.

DOT's Final Standards Report

The final report by DOT reproduces much of the material contained in the preliminary volume, so that it is a self-inclusive document. It does incorporate some suggestions of RSPO, but very categorically rejects others; there remains a substantial difference in philosophy between the two agencies.

The Final Classification. The final classification involves six classes, modified slightly from the initial:

	Route miles (000s)	% of total route miles
1. A main lines, meeting one of the following requirements:		
a. Density of 20 million GTM/M	40.5	20.9
b. Connecting major market areas	1.4	0.7
c. National defense essential main line requirements	8.5	4.4
Total, A category	50.4	26.0
2. B main lines: 5 million to 20 million GTM/M.	48.8	25.2
3. Duplicating category: corridor of consolidation potential.	(18.9)	(9.7)
4. A branch lines, 1 million to 5 million GTM/M.	18.9	21.3
5. B branch lines: under 1 million GTM/M.	32.3	27.6
6. Lines potentially subject to abandonment.		#

#not known when report issued.

Thus the classification, while basically the same, involved several modifications:

1. The lines in the corridors of excess capacity were also included in the primary categories by the basic standards.

2. The national defense category was modified from inclusion of branch lines needed for defense purposes to main lines so required to provide connections necessary for defense reasons.

3. The sixth category potentially subject to abandonment was added, but figures were not available when the report was issued.

4. Passenger service was eliminated as a criterion, on the grounds that passenger service was being evaluated on its policy criteria.

The report specifically rejected several RSPO arguments. First, it rejected the argument that DOT was obligated to develop a unified national rail system, maintaining that there was no such mandate under the legislation, and DOT was instructed to consider each line separately. In fact the final report does provide for connections necessary for a unified system, in large part under the "national defense" criterion. The gaps in the preliminary proposal are largely eliminated.

Secondly, DOT reemphasizes the primary reliance upon the density--GTM/M criterion. It rejects the "viability" approach and the "carrier-essential" proposals, partly because of inadequate data, partly because it concludes that there was no mandate to do this. There is no possibility of analyzing each segment on a revenue-cost comparison basis, as was done in the planning for Conrail, because the railroads do not keep data in this form (they will be required to in the future under new ICC standards). But beyond this the report argues that DOT had no responsibility to consider the viability of particular carriers--and thus the western segment of the Western Pacific is still not classified in the top priority category. The report, however, does recognize the varying relationship between net and gross ton miles and the potential discrimination against efficiency in car use, and adds some 258 miles of line, primarily of the SOO (239 miles) into the top priority category on this basis.

Thirdly, the report, while following the recommendation to classify the excess corridor lines under the usual standards, did specifically reject the criticism that it should not be concerned with consolidation, and listed the excess corridor lines in addition to their basic classification.

The report agrees that terminal congestion should be considered with regard to consolidation. It rejects, however, the use of projected traffic data as involving too much uncertainty.

Thus the basic classifications, except for inclusion of the excess corridor lines in the primary lines, as well as some connecting links, remains much the same as in the preliminary report. Some of the errors in the original classification were eliminated (though errors remain in some of the maps).

The Actual Classification

Study of the sector maps and other information provided in Vol. II of the final report gives a better picture of the results of the classification.

A Category Main Lines--the top priority lines

The top priority category includes most of what are usually regarded as the main traffic routes of the country, although the cutoff does exclude some lines that are often so regarded. Included also are a number of shorter segments in high traffic districts. The following list is not intended to be complete, but to give a general picture:

East:	Conrail main lines:	Chicago-New York via Cleveland and and via Fort Wayne New York-Washington Boston-Albany Pittsburgh-St. Louis via Effingham Toledo-Cincinnati; Pittsburgh-Cincinnati ex-Reading-CNJ; Philadelphia-New York ex-E-L: Buffalo-New York
	Boston and Maine:	Boston-Albany with MEC, BAR: Boston-Bangor-Oakfield
	B and O:	Chicago-Washington-Philadelphia Toledo-Cincinnati
	C and O:	Cincinnati-Newport News Chicago-Detroit via Grand Rapids Toledo-Columbus-Portsmouth
	P and LE:	Pittsburgh-Cleveland
	Grand Trunk:	Chicago-Flint
	B and LE:	Bessemer-Conneaut
	N and W:	St. Louis-Detroit (ex Wabash) Chicago-Fort Wayne-Cleveland (ex NKP) Cincinnati-Norfolk
South:	L and N:	Jacksonville-New Orleans Macon-Atlanta-Nashville-St. Louis Memphis-Nashville-Louisville-Cincinnati Cincinnati-Knoxville-Atlanta Chicago-Louisville (ex Monon) New Orleans-Birmingham-Nashville
	SCL:	Washington to Miami and Tampa via Charleston
	SR:	New Orleans-Birmingham-Atlanta- Charlotte-Washington Cincinnati-Atlanta Chattanooga-Memphis Lexington, Ky.-Princeton, Ind. Atlanta-Jacksonville Chattanooga-Knoxville

West: SP:	Los Angeles-New Orleans via Tucson and El Paso-Vaughn Ogden-San Francisco Sacramento-Stockton-Los Angeles via Fresno San Francisco-Portland via Klamath Falls
UP:	Omaha-Denver-Portland and to Ogden-Los Angeles Kansas City-Omaha
CNW:	Chicago-Omaha Omaha-Minneapolis Chicago-Eau Claire
SSW:	St. Louis-Texarkana
SF:	Chicago-Los Angeles-San Francisco via Amarillo Los Angeles-San Diego Kansas City-Fort Worth-Houston Clovis-Temple
DRGW:	Denver-Salt Lake City-Ogden
MoP:	St. Louis-Little Rock-Texarkana-San Antonio Chicago-St. Louis (ex C&EI) St. Louis-Kansas City El Paso-Dallas-Texarkana (TP)
KCS-L and A:	Kansas City-New Orleans
Frisco:	Birmingham-Memphis-Kansas City
ICG:	Chicago-New Orleans via Greenwood
BN:	Chicago-Minneapolis-Seattle (via ex GN) Denver-Fort Worth (CS-FWD) Chicago-Omaha Kansas City-Omaha Spokane-Missoula-Billings-Omaha
RI:	Chicago-Rock Island
WP:	Wells-Flanigan

Category B Main Lines

This category includes a wide range of through routes that do not meet the A requirements, and other secondary main lines, and some short segments. It is not possible to provide a complete list; the following list consists primarily of routes generally thought of as main lines that do not fall in the A category.

Conrail:	Cleveland-St. Louis via Mattoon (ex NYC); Indianapolis-Bloomington, Ill. Syracuse-Massena; Niagara Falls-Rochester
Milw.:	Minneapolis-Seattle

WP:	main line west of Flanigan; northern California line; Wells-Salt Lake City
BN:	Columbia River to WP connection via Bend Omaha-Denver portions of ex NP main line
UP:	Kansas City-Denver Ogden-Butte
RI:	Memphis-Tucumcari Rock Island-Denver
SP:	San Jose-Los Angeles via coast line
MoP:	Kansas City-Denver
SCL:	Montgomery-Waycross

Category A Branch Lines

This category includes a number of secondary main lines, plus the higher density branches. Some typical examples include:

SP:	Mina branch; Tracy-Dos Palos; Weed-Eugene via Medford Portland-Eugene via McMinnville; Eugene-Myrtle Point
CNW:	Milwaukee-Madison-Union Center
SOO:	Appleton-Wisconsin Jct.
UP:	Ontario (Ore)-Burns
Milw.:	Cedar Rapids-Ottumwa
MEC:	Bangor-Calais
ICG:	Champaign-Havana; Centralia-Decatur-Freeport

Category B Branch Lines--the typical branch line.

Use of the Classification

The basic issue involved is: what use will be made, in practice, of this classification? DOT stresses three: as a basis for decisions by the Federal government about allocation of funds for rehabilitation; as an element in the general study of rail transport being conducted by DOT under instructions of the 4 R Act; and for use by railroad management in decision making about investment of funds. But it is, at present, not at all clear what the significance will be. Will Federal funds be provided only for rehabilitation of category A main lines, many of which do not need it? Will any funds be available for B branch lines? Closely related is the question of the effects the publication of this data will have upon business location decision. Will firms be willing to locate new plants on B branch lines? There are two points of view. One is that by encouraging firms to locate on

the top priority lines, it will be easier and less damaging to eliminate, sooner or later, the remaining mileage--along the lines of the Kneiling-Hilton thesis. The other is that any locational effects that classification may have in leading to greater selection of location on the top priority lines will further weaken the lighter traffic lines, speeding up their demise, whereas they might have otherwise survived.

One net effect would be to concentrate economic activity even more heavily away from smaller cities and rural areas--contrary to other Federal policies. By weakening the secondary main lines and heavier density branches, it could result in the abandonment of lines that allow lower cost than competing forms of transport, and result in loss of a national integrated rail network.

One conclusion is clear: that the classification alone is not an appropriate standard for deciding the future fate of the various lines. This DOT admits--despite its rather obvious preference for mass reduction in rail mileage in the country. Some of the lowest density branch lines are important to particular communities and industries, and, particularly if they are short, constitute a more efficient way of handling the traffic than alternatives.

One of the major contributions the report makes, however, is the stress placed upon excess capacity in many areas (there are many other areas not mentioned since there are only two roads). A basic problem of the rail system is the existence of too many relatively light traffic duplicating "main lines," serving, unfortunately, different intermediate points. There is no easy solution, particularly by voluntary action by the carriers--but the report helps to stress the problem.

PART II. PROSPECTIVE ABANDONMENTS

Under the terms of the Four R Act, all railroads except Conrail were required to report to the ICC the following:

- Category 1. Lines which the carriers anticipate will be the subject of an abandonment petition within three years.
- Category 2. Lines under study and potentially subject to abandonment petition.
- Category 3. Pending requests for abandonment.

The deadline was May 5, 1977; the listing became available in August, 1977.¹ To obtain an overall view of the nature of the proposals and the impact upon the national rail network, a study was made, state by state, of the proposals, a summary of which is provided below. Several admonitions are necessary, however:

1. The proposals include some lines which the railroads are likely not to request permission to abandon. As stated by a responsible official of one major system: "We were hard pressed to find lines that warranted consideration, and we included all that we had any doubt at all about. Probably not more than half will actually be requested."

¹Conrail's listing became available December 1, 1977.

2. In some instances the road does not wish to abandon the segment, but seeks a subsidy because of marginal profitability. Three such cases are known to the author; there are undoubtedly many more.

3. On the other hand, the roads will make some requests of lines that are not listed; there is nothing mandatory about the listing. Some roads were reluctant to list any lines in Category 2 for fear that location of new plants on the line and expansion of existing plants would be discouraged. Only six independent Class II roads indicated expectation that they would request abandonment (one is known to hope that it will not need to abandon); such roads are most reluctant to concede defeat.¹

In the discussion below, the three categories are lumped together since the objective is to determine the nature of the overall potential abandonments. A geographical sequence is used, since the rail systems of adjacent states are often related.

Michigan

Railroad	Abandonment Requested	Category One (three years)	Category Two (under study)	Total
CR	0	0	69	69
C & O	212	66	71	369
GTW	66	60	0	126
Soo	27	224	0	251
LS & I	58	0	0	58
DT & I	31	0	0	31
CNW	0	0	0	15
Milw	0	0	126	126
Total	394	386	266	1030

and New Hampshire

The state of Michigan ranks with South Dakota/as the states most affected. Michigan was threatened with loss of 900 miles under the Penn Central restructuring; about 500 miles of line are being operated under Federal subsidy; and 290 miles transferred to local firms under state subsidy, the future of which is inevitably in doubt. The three categories include 1030 miles, about 17% of the existing rail mileage. Furthermore, the lines are highly concentrated. About 40% of the total is ex Pere Marquette mileage of the Chessie system. All of that road's mileage north of the Ludington line would be abandoned, leaving Traverse City with only the Michigan Northern (ex Pennsylvania). In fact, if the Michigan Northern had not taken over ex Penn Central lines and the C & O abandonments occurred, there would be no rail lines in the upper third of the lower peninsula except the Class II Detroit and Mackinac along the east shore. In central Michigan, the C & O would eliminate most of its mileage north of Port Huron, north of Muskegon on the Lake Michigan side, and in the Greenville and Big Rapids area between Saginaw and Grand Rapids.

Conrail would abandon its line southwest from Jackson to Three Rivers.

¹Municipality of East Troy; Condon Kinzua and Southern; Wellsville, Addison, and Galeton; East Washington; Northampton and Bath; Toledo Angola and Western.

The other major area to lose service is the upper peninsula; the Soo (which proposes very little elsewhere in its system), the Lake Superior and Ishpeming, and the Milwaukee would eliminate most service in the upper peninsula except the Soo's main line to Sault St. Marie and the Milwaukee as far as Channing. The Soo would eliminate most of the already-severed former Duluth South Shore and Atlantic line to Sault St. Marie and St. Ignace (the ferry port), as well as all service to Hancock and Calumet, the last rail line to serve the copper-mining peninsula. The Milwaukee has in Category 2 its long Channing-Ontonagon line and the portion of its line north from Channing as far as Republic. The LS & I would abandon its line from Munising to Marquette.

The state of Michigan has been one of the most active states in rail planning, in view of the great potential loss of rail lines. The 1977 rail plan not only provides a review of the existing lines operated under subsidy, with cost-benefit analysis of them, but also data on proposed abandonments in the three categories.

The data on subsidized lines, summarized below, show a remarkable variation in cars originating and terminating per mile and in the state's estimated benefit-cost ratio. The lines in Lenawee and Tuscola counties and the Hillsdale County Ry. operation show surprisingly high benefit-cost ratios and cars originating and terminating per mile; a few segments retained thus far have no justification, while the largest operation, the Michigan Northern, though marginal, provides the only rail service to a major segment of the state. The Ann Arbor, to be taken over for operation by the Michigan Interstate, is by far the largest subsidy project; it has traffic volume of 3.3 million ton miles per mile. Data of cars originating and terminating are not significant because in large measure the Ann Arbor is a bridge line operated in conjunction with the Lake Michigan car ferry.

Rail Lines Operated Under Subsidy, Michigan, 1977

	Miles	Cars originating/ terminating, per mile	Gross ton miles per mile (millions)	Benefit- cost ratio	Operator
Ann Arbor	322		3.3		Michigan Interstate Ry.
Michigan Northern (Comstock Park- Mackinac City and Traverse City)	246	8	na	.69	Michigan Northern
Lenawee county lines	28	58	na	15.0	Lenawee County County Ry.
Hillsdale county lines	40	113	na	4.0	Hillsdale County Ry.

Rail Lines Operated Under Subsidy, Michigan, 1977 (continued)

	Miles	Cars originating/ terminating, per mile	Gross ton miles per mile (millions)	Benefit- cost ratio	Operator
Vassar Y - Tuscola County	44	41	na	2.25	Tuscola and Saginaw Ry.
Richland Jct - Doster	15	1.7	.01	.28	Conrail
Grand Rapids - Vermontville	42	6.9	.06	.74	Conrail
Mendon-Wasepi	9	11.9	na	2.33	Conrail
Sturgis-Nottawa	8	1.7	na	.49	Conrail
Linwood-Stallings	106	3.1	na	1.35	D & M

The traffic on the lines in pending and proposed abandonment categories is somewhat different from those in such states as Wisconsin; the majority of the lines originated/terminated between 10 and 34 cars a year--the types of operation in which abandonment results in strong protests and some injury if it occurs. In terms of gross ton miles per mile, the majority are between 50,000 and 500,000, with most of this over 100,000. There are some under 35,000 (and under 5 cars per mile)--but this is only a small percentage of the total. The more surprising feature is the amount over 50 cars and over 500,000 tm/m--volumes that by usual standards would make the line self-supporting and far in excess of most of the lines now being operated under subsidy. The principal examples are Chessie branches in the eastern portion of the state, the Milwaukee's Channing-Ontonagon line, and the DT & I's Tecumseh line (the road had originally sought to replace this by trackage rights). Most of the very light density mileage is the ex-Duluth South Shore and Atlantic lines in the upper peninsula. The long lines of the Chessie in the Traverse City area are of the marginal variety which most roads do not seek to abandon--from 18 to 26 cars originating and terminating, and 200,000 to 500,000 ton mi./mi.

The table below shows the number of lines in the various cars originating and gross ton mileage brackets; the following table gives the data on the individual lines proposed.

Cars originating and/or terminating, per mile	Number of lines	Gross ton miles per mile of line	Number of lines
Under 5	7	Under 25,000	4
5-10	1	25,000-50,000	1
10-20	8	50,000-100,000	4
20-34	5	100,000-500,000	7
35-50	1	500,000-1 million	4
51-100	6	1 million and over	1
over 100	1	under 1 million, not further specified	7

Source: Michigan Railroad Plan, August 1977 update.

Railway	Line	Miles	Car/Mi.*	Million GTW/m	Principal Traffic or Source	
C & O	Bad Axe-Crosswell	44	53	1.0	agriculture	
	Palms-Harbor Beach	19	31	under 1.0	grain, fertilizer	
	Poland-Sandusky	7	29	under 1.0	grain, lumber	
	Bad Axe-Port Austin	14	33	under 1.0	grain, paper products	
	Montague-Hart	23	153	.7	fruit, chemicals, lumber	
	Portland-Ionia	15	60	under 1.0	grain, lumber, farm supplies	
	Berry-Fremont	20	66	under 1.0	canned food	
	Hartford-Paw Paw	13	28	.08	fruit	
	Rennies-Northport	28	10	n.a.	cannery	
	Williamsburg-Elk Rapids	9	6	.015	cannery	
	Coleman-Mt. Pleasant	12	1.5	.06	farm supplies	
	Alma-North Greenville	54	11	.02	grain elevator, bridge traffic	
	Edmore-Ramus	76	18	.2	quarry, lumber	
	Traverse City-Bayview	64	26	.5	cannery, lumber, furniture	
	Manistee-Traverse City					
	Milw	Channing-Ontanagon	93	69	.4	paper mill
		Randville-Channing-Republic	33	1.6	.05	lumber products
GTW	Marne-Coopersville	6	14.5	n.a.	lumber	
	Ashley-Greenville	40	37	.3	manufacturers, grain	
	S. Lyon-Lakeland	10	n.a.	.2	--	
	Saginaw-Paines	3	0	0	used by C & O	
	Coopersville-Grand Haven	15	6	n.a.	farm supplies	
	Imlay City-Caseville	66	16	.2	grain, fertilizer	
S00	Newberry-Shingleton	45	55	.5	timber products	
	Munising-Marquette	36	.7	.5	timber products	
	St. Ignace-Trout Lake	27	13	.1	forest products, textiles ¹	
	Nestoria-Bergland	67	1.8	.7	lumber products	
	Houghton-Galumet	14				
	Hancock-Lake Linden	10	13	.1	wood products, food products	
	Barago-Houghton	25				
	Raco-Raco Jct.	27	2.5	.003	pulpwood	
	Rapid River-Eben Jct.	31	2.5	.004	pulpwood	
DT & I	Waseon-Tecumseh ²	26	92	.4	--	
IS & I	Munising-Marquette					
	Little Lake-Lawson	58	18	under 1.0	timber products	

¹Also ferry connection.

²DT & I had planned to replace by trackage rights.

Wisconsin

Railroad	Abandonment requested	Category 1	Category 2	Total
CNW	398	214	16	628
Milw	55	215	284	554
Soo	0	23	0	23
Other	0	12	1	13
Total	453	464	301	1,218

The state of Wisconsin is characterized by a very substantial mileage of light traffic lines, and few high density ones.

The total in the three categories is 1218 miles, or 21% of the total route mileage in the state as of 1977, the largest element being for lines on which abandonment has been requested. Two railroads operate 65% of the total mileage in the state. The Northwestern which operates 44 percent, has concentrated on immediate applications for abandonment, and ones likely in the next three years, with little in category 2 (only 16 miles). By contrast, the Milwaukee has concentrated in categories 1 and 2, with only 55 miles in current applications. The Soo has 23 miles in category 1, none in the other two.

Analysis of the three categories shows that in general, while many of the segments are much longer than past abandonments, they involve in addition to some of the typical branch lines, long "tertiary" through routes of limited traffic not required for through service.

The Northwestern has three major abandonments pending: two in the north, primarily pulp log carriers, the third in the farming area of the extreme southwest. Cars originated and terminated per mile are 10, 11, and 8 respectively for the three. The combination of low traffic and the long length renders them uneconomic by any standards--though possibly segments could be retained. CNW's category 2 lines are similar: a NE-SW line from Edgar through Marshfield to Merrilan; a segment of a through line extending northwesterly from Ripon to Bancroft (a line without others close to it), together with shorter lines. The line does not propose abandonment of the Reedsburg - Wyeville portion of the old main Chicago-Madison-Minneapolis route, as had been anticipated.

The Milwaukee category 1 lines include two relatively long "branch" lines--Monroe to Mineral Point in the southwest (loss of which together with the CNW line noted above would leave the large area southwest of Madison without a railroad); Sparta to Viroqua, in the west central part, and Milton Jct. to Waukesha. The first two lines show figures of 14 and 20 cars originating and terminating per mile. The Milwaukee's category 2 calls for substantially more abandonment: a long section of the east-west secondary main line extending from Milwaukee to Prairie du Chien, between the latter and Lone Rock; a long north-south secondary route from Milwaukee via Horicon to Oshkosh and Horicon to Portage.

The net effect would be to leave a large sector in the southwest without any rail lines (four would come out of this sector); the remainder being either pulp wood lines in the north or duplicating lines in the central part of the state--although leaving some communities without rail service.

The 1977 Wisconsin Rail Plan provides detailed analysis of 14 of the lines, summarized below. The report stresses that a high benefit/subsidy ratio is not conclusive evidence that the line should be retained, as other alternatives may provide a higher benefit-cost ratio.

RR	Line	Mileage	Cars per mile ¹	Benefit-subsidy ratio	Federal subsidy priority
CNW	Hayward-Bayfield	77	9	.59	X
CNW	Conover-Phelps	9	7	2.74	
CNW	Gillett-Scott Lake	82	12	.31	X
CNW	Galenville-Trempealeau	7	7	5.07	
CNW	Rosemere-Forest Jct.	25	13	.45	X
CNW	Evansville-Beloit	23	4	1.46	
CNW	Lancaster-Kleenville	101	8	.57	X
CNW	Lake Geneva-Ringwood (Ill.)	9	4	1.69	
MILW	Sparta-Viroqua	35	20	2.14	X
MILW	Monroe-Mineral Point	47	14	1.21	
MILW	Whitewater-Waukesha	28	4	.33	
SOO	Marshfield-Greenwood	23	14	.62	
ICG	Madison-Freeport	59	13	.17	X
MET	Mukwonago-East Troy	7	71	1.52	X

¹Originated/terminated.

Minnesota

Railroad	Abandonment requested	Category 1	Category 2	Total
BN	0	120	0	120
DW&P	0	71	0	71
DMIR	7	0	9	16
CNW	61	190	84	335
Milw	0	398	46	444
RI	0	61	0	61
Soo	0	12	99	111
ICG	0	20	0	20
Total	69	872	238	1,179

Minnesota has one of the highest percentages--16--of the proposed abandonment mileage. The most significant proposals are those of the Milwaukee, primarily the elimination of most of the long line that began at La Crosse and extended to Wessington Springs in South Dakota; nearly 200 miles of this

line in the state would come out. The other long line is the Ortonville-Fargo line up the western border. Most of the remainder is in the network of lines south of the Twin Cities.

The other major line in the state is the center portion of the Soo line from Duluth to Thief River Falls (between McGregor and Bemiji), in a thinly settled area. The Northwestern proposes a substantial amount, concentrated in the southwest portion of the state, where there is extensive duplication of mileage. Two segments are portions of the ex-Great Western line via Rochester, and another is a segment of the old GW main line from the Twin Cities to Omaha. The Burlington Northern proposals center in the area directly north and west of Minneapolis. The Rock Island proposals involve a portion of the Albert Lea-Estherville line and mileage west of Worthington. Duluth Winnipeg and Pacific would eliminate its own line into Duluth and use trackage rights instead.

Illinois

Railroad	Abandonment requested	Category 1	Category 2	Total
BN	16	141	0	157
N & W	81	9	0	90
CEI	3	0	0	3
B & O	159	0	0	159
ICG	309	63	0	372
CNW	0	47	0	47
IT	0	42	0	42
Milw	0	63	117	180
Other	0	4	7	11
Total	568	370	117	1062

While Illinois is second only to Texas in total rail mileage, it does not have the extensive overbuilding of states such as Iowa, though it has substantial duplicating mileage of secondary lines. There are a large number of abandonment proposals, but many are of very short segments; the total of 1,062 miles proposed is exactly 10% of the rail mileage. The state lost only about 33 miles of Penn Central, and has 171 miles operated under subsidy. Between 1974 and 1977, 199 miles had been approved for abandonment, by far the most important being the former Minneapolis and St. Louis (C and NW) line to Peoria (between Keithsburg and Middle Grove). Major proposals are as follows:

Illinois Central: The largest portion of the total is proposed by the ICG, most of which has already been requested. Much of it is mileage of the ex-GM and O; that road had a very substantial network of light traffic lines. These include the long Dwight-Washington line with a branch to Lacon; the line through San Jose from Springfield to Peoria; and the line from Bloomington through Mason City to Jacksonville. Proposals include portions of the IC's own lines including the ends of the Leroy-Potomac line, the long line from a point near Kankakee to Bloomington, and a major segment north from the East St. Louis area, the former GM and O line now being used. The elimination of much of the GM and O mileage was made possible by the merger.

Burlington Northern: The BN has been pursuing a policy of eliminating light traffic branches but has done little to through routes in Illinois. It has already eliminated its Fairview-Lewiston line; three short branches are pending, and a number of relatively short dead end branches, centering in the area northwest of Peoria are proposed. The longest segment, East St. Louis to Whitehall, on its main line to St. Louis, will be replaced by trackage rights.

Chicago Northwestern: The major proposal is the Sycamore-Byron segment of the ex-Chicago Great Western main line.

Milwaukee: Much of the line from Joliet to Momence, which swings around Chicago and originally connected with its line to southern Indiana; the lines from Rockton to Rockford and to Kittredge, on the main line to Omaha; and down the Mississippi from Savanna to East Moline. These will withdraw the Milwaukee from a substantial area in northern Illinois. The last three named are in category 2, and may not actually be abandoned, of course.

Illinois Terminal: Lincoln north to Mackinaw, to be replaced by trackage rights, and the line south from Troy to O'Fallon.

Norfolk and Western: the ex-Wabash line from Streator to Fairbury; and the line (already segmented) that extended from Bluffs to Keokuk, Iowa.

The Illinois State Rail plan provides detailed information on the lines for which abandonment has been requested. Data of cars originating and terminating, and gross ton miles per mile, are summarized below:

Cars originated/terminated, per mile, 1975		Gross ton miles/mi. 1974	
Under 1	2	10,000 and under	3
1-5	6	10,000-20,000	3
6-10	6	20,000-50,000	6
11-15	3	51,000-100,000	4
12-20	1	101,000-500,000	2
21-30	2	Over 500,000	2
Over 30	1		

Thus, most of these lines have only nominal traffic; evidence shows that no line under 10,000 is viable (unless no more than a mile or so long), and ones under 50,000 are almost certain to be submarginal. But some of the lines, particularly those originating or terminating more than 20 cars per mile, do provide the only rail service to firms shipping substantial amounts. The Illinois Department of Transportation, in its cost benefit analysis, found 8 lines to have benefits from state rehabilitation and support in excess of the costs. These are the lines (except for 2) that are placed in state Categories 1 and 2 for possible subsidy, plus one long line with a figure of .88 that provides the only service to a substantial area. One of the major proposals was not analyzed--the B and O's Decatur-Indianapolis line; the B and O does not plan to cease operations to Decatur, but to use trackage rights for most of the way. This is a Class A Branch density line.

Primarily the abandonments will bring an end to extensive mileage with extremely light traffic, lines that are completely uneconomic, with obviously little loss to anyone. But several communities will lose all rail service, Virginia being the most significant, as well as a number of elevators, some shipping in substantial quantities (for example, Alonzo, Penfield).

Iowa

Railroad	Abandonment Requested	Category 1	Category 2	Total
CNW	0	364	137	501
BN	0	116	0	116
ICG	0	97	0	97
Milw	0	325	264	589
N & W	0	36	0	36
RI	0	40	0	40
BN	0	51	0	51
Total	0	1,029	401	1,430

Iowa suffered greatly from overbuilding, the four principal roads--Milwaukee, CNW, Burlington, and the Rock Island and their predecessors reaching out into each others' territories. The system developed in the era of the small country elevator, now outmoded. A detailed study of some 71 branch lines in the state was undertaken by Professor C. Phillip Baumel of Iowa State and several colleagues for the Iowa Department of Transportation and U.S. DOT, providing detailed figures and an assessment of the benefit-cost ratio of upgrading the lines. In only 13 out of the 71 was rebuilding found to be warranted.

While a number of the lines covered in the study are not included in the abandonment proposals, and a few (segments of old main lines) are proposed though not in the study, there is a close parallel between the proposals and the lines studied. 1,430 miles, 19% of the state's mileage, is proposed for abandonment.

Milwaukee--The Milwaukee does not have a large number of traditional branch lines in Iowa, but considerable light traffic mileage. The major abandonment proposals center in two areas: dismemberment of the long branch from Des Moines via Spencer to Spirit Lake; the Rockwell City-Storm Lake-Rembrandt branch off this line, with traffic of 19 cars per mile, grain and fertilizer primarily; the Clive-Herndon segments (the Albert City-Herndon segment, of which this is a part, has traffic of 30 cars); and the Spencer-Milford segment, with 25 cars, and one of the few lines in the Baumel study to approximate 1 on a benefit-cost basis (.8).

¹An Economic Analysis of Upgrading Rail Branch Lines. U.S. Department of Commerce, National Technical Information Service, March 1976.

The other major abandonments center around Ottumwa and Cedar Rapids: Peralta (Cedar Rapids)-Hopkinton, part of the line to Calman, 9 cars; the portion of the Cedar Rapids-Ottumwa line south of Amana (which has no other rail line); Ottumwa-Muscatine, a portion of the old Kansas City-Chicago main line. One of the more significant is the 10 mile Conover-Decorah branch, which would leave Decorah, pop. 7,400, without a rail line, with traffic of 28 cars per mile, and a Baumel coefficient of .7.

The line has under consideration also abandonment of three major segments of its main Chicago-Omaha line, with plans for trackage rights over the adjacent Chicago and Northwestern.

Northwestern--The CNW is second to the Milwaukee in mileage proposed for abandonment, but much more scattered, for the most part the removal of the least productive segments of minor through routes. The longest is the old Great Western main line from Dubuque to Oelwein--lessening by one the number of through routes from Chicago to Omaha. Major segments of the Fort Dodge-Albert Lea (Minn.) line would come out, as well as of the Des Moines-Fort Dodge line, and the long branch to Holstein (the remnant of a line that once went through to Sioux City).

The following partial list shows Baumel figures for cars originated and terminated per mile, together with the Baumel coefficient (1 indicates that benefits and costs from rebuilding would be equal), on a group of Northwestern lines. Almost without exception, the primary traffic is grain, the secondary, fertilizer.

Line	Miles	Cars originated/ terminated per mile	Baumel coefficient
Marathon-Alton	59	18	.28
Humboldt-Luverne	14	51*	.11
Oelwein-Dubuque	69	8	.1
Ayrshire-Terrill	34	27*	.27
Ellsworth-Lawn Hill	21	76*	.4
Minerva-Zearing	19	34	.4
Lakeview-Holstein	15	--	.4
Mason City-Kesley	34	42	.8
Carroll-Harlan	40	26	1.23
Belmond-Alexander	7	12	.27

*for entire line; best part to be retained.

Burlington Northern--The Burlington Northern proposals are not significant, and except for the Mediapolis Washington line (37 miles, 5 cars, Baumel coefficient .06, mostly fertilizer) in the southeast, all are in the southwest. The longest is the Creston-Maryville (40) line, the most significant is the 15 mile Clarinda -Villisca line, leaving the former, population 5,420, without a rail line. This line handles 78 cars per mile, mostly sand and gravel, much of the traffic temporary, with a .37 Baumel coefficient.

Illinois Central Gulf--The IC proposes two lines, one of which will take it out of South Dakota--the line from Cherokee to Sioux Falls, 96 miles, 20 cars, Baumel coefficient .14 (though a Class A branch); and Cherokee-Washto, remnant of the old line to Onawa, 17 cars, .13 coefficient.

Rock Island--The Rock Island, though having a substantial mileage of light traffic lines in the state, has proposed abandonment of only four relatively short segments: Hancock-Avooca (11 cars; coefficient of .61); Woden-Titonka (29 cars; .39), Washington-Keota, and Royal-Hartley. The last named is a portion of the old secondary main line from Des Moines to Aberdeen, S. Dak.

Norfolk and Western plans to abandon its 36 mile branch line to Ottumwa off its Des Moines line that generates virtually no traffic. In general, these Iowa lines originate and terminate much more traffic than the lines proposed for abandonment in many states. But most are in poor condition; most are owned by three roads that are not strong financially; and a systematic program for redesign of the rail and grain elevator systems have been developed by the Iowa State study. Some of the lines noted will undoubtedly be retained and improved under subsidy.

On the whole, the Iowa abandonments are not as drastic as might be expected; a number of lines, particularly of the Rock Island, with relatively light traffic, are not listed, even in Category 2. The net effect, however, is to clear out a substantial amount of mileage that contributes little traffic, mostly in grain and fertilizer; the grain can be trucked to nearby larger elevators at relatively low cost. The more surprising abandonments proposed are those of two relatively short lines with substantial traffic, that serving Clarinda in the southwest and Decorah in the northeast. In addition a few lines proposed by the CNW have enough traffic to warrant retention under subsidy, on the basis of the Baumel study.

The Dakotas, Kansas and Nebraska

The four states west of the Missouri did not suffer from the excessive building of the states directly east of them, partly because population was more scattered and farm output per acre less, and with less manufacturing. Of the four states, however, South Dakota would suffer a drastic loss of its mileage, about 45%; the other three would experience relatively small losses.

North Dakota

Railroad	Abandonment Requested	Category 1	Category 2	Total
Milw	0	0	141	141
BN	10	154	0	164
SOO	0	0	36	36
Total	10	154	177	341

South Dakota

Railroad	Abandonment Requested	Category 1	Category 2	Total
CNW	136	47	66	249
Milw	0	315	762	1,077
SOO	0	0	33	33
BN	12	149	0	161
Total	148	511	861	1,520

Nebraska

Railroad	Abandonment Requested	Category 1	Category 2	Total
BN	0	46	0	46
CNW	115	88	10	213
RI	0	20	0	20
UP	0	0	41	41
Total	115	154	51	320

Kansas

Railroad	Abandonment Requested	Category 1	Category 2	Total
MoP	85	42	0	127
UP	14	0	0	14
KCS	0	8	0	8
MKT	0	27	0	27
RI	0	72	0	72
SF	0	0	28	28
Total	99	149	28	276

North Dakota--By contrast to South Dakota, North Dakota has relatively little proposed (7% of its mileage), apart from the northern segments of three Milwaukee branches noted above that extend into the state, and the road's long north-south branch to Fargo from Ortonville, Minn., along the state border. Burlington Northern is considering two major branches, York to Dunseith, one of the numerous branches extending toward the Canadian border from the ex-Great Northern main line, and a branch extending to Forbes along the South Dakota border. The Soo is considering its Pollock branch, also along this border.

South Dakota has always had a relatively weak rail system bypassed by the major transcontinental routes, having only the Milwaukee's Seattle line. Abandonment proposals total 1,520 miles, 45 percent of the state's mileage.

Roughly 70% of the proposed abandonment is by the Milwaukee, by far the most important carrier in the state. The major proposed abandonment under consideration is the entire Rapid City line, 366 miles, serving a relatively thinly populated intermediate area, but with a class A branch line density. Rapid City would still be served by the CNW, but the intermediate points would lose rail service. Other major proposals would eliminate the long Faith and Isabel branches out of Trail City in the far northwest (the Faith line originates/terminates less than 1 car per mile); substantial branches extending north from the main line to Sisseton, Brampton, Linton, and Edgerly (ND); substantial mileage in the southeast, from Elk Point, near Sioux City, to Mitchell, and the Platte line. Most of the long north-south line in the eastern portion of the state from Madison to Bristol (already segmented), and the Wessington Springs end of the line that begins at La Crosse, Wis. would be abandoned.

The principal CNW abandonment has already been approved--from Wren, Iowa to Iroquois, plus the Redfeld branch, a long north-south line in the eastern portion of the state (to be replaced by trackage rights on the Milwaukee). BN proposes the abandonment of the ex Great Northern line from Sioux Falls to Yankton and Hayti. This was always something of an anomaly, far out of the regular GN territory.

Nebraska abandonments, 6% of total mileage, in part are of lines duplicating service of other roads, leaving some intermediate stations without service. The largest mileage is that of the Chicago and Northwestern, centering in the Fremont area, including the long line to Lincoln, plus a portion of the old secondary main line from Sioux City to Omaha via Oakland, and the long line from Norfolk to Winner, South Dakota. The Rock Island line to Beatrice, and a Union Pacific branch to Loup City off the Ord branch are the other major segments--a small total considering the large network of branch lines in eastern Nebraska.

Kansas also has a relatively small (4) percentage of total mileage. The principal route is an east-west line of the Missouri Pacific, along the southern border of the state, from Deering west to Dexter and Winfield, with a branch to Arkansas City. This is a portion of a potential "through" route from Larned to Nevada, Missouri, but is not used as such. The others are primarily branches extending into a city also served by other roads: that of the UP into Lawrence, of the RI from Troy via Holton to Topeka; of the MKT from Parsons to Coffeerville (a class A line, a portion of its route to Oklahoma City). This will be replaced by trackage rights on the Rock Island.

Pacific Northwest

Of the four states of the Pacific Northwest, Idaho and Washington have surprisingly high percentages proposed for abandonment, 11 and 12 respectively. The Montana figure is 6%, Oregon 4. Partly, the high figures reflect competitive overbuilding in some areas, particularly in eastern and southwestern Washington, partly, the nature of the economies of the areas, which result in little rail traffic.

Montana

Railroad	Abandonment Requested	Category 1	Category 2	Total
BN	0	162	0	162
Milw	0	79	54	133
UP	0	2	0	2
Total	0	243	54	297

Idaho

Railroad	Abandonment Requested	Category 1	Category 2	Total
UP	1	138	114	253
BN	0	24	0	24
Total	1	162	114	277

Washington

Railroad	Abandonment Requested	Category 1	Category 2	Total
MILW	2	132	210	344
UP	1	37	24	63
BN	0	160	0	160
Total	3	330	234	567

Oregon

Railroad	Abandonment Requested	Category 1	Category 2	Total
UP	0	0	44	44
SP	25	1	0	26
BN	5	13	0	18
CK&S	0	24	0	24
Total	30	38	44	112

In Montana, much of the abandonment would lessen duplication of service. Burlington Northern requests include the long Saco-Hogeland ex GN line in eastern Montana extending toward the Canadian border and the ex GN branch into Lewiston (served also by the Milwaukee), and former NP lines to Red Lodge and one extending over the border to Wallace, Idaho. The Milwaukee proposals consist of the Bozeman-Gallatin gateway line in the south center, the Winifred branch, the Bear Lake branch east of Missoula, and the Agawam end of the Lewiston line. All the larger towns will continue to have service.

The proposals in Idaho are rather surprising, calling for elimination of 277 miles, all Union Pacific except BN's Wallace branch coming in from Montana. The proposals would eliminate the Twin Falls-Wells, Nevada line, built relatively late as a cutoff from Idaho to California; the entire Shoshone-Hill City-Ketchum line, the one that served Sun Valley; and the line to West Yellowstone, primarily a passenger route in the past.

The changes proposed in Washington involve primarily wholesale abandonment by the Milwaukee of most of its branches in the state, and the dismemberment of the ex-Spokane Coeur d'Alene and Palouse, now part of the Burlington Northern. The Milwaukee would eliminate its two long lines to the Pacific--the Raymond and Hoquiam lines (both areas being served by other roads), the line from Spokane north to Metaline Falls, and the Hanford and Marcellus branches in central Washington, leaving it with little but the main line. It would also abandon the disconnected Port Angeles-Port Townsend line on the Peninsula, leaving the area without rail service. The BN abandonments would eliminate most of the once electric SCD and P, except for segments to be served from other parts of the BN system, plus the line connecting the Central Washington branch with the ex-NP main line (Odair to Adrian). The Union Pacific would eliminate its long La Crosse-Connell line in the wheat country of southeastern Washington, an area which suffered serious overbuilding of rail lines.

In Oregon, the Southern Pacific is currently seeking to abandon the Brownville-Springfield segment of its east side line in the Willamette Valley. Otherwise the only proposal of any consequence is that of the Condon Kinzua and Southern, wholly owned by a lumber company, to abandon its entire line, found by FRA inspectors to be in such bad shape that the lumber company owner regards rebuilding as uneconomical. With this line to go, the UP is considering abandonment of the Condon branch, much of the traffic for which has been lumber from the CKS, plus wheat.

In general the net effect in the Northwest would be eliminate considerable duplicating mileage, particularly by withdrawal of the Milwaukee of substantial trackage, but it would leave some areas far removed from rail service, particularly the Hill City-Ketchum area in Idaho. Several towns would be without service--such as Condon, Hill City and Ketchum--but none with population in excess of 6,000.

California

Railroad	Abandonment Requested	Category 1	Category 2	Total
SP ¹	149	249	18	416
SF	9	2	0	11
WP	6	0	0	6
Other	0	6	1	7
Total	164	257	19	440

California is unusual in having far more mileage with abandonment requests pending than in Category 2; this reflects the policy of the Southern Pacific in recent years of weeding out all marginal lines, and its reluctance to list any lines in Category 2. The total is 6% of the mileage.

The major pending (category 1) item is the abandonment of the San Diego and Arizona Eastern (SP), severely damaged by washouts and not operative currently. This line served little function except to give the SP access to San Diego, served by the Santa Fe. The major SP lines on which application is pending are Susanville-Westwood (the major towns would still be served); the Stirling City branch, on out of Chico; and a major portion of the San Ramon Valley line, through an area now almost exclusively of suburban homes. Otherwise the lines are short branches, some serving fruit and vegetable packing plants whose traffic is handled exclusively by truck.

The Intermountain Area

The six states of the Intermountain area have relatively minor abandonment proposals; New Mexico has no mileage listed; and Utah and Wyoming each 9 miles, one-half of one percent in each state; the figure for Colorado is 3, for Arizona 4, and for Nevada 9.

¹Including San Diego and Arizona Eastern, Northwestern Pacific, Petaluma and Santa Rosa.

State	Railroad	Abandonment Requested	Category 1	Category 2	Total
Nevada	SP	16	0	0	16
	UP	0	80	40	120
	Total	25	80	40	136
Utah	UP	4	3	2	9
Colorado	BN	35	0	0	35
	UP	0	0	11	11
	SF	0	0	56	56
	Total	35	0	67	102
Wyoming	UP	9	0	0	9
Arizona	SP	12	0	0	12
	SF	0	0	64	64
	Total	12	0	64	76
New Mexico	--	0	0	0	0

Nevada, which lost substantial mileage in earlier years, has only a very limited network apart from the main lines crossing the state. The one pending abandonment is that of the SP's Fallon branch, which has handled little traffic in recent years. The UP, however, proposes abandonment of its Twin Falls-Wells cutoff from Idaho to the SP's main line, a route built relatively late; it serves no intermediate points. The UP also proposes its Pioche line, serving an old mining area, and the Boulder City branch, built when the dam was under construction. With these routes gone, the only remaining lines other than the transcontinental routes are the SP's long Mina branch that once extended to Tonopah. Goldfield mining area, a few short UP branches, the WP's Reno branch, and the Nevada Northern, essentially a plant facility of Nevada Consolidated Copper Co.

In Utah, four very short UP segments are the only proposals; in Wyoming, the southern portion of the Saratoga line.

Colorado is likewise affected very little; the only pending application is for the Burlington Northern's New Raymer branch in the thinly settled north central area; the Union Pacific is considering a short branch out of Greeley (remanent of the line to Griggsdale), and the Santa Fe, segments of its line on the north side of the Arkansas River; most if not all shipping points would still be served.

Arizona has the Lewis Springs-Fort Huachuca branch of the SP in the far southeast pending, and the Williams-Grand Canyon line of the SF under consideration; this was always primarily a passenger line and freight has been negligible.

Texas

Railroad	Abandonment Requested	Category 1	Category 2	Total
SP	343	64	0	407
TP-MoP	27	0	83	110
AS	39	0	0	39
Frisco-QAP	104	0	0	104
BN	20	0	0	20
RI	0	10	0	10
SLSW	0	52	0	52
SF	0	56	34	90
Misc	4	2	0	6
Total	537	184	118	839

Texas, with considerable overbuilding in parts, has 839 miles proposed, 6% of the total. Half of this is Southern Pacific mileage, witness to that road's pruning of all marginal lines--much of it in two segments: the line from Nacogoches to Dallas, and the long Edenburg-Victoria line in the Rio Grande valley; plus a major segment of the Austin-Houston line, the Llano branch in the south central portion, and the St. Louis and Southwestern's Waco-Corsicana branch. All the major points are served by other roads. The Missouri Pacific proposals center on several branches in the Rio Grande valley, plus the Weatherford-Mineral Wells branch, and the subsidiary Abilene Southern, from Abilene south to Winters. The Santa Fe's principal proposal is the long Pampa Clinton (Okla.) line, from the Texas panhandle into western Oklahoma south of the panhandle. The final important line is the Frisco-owned Quanah Acme and Pacific, the westward extension of the Frisco's Tulsa-Quanah line, in the lower portion of the Panhandle.

Oklahoma, Missouri and Arkansas

Of these three states, Missouri and Oklahoma have substantial proposals, constituting 13 and 11 percent respectively of existing mileage; the Arkansas figure is only 4%.

State	Railroad	Abandonment Requested	Category 1	Category 2	Total
Oklahoma	TP-Mo Pac	13	21	0	34
	SF	39	80	51	170
	MKT	136	10	0	146
	KCS	0	0	30	30
	Frisco	0	113	0	113
	RI	0	25	0	25
	Total	188	249	51	518
Missouri	BN	14	395	0	409
	Frisco	0	154	0	154
	KCS	0	5	0	5
	Milw.	0	93	0	93
	MKT	0	19	0	19
	Mo Pac	0	3	0	3
	Total	14	746	0	760

State	Railroad	Abandonment Requested	Category 1	Category 2	Total
Arkansas	Frisco	28	0	0	28
	RI	5	15	0	20
	W+O	16	0	0	16
	Mo Pac	0	30	0	30
	SLSW	0	27	0	27
	KCS	0	4	23	27
	Total	49	76	23	148

Oklahoma would lose two major lines--MKT's Oklahoma City line from Bartlesville (to be replaced by trackage rights), and the Frisco's line north from Hugo to Poteau, south of Fort Smith. The Missouri Pacific would eliminate two segments of the old Midland Valley south of Barnsdall (north of Tulsa); the Santa Fe, the Shawnee Cushing line (both terminals would still be served) and the Waynoka-Buffalo line, a grain line in the Panhandle--an area already depleted of rail service by abandonment of the MKT's long line through Woodward. Kansas City Southern would abandon its Arkansas Western, in the southeast, and the McCurtain line, a segment long ago taken over from the abandoned Fort Smith and Western. The Rock Island proposes only two short lines in the Enid area.

In Missouri, the Burlington Northern accounts for more than half of the proposals, which therefore center in the northern third of the state. These include the line from Creston, Iowa to Maryville and Bernard, that from West Quincy to Kirksville, and farther west, the line from St. Joseph northeast to Humeston, Iowa, with the branch from Albany Jct. to Grant City; and from Alexandria, in the northeast, northwest to Centerville, Iowa, and the Old Monroe-Mexico segment of a once-major passenger route. The net effect is to reduce drastically the total rail coverage in northern Missouri (although most main points are still served). A major abandonment is the East Lynne-Bolivar segment (101 miles) of the Frisco's direct line from Kansas City to Springfield via Bolivar (the main line via Fort Scott is unaffected). The line is severed now by a burned out bridge and part will be flooded by a new dam. The Milwaukee proposes the Polo-Ottumwa portion of its Chicago-Kansas City line, to be replaced by trackage rights. (The MILW and RI lines are roughly parallel.) The SLSW will eliminate its New Madrid and Caruthersville branches in the far southeast, once important connections to river transport.

The Arkansas mileage, except for the Arkansas Western noted under Oklahoma, concentrates in the east and consists mostly of short segments. The St. Louis Southwestern line from Blytheville to Paragould, and a line of the Frisco west out of Blytheville to Jonesboro account for a third of the total. The Rock Island's Warren and Ouachita Valley, in the southeast, will be abandoned entirely; and the Missouri Pacific proposes two branches, including a portion of the old secondary main line from Memphis to Helena.

Kentucky and Tennessee

State	Railroad	Abandonment Requested	Category 1	Category 2	Total
Tennessee	ICG	0	80	0	80
	L+N	0	42	15	57
	Total	0	122	15	137



State	Railroad	Abandonment Requested	Category 1	Category 2	Total
Kentucky	ICG	10	45	0	55
	L+N	58	11	36	105
	C+O	0	11	1	12
	Total	67	67	37	171

Kentucky and Tennessee are affected relatively little, abandonments consisting of various branch lines, one of the longest being the IC's Dyersburg-(Tenn)-Hickman (Ky) line, close to the Mississippi, west of the road's main line. The ICG also proposes the Hodgenville and C :ensboro branches. The L and N proposals include the Hart sville branch in north central Tennessee; the long Paris-Maysville line east of Cincinnati, and the Greensburg and Springfield branches in central Kentucky. The proposals constitute 4% of the mileage in Kentucky, 5% in Tennessee.

The Deep South

The states of the deep south suffered less overbuilding than some portions of the country, and manufacturing activity has grown rapidly. Mississippi shows the highest percentage, 9, followed by Louisiana with 8 and Florida with 7, each of the Carolinas, 6, and Alabama and Georgia only 3% and 2% respectively.

State	Railroad	Abandonment Requested	Category 1	Category 2	Total
Mississippi	ICG	39	279	0	318
Louisiana	SP	58	0	0	58
	TP-MoPac	5	11	128	144
	ICG	18	81	0	99
	Total	81	92	128	301
Alabama	S Ry	0	0	6	6
	Frisco	20	0	0	20
	C GA	39	0	0	39
	Frisco	0	42	0	42
	L+N	0	18	23	41
	Total	59	60	29	148
Georgia	SCL	0	12	54	66
	SR	0	0	12	12
	L+N	0	10	0	10
	Total	0	22	66	88
Florida	SCL	5	251	38	294
	Other	0	7	0	7
	Total	5	258	38	301
South Carolina	SCL	12	36	15	63
	SR	0	64	47	111
	Total	12	100	62	174

State	Railroad	Abandonment Requested	Category 1	Category 2	Total
North Carolina	NS	14	0	0	14
	L+N	0	13	0	13
	SR	0	11	100	111
	SCL	0	80	11	91
	Total	14	104	111	229

Mississippi abandonments are confined to the Illinois Central Gulf, which has virtually all rail mileage in the state. There are seven segments in excess of 25 miles, the most important being two large segments of the old Gulf Mobile and Northern main line to New Orleans, one north of Jackson, the other south; and a major segment, extending approximately from Holly Springs to Jackson, Tenn., of the IC's original main line via Water Valley to Memphis--a route used in recent years to reroute passenger trains when the line via Grenada was blocked. Others include the old GM and O line from Union toward Meridian; a portion of the IC line from Jackson to Natchez; the Columbia branch off the Gulfport line; a segment of the line extending northeast from Kosciusko to Aberdeen, and a portion of the line along the Mississippi from Greenville north to Rosedale. No major points but some towns with populations over 2,000 are left without rail service.

In Louisiana, there are two relatively long lines proposed for abandonment, the Southern Pacific's Eunice branch (Eunice is also served by other roads), and the Missouri Pacific's Collinston-Clayton Jct. (Natchez) line, plus the Illinois Central's line from Monroe to Winnfield, formerly the Tremont and Gulf. There are also short branches of the SP, the ICG, and MoP.

Alabama is affected relatively little; by far the major abandonment is the portion of the former Alabama, Tennessee and Northern (now Frisco) from York north to Reform, except for a short segment. The L and N proposes abandonment of the Calera-Columbiana portion of its line coming south through Sylacauga, and the Central of Georgia the southern portion of its Ozark branch.

Georgia is likewise little affected. The longest line is the former Atlantic Coast line cutoff from Jessup to Folkston, bypassing Waycross on the main line to Florida, once used by some of the Florida passenger trains. A portion of the ex-SAL line from Kimbrough to Albany, a portion of the L and N branch to Murphy in the north, and of the Southern's Atlanta-Columbus line complete the picture.

There are a large number of proposed abandonments in Florida, but most are short segments; virtually all requests are Seaboard Coast Line, which has most of the mileage in the state. The major requests include the former SAL line to Boca Grande; much of the Bell branch in northern Florida. (ex SAL), much of the former ACL secondary main line from Ocala to Croon, where it joins the main line via Dunnellon. The net effect on the state is obviously minor.

South Carolina proposals include two main elements; removal of major segments of the Southern Railway's Columbia-Savannah line and the northern portion of the Greenville-Columbia line. The principal SCL proposal would

eliminate a major segment of the northern portion of the former Charleston and Western Carolina, plus the Anderson-Belton line and a segment near Sumpter. The net result would be to break three secondary routes, but leave few communities without rail service.

The North Carolina proposals are likewise not at all drastic. The principal segments come from the light traffic (Class B branch) Rocky Mount Norfolk line of the SCL, which will be severed, plus a branch; and further segments off the already broken Rocky Mount-Fayetteville-Wilmington line of SCL. The Southern's largest proposal is a 55-mile link of a line extending southeast from Marion. Part of the Lake Toxaway branch and one off the Atlantic and Yadkin are also part of the SR proposals. Norfolk Southern has applied to abandon its Bayboro branch, leaving that town without rail service.

Virginia and West Virginia

Virginia would be affected very little, losing only 2% of its mileage; the impact on West Virginia, which would lose 7%, would be much greater.

State	Railroad	Abandonment Requested	Category 1	Category 2	Total
Virginia	C & O	0	2	0	2
	SCL	0	9	0	9
	SR	0	0	39	39
	N&W	42	0	0	42
	Total	42	11	39	92
West Virginia	C & O	92	0	56	148
	B & O	80	0	0	80
	Other	2	1	0	3
	Total	174	1	56	231

In Virginia, two lines account for most of the mileage: a major section of the former Virginian (now N and W) east of Jarrett, in the Tidewater area; and the Southern Railway's line from Bristol to Moccasin Gap, in the far west. The ex-Virginian line has only negligible traffic on its eastern portion. Southern also proposes elimination of its Calverton-Warrenton branch, the only line into Warrenton.

West Virginia has more abandonment proposed, which would leave substantial areas without service. The C and O (ex-Western Maryland) long branch to Webster Springs in the south central part of the state and the B and O's Petersburg branches in the east are the prime examples, plus the C and O's branch up the Greenbrier River 90 miles to Elkins (the latter still served from the north) are the principal examples. In addition a segment of the B and O line to Charleston would be removed; Charleston is primarily served by the C and O main line.

West Virginia is characterized by having most of the mileage in the abandonment-requested category, a product of the Chessie system policy of seeking immediate action on all marginal lines.

Indiana and Ohio

Indiana and Ohio were faced with the loss of substantial mileage through the restructuring of Penn Central, the initial figures being 714 and 940 miles, respectively. The actual loss was somewhat less, and 179 miles in Indiana, 141 miles in Ohio are currently being operated under Federal and state subsidy. The states are faced now with considerable proposed abandonment, 9% of the mileage in Indiana, 6% in Ohio.

State	Railroad	Abandonment Requested	Category 1	Category 2	Total
Indiana	C & O	2	38	0	40
	B & O	2	0	0	2
	L & N	0	42	9	51
	ICG	0	98	0	98
	Milw	0	38	0	38
	N & W	0	174	0	174
	CR	0	6	158	164
	Total	4	397	167	567
Ohio	C & O	12	18	75	105
	B & O	84	0	0	84
	N & W	0	93	0	93
	CR	0	10	157	167
	Other	0	31	2	33
		Total	96	152	234

In Indiana, Conrail proposes several substantial segments: Fort Wayne north to Kendallville; the line from Sheldon, Ill., to Lafayette; Richmond to Cambridge City and Connersville (the N and W operates over the latter portion and would abandon as well, and a long segment of the ex NYC line extending from Kankakee to South Bend.

The Illinois Central is proposing to abandon its service to Indianapolis, a line that has been marginal for some time, though it is a Class A branch, only the portion west of Switz City being retained. The L & N proposes elimination of the long Midland branch, ex Monon, in the southwest, and the Milwaukee plans to cut back its line as far as Bedford. Other major proposals are those of the Norfork and Western: the portion of the Toledo line (ex-Nickel Plate) between Kokomo and Frankfort; both the Rushville and Connersville branches in the southeast; and most of the ex-Wabash secondary main line across the northern part of the state between Gary and Montpelier. Built relatively late, this line never played a major role in Indiana transportation.

The N and W has downgraded the ex Nickel Plate routes from St. Louis to Cleveland and Toledo; the latter is now only a Class B branch in volume.

In Ohio, the Chessie system accounts for the majority of the proposals: the Willard-Sandusky and Mt. Vernon-Mansfield segments of the B and O's Newark-Sandusky line; two portions of the B and O Chillicothe-Dayton-Union City line;

a large portion of the Zanesville-Marietta line; and the Tontogany-N. Baltimore cutoff south of Toledo that was used primarily by passenger trains. The DT and I proposes the Napoleon-Waseon segment of its line south from Tecumseh, and the N and W a portion of the Delphos-Fisher line.

Conrail is considering the long line extending northeast from Columbus to Howard, connecting with the line to Hclmesville; now operated under subsidy; a portion of the ex-Erie line from Lima to Marion; the Lisbon branch in the far east; the link between Crooksville and New Lexington; and the Bradford-Greenville line west of Piqua.

The Mid-Atlantic States

The mid-Atlantic states, which lost substantial mileage in the formation of Conrail, have, except Maryland, relatively small amounts proposed for abandonment, but a few of these are significant lines. The proposals constitute the following percentages of 1975 mileages: 9 in Maryland and the District, 0 in Delaware, 5 in Pennsylvania, 5 in New York, 5 in New Jersey. Mileages operated under subsidy in 1977 are: Maryland, 127; Delaware, 43; Pennsylvania, 264; New Jersey, 36; New York, .

State/Railroad	Abandonment Requested	Category 1	Category 2	Total
Maryland-DC				
Chessie Sys.	41	40	15	96
Other	0	3	0	3
Total	41	43	15	99
Delaware	0	0	0	0
Pennsylvania				
CR	0	19	108	127
B & O	102	0	0	102
WAG	40	0	0	40
N & B	0	7	0	7
Montour	0	21	10	31
Other	25	13	2	40
Total	167	60	120	347
New Jersey-CR	0	0	38	38
New York				
Chessie Sys.	0	3	69	72
CR	6	85	90	181
Total	6	88	159	253

¹Wellsville, Addison and Galetton.

The principal proposals in Maryland are for the portion of the former Western Maryland main line between Cedarhurst and Highfield (PA) via Thurmont; the Baltimore and Ohio's Brunswick-Hagerstown line; and the portion of the Baltimore and Annapolis (B and O) between Glen Burnie and Annapolis as well as the B & O's branch that comes down into Georgetown in the District



of Columbia. These abandonments leave more towns of some size without rail service (Annapolis, Thurmont, Westminster, etc.) than those proposed in most states. The entire (2 mile) East Washington remanant of the old Chesapeake Beach Ry. would be abandoned.

Pennsylvania, which was primarily a Penn Central state, suffered substantial loss of line from the restructuring of that system. The new proposals are primarily B and O and ex B and O lines--the 97-mile B and O line from Parkers Landing to Mt. Jewett, in the northwest, and the entire Wellsville Addison and Galesville (long independent, but ex B and O), over half of the Montour, and the entire Northampton and Bath.

Major Conrail proposals include a long section of the ex Pennsylvania secondary main line to Erie that branches off the Buffalo line and a portion of the Lehigh Valley main line south of Lehighnton.

New Jersey has no proposals, except by Conrail.

New York State, with 494 miles operating under subsidy, by far, the largest of any state, has only one nonConrail line being considered--the portion of the Rochester branch of the B & O from the junction (Ashford) with the Buffalo line to Leroy. Rochester is of course well served by Conrail.

Major Conrail proposals include the line from N. Tonawanda to Lockport; the portion of the Utica Binghampton line from Chenango Forks to Norwich; the line south from Mortimer to Lima, south of Rochester; an ex-IL&W cutoff from Cuba Jct. to River Jct. and several others.

New England

The southern New England states lost substantial mileage upon the formation of Conrail; Rhode Island has no new proposals and Connecticut only 23 miles. But Massachusetts and New Hampshire have substantial amounts proposed as the Boston and Maine seeks to eliminate light traffic lines. Proposals in Vermont and New Hampshire are substantial. Proposals as percentages of 1975 mileages are: Massachusetts, 17; New Hampshire 32 (exceeded only by South Dakota); Vermont, 12; Maine 10; and Connecticut, 4.

State	Railroad	Abandonment Requested	Category 1	Category 2	Total
Connecticut	CVT	0	2	0	2
	CR	0	0	21	21
	Total	0	2	21	23
Rhode Island		0	0	0	0
Massachusetts	B & M	0	91	98	189
	CR	0	0	56	56
	Total	0	91	154	245
New Hampshire	B & M	0	171	63	234
Vermont	VtDOT	89	0	0	89
	Other	0	3	0	3
	Total	89	3	0	92
Maine	BAR	0	39	55	94
	MEC	49	24	0	73

In Connecticut, only the Conrail branch to Torrington, north from Waterbury, is being considered. The proposals in Massachusetts include several Conrail branches in the southeast, to Plymouth, and to Buzzards Bay and Sandwich, which would take with it the subsidized line to Falmouth.

The remaining proposals, as well as all those in New Hampshire, are B and M lines. Many are short segments, but there are a number of substantial lines: the Newburyport line north of Salem, including the Gloucester branch; the line from Northampton east through Amherst; the Lawrence-Manchester, Hollis, and Greenville lines extending into New Hampshire; the Waltham-Berlin line; and in New Hampshire, the branch west from Nashua to Hillsboro; the Manchester-Portsmouth line, a portion of the Conway line, and the long line north from Concord through Laconia and Plymouth to Lincoln.

In Vermont, the only significant proposal is the application of the state of Vermont to abandon the ex St. Johnsbury and Lamoille County line from St. Johnsbury to Swanton.

Maine, which was not affected by the Conrail formation, would experience most of its loss in the far north, as the Bangor and Aroostock proposes abandonment of much of its old main line north of Houlton, as far as Stockholm, including the branches (the line had already been severed); service to Presque Isle and Cariboo would be retained, as well as the present main line. Some of the territory is also served by the Canadian Pacific.

The Maine Central would eliminate its Eastport branch on the north coast, and its Farmington (north of Livermore Falls) and Bingham branches in the central part of the state.

These abandonments would leave a number of towns and cities without rail service: Newburyport and Gloucester, Mass., Laconia, New Hampshire, Eastport and Farmington, Maine. But most are not far from other rail lines.

The Overall Picture by State

Table 1 shows the mileage by state, the states ranked by the percentage of rail mileage in the state proposed for abandonment. The states significantly affected by the formation of Conrail are starred. South Dakota, losing nearly half its mileage, is by far the most seriously affected; New Hampshire is second, followed by Wisconsin, Iowa, Michigan, and Minnesota. As noted, of this group, Michigan is most seriously affected because the abandonments are concentrated in certain areas. At the other extreme, states not affected by Conrail but having negligible or no proposals are Utah, Wyoming, and New Mexico. Percentages are expressed on the basis of 1975 pre-Conrail total mileage.

State	Mileage proposed for abandonment	Proposed mileage as % of total rail mileage	State	Mileage proposed for abandonment	Proposed mileage as % of total rail mileage
North Dakota	1520	45	Montana	297	6
New Hampshire	234	31	North Carolina	229	6
Massachusetts	1218	21	South Carolina	174	6
Michigan	1433	19	Texas	839	6
Minnesota	1030**	17*	Ohio	482	6*
New Jersey	245	17*	Tennessee	137	5
North Carolina	1179	16	Pennsylvania	347	5*
South Carolina	760	13	New York	253	5*
Virginia	567	12	Arizona	76	4
Washington	94	12	Arkansas	148	4
Wyoming	518	11	Kansas	276	4
Alabama	167	11	Kentucky	171	4
California	277	11	Oregon	112	4
Illinois	1061	10	Alabama	148	3
Mississippi	318	9	Colorado	102	3
Maryland	99*	9*	Connecticut	21	3*
Nebraska	136	9	Georgia	88	2
North Carolina	567	9*	New Jersey	38	2*
South Carolina	301	8	Virginia	92	2
Tennessee	301	7	Utah	9	.5
West Virginia	231	7	Wyoming	9	.5
North Dakota	341	7	Delaware	0	0*
Nebraska	320	6	New Mexico	0	0
California	440	6	Rhode Island	0	0*

*Significantly affected by formation of Conrail.

**Car ferries omitted.

These figures were calculated independently of the ICC percentage figures and do not agree exactly.

The total figure, including all three categories is 15,913 miles, excluding car ferries; this constitutes 8 percent of the total national pre-Conrail mileage, or, if the states significantly affected by the formation of Conrail are excluded from both totals, 9 percent.

The significance of the loss varies greatly among the states. The loss in Iowa, for example, will do little harm; it is an element in the restructuring of the rail and elevator network that will lower overall transport costs materially; no area will be far removed from a rail line. By contrast, some areas will lose all or most rail service to the possible detriment of future economic development. The major examples are:

1. The upper portion of the lower peninsula of Michigan. If the Chessie proposals are approved and the Michigan Northern does not survive, the only rail line will be the Detroit and Mackinac on the east shore.

2. The upper peninsula of Michigan, which will lose a large portion of its rail service, except the main line of the Soo to Sault St. Marie. The copper country peninsula will lose all service.

3. The "thumb" area of Michigan east of Bay City, which will lose virtually all of its network.

4. The southwest quadrant of Wisconsin west of Madison and south of La Crosse, which will lose all rail lines.

5. Substantial areas of the state of South Dakota, including much of the mileage in the southeast and the Milwaukee's long line to Rapid City.

6. Northern Missouri, which will lose much of its rail service, although major towns will still be served.

It is not suggested that rail service in these areas necessarily should be retained; the areas are merely noted.

Loss of the only rail line may have adverse effects upon the shippers in a community and the development of the community, the effect depending primarily upon the present and prospective nature of economic activity in the area and the distance from another rail line. The list below notes a sample of communities that would be left without rail service if all the projected abandonments were implemented. This is intended as a sample, not a complete list. Population figures are shown in parentheses.

East:

Maryland: Annapolis (34,200)
Thurmont (2,359)
Westminster (2,300)

Maine: Eastport (1,989)
Farmington (3,096)

Massachusetts: Gloucester (27,400)
Newburyport (15,809)

New Hampshire: Hillsboro (2,000)
Laconia (15,100)
Plymouth (3,200)

West Virginia: Petersburg (2,177)
Webster Springs (1,038)

South:

North Carolina: Bayboro (665)
Virginia: Warrenton (4,027)
Kentucky: Hickman (3,948)
Greensburg (1,990)

Midwest:

Michigan: Ontonagan (2,432)
Calumet (1,007)
Houghton (6,000)
Bad Axe (2,999)
Crowell (1,954)
Paw Paw (3,160)
Elk Rapids (1,249)

Wisconsin: Mineral Point (2,305)
Viroqua (3,739)
Lancaster (3,756)
Platteville (9,599)

Illinois: Virginia (1,814)
Rushville (3,300)
Pittsfield (4,244)
Mt. Sterling (2,182)

Iowa: Decorah (7,703)
Clarinda (5,420)

Plains States:

Nebraska: Loup City (1,456)
South Dakota: Sisseton (3,094)
Wessington Spr. (1,500)
Winner (3,789)
Britton (1,465)
Platte (1,351)
Oklahoma: Buffalo (2,959)

Pacific Coast:

Washington: Port Townsend (5,241)
Port Angeles (16,600)
Idaho: Ketchum (2,607)
Oregon: Condon (973)
Nevada: Fallon (2,759)
Pioche (600)
Boulder City (5,223)

Overall Proposals by Railroad

Table 2 indicates the total mileages proposed by major roads that propose, in total, abandoning fifty miles or more, and the proposals as a percentage of total mileage. Five systems propose more than 1,000 miles, the Milwaukee, with 3,708 by far the largest amount, followed by the Chicago and Northwestern, Burlington Northern, Chessie System (C and O and B and O combined), and Illinois Central Gulf. No other road proposes as much as 700 miles. Percentage wise the highest figure, 42%, is that of the Lake Superior and Ishpeming, but of the larger roads, the Milwaukee and the Boston and Maine, with 37 and 32, are the highest. The Santa Fe, with 4% is lowest on the list--but several roads have no proposals or less than 50 miles: the Rio Grande and the Western Pacific, for example.

While there is some obvious inverse correlation with profitability, there are exceptions: the Chessie system has a relatively high figure, 11% while the Rock Island, on the other hand, a very low figure.

There are some other influences affecting these figures. Some roads had virtually no branch lines initially; others, such as the Southern Pacific, have been much more severe in weeding out unprofitable lines in the past. But in addition it is obvious that management policies differ; the Chessie system has been particularly severe in its proposals, which include lines with traffic density much greater than lines other roads have not proposed.

The policies also differ with regard to the categories in which the lines are placed. The Southern Pacific and Chessie proposals are almost all pending whereas the Milwaukee, with the largest total, has virtually none pending. The Chicago Northwestern and the Illinois Central concentrate in category 1 (3 years) category, whereas the Milwaukee has very substantial mileage in category 2, in which a number of roads listed nothing. The Santa Fe, the Union Pacific, the Missouri Pacific, and the Southern and New England roads were more willing to use category 2. Several of the roads avoid it for fear of adverse consequences on traffic.

Table 2
 Combined Mileage of Pending Applications and
 Category 1 and 2 Lines, by Railroad

Railroad	Mileage considered for abandonment	Percentage of total 1975 mileage	Railroad	Mileage considered for abandonment	Percentage of total 1975 mileage
Superior & Ishpeming	51	42	Maine Central	74	8
Waukegan	3708	37	Burlington Northern	1607	7
Worcester and Maine	424	32	Union Pacific	568	6
Chicago and Northwestern	2130	21	Seaboard Coast Line	526	6
Chicago and Alton	94	17	Southern Pacific	685	6
Chicago and North Western	126	13	Southern Railway	279	5
Illinois Central Gulf	1194	13	Norfolk and Western	436	4
Missouri System	1273	11	Missouri Pacific	408	4
Louis & Southwestern	156	11	Louisville and Nashville	279	4
Rock Island	460	10	Rock Island	250	4
	476	10	Kansas City Southern	71	4
	192	9	Santa Fe	438	4

ferries and lines proposing less than 50 miles are excluded.

The Types of Lines Proposed

Detailed analysis was made of the nature of the lines proposed for abandonment. The results are as follows, in percentages:

1. Dead End Branch, no other rail service, 46
2. Dead End Branch in part, some points served by other rail line, 7
3. Terminal points served by other line, 32
4. Segment of through line, 15.

A brief description of each category is desirable.

1. Dead end branch lines with no other rail service. The largest number of the cases fall into this category. These are the ones most strongly contested, as a rule.

2. Dead end branches, but some intermediate points served by other lines. These typically are relatively long abandonments, the line crossing one or more other rail lines at intermediate points.

3. Terminal points served by other lines. Some of these are links joining other lines of the same railroad; intermediate points are left without service. A few of these were cutoffs used primarily by passenger trains in the past. Others represent withdrawal by one railroad from a city served by other railroads--thus the elimination of what is typically competitive waste, although some intermediate points are left without service. Major examples include:

Illinois Central from Sioux Falls, South Dakota; Madison, Wisconsin; Owensboro, Kentucky; and Bloomington-Indianapolis, Indiana.

Southern Pacific from San Diego and the Rio Grande Valley in Texas.

MKT - Oklahoma City (to be replaced by trackage rights).

Norfolk and Western - Ottumwa and Keokuk, Iowa.

Burlington Northern - Lewiston, Montana and Wallace, Idaho.

Milwaukee - Rapid City, S. Dakota; Raymond and Hoquiam, Washington.

4. Segment of through line. There are many examples of the severing of secondary through routes by the elimination of segments, although some were not actually operated as through routes and some had already been broken: the Missouri Pacific direct line from Kansas City to Springfield, Missouri, for example. The ex Duluth South Shore and Atlantic main line and the Milwaukee line from La Crosse, Wisc. to Wessington Springs, South Dakota are examples.

Replacement by trackage rights. It is not possible, with available data to ascertain all cases in which the railroad plans to continue operation by trackage rights on adjacent lines, but some are either known or are obvious. Major examples include:

1. Lengthy segments of the Milwaukee main line from Chicago to Omaha.
2. The MKT line to Oklahoma City.
3. The line of the Burlington Northern northward from St. Louis as far as Whitehall.
4. The Duluth, Winnipeg and Pacific line into Duluth.

Other Observations on the Proposals

Review of the individual proposals suggests several other features:

1. The tendency to cut back still farther lines that had already been cut back or severed, analogous to the successive pruning back of a tree that is slowly dying.

2. The substantial number of cases in which a physical disaster, such as a flood or collapse of a bridge, has already resulted in severing of a through route or a portion of a branch.

3. The tendency to dismember roads that had been merged into larger systems--bearing out the fears of communities that had been served by these roads. Major examples include portions of the Chicago Great Western main line (GNW); the Duluth South Shore and Atlantic (Soo), most of which is being eliminated; the Gulf Mobile and Ohio, particularly the ex-Alton portion (ICG); the Alabama, Tennessee and Northern (Frisco); the Spokane, Coeur d'Alene and Palouse, (BN, ex-Great Northern); and the Pere Marquette (Chessie).

4. Elimination of several lines that were primarily designed for passenger traffic: lines of the Milwaukee and the Union Pacific to Yellowstone Park, the Santa Fe's Williams-Grand Canyon line, and segments of the Seaboard Coast Line in Florida and Georgia.

General Conclusions

This review, of necessity, has not examined every proposed abandonment in detail. Despite this limitation, several general observations can be made.

1. The total amount proposed is relatively small--about 9% of the rail mileage in the states outside of the area significantly affected by the creation of Conrail. Some roads were obviously reluctant to list lines in Category 2--but all in all the proposals suggest that the railroads are not seriously considering wholesale abandonment of mileage. By contrast the May 1976 DOT study concluded that some 18% of the mileage in these states was "potentially uneconomic light density" mileage.¹

2. Much of the proposed mileage would provide substantial net benefit to the railroad industry at relatively little cost to the users and the communities--lines involving useless duplication or having negligible traffic.

3. A substantial amount of the mileage, however, does have traffic substantially greater than negligible--originating/terminating 25 or more cars a year per mile, and in some instances, on nonduplicating mileage, losses to shippers and communities would occur from abandonment. In the three states for which detailed examination was made of the state rail planning authority analysis of individual lines, there were several lines showing a high ratio of benefits to costs, and thus justification for subsidy--if no other alternatives show a higher benefit cost ratio.

4. The mileage proposed for abandonment varies substantially by state, as a percentage of total rail mileage; some of the states have negligible amounts.

5. Three obvious defects appear in the federal subsidy system for light traffic lines:

a. All states are entitled to a minimum figure equal to 1% of the total amounts appropriated for the purpose--yet some states have no possible need for this amount, and other states of necessity could use it much more effectively. This can lead to wasteful subsidization in states with little light density mileage.

b. Eligibility for subsidy requires prior approval of abandonment. This had led to the listing of some lines for the purpose--quite legitimate in some instances--of gaining the subsidy, and it places the parties involved in the awkward position of demonstrating on the one hand that abandonment is justified in light of losses and on the other that retention under subsidy is warranted.

c. The Federal program is, by present legislation, temporary in nature. For some lines, only temporary assistance is warranted, pending development of alternative methods of handling the traffic. But given the uncertainty of continuation of the program, any effort to build up traffic on the subsidized lines will be very difficult--yet the evidence suggests that there is merit in continued subsidization of certain lines, given the benefit-cost relationship and the lack of more effective alternatives. Accordingly, states with such lines need to consider a program of continued subsidy in the event that the Federal program does come to an end.

¹US Department of Transportation, Railroad Abandonments and Alternatives (Washington: May 1976)

PART III. THE HALL COMMISSION REPORT

The problems of light traffic density lines in Canada are similar to those in the United States although concentrated more heavily in one area--the Prairie provinces; Manitoba, Saskatchewan, and Alberta. Problems of competition of other forms of transport with the railways and the low traffic density of certain lines led to the appointment in the late 'fifties of the MacPherson Commission (Royal Commission on Transportation). In its 1961 report, the Commission recommended, among other changes, lessening of regulation and freedom of the railways to abandon branch lines on which losses were being incurred, with provision of subsidy to cover losses on those lines the continuation of which over a 15-year transition period was considered warranted.¹ The government was slow to act; not until 1965 did it do so, prohibiting abandonments (except 1839 miles) in the prairies until 1975 (later extended to 1977), and providing for subsidies on money-losing lines in the interim, along the lines of the MacPherson proposal.

The Background

In 1974, the government designated 12,413 miles of the Prairie mileage (of about 19,000 total) as the basic network, not to be considered for abandonment before the year 2000. Of the remainder, 525 miles no longer in use were designated as eligible for abandonment. The remaining 6,284 miles were protected for one year, later extended to 1977, to allow evaluation. The government appointed two commissions, one on the cost of transport of grain, the second on grain handling and transportation, which rendered its two volume report in March of 1977.² The commission is generally known as the Hall Commission for its chairman, Justice E. M. Hall. The report contains a general discussion of the background, problems, and solutions, and detailed analysis and recommendations on the lines in each area. The Commission sought to evaluate the existing network of lines in light of present and expected future transport requirements of the prairie provinces, for optimization of both grain handling and transport considerations, given present day road transport.

The rail network of the prairie provinces was built between the late 1880s and the early 1930s, much of it immediately after the turn of the century. In recent decades it has been clear that the mileage was excessive in light of present needs, partly because the lines were built under conditions such that a wagon haul to the elevator could not economically exceed about seven miles, and partly as a result of competitive overbuilding by the Canadian Pacific and the predecessors of the Canadian National. The result

¹Report of the Royal Commission on Transportation, (Ottawa: Queens Printer, 1961).

²Grain and Rail in Western Canada, (Ottawa: Queens Printer, 1977).

was a great mileage of light traffic density lines, even before road transport, later aggravated by the shift of most of the nongrain traffic to road. The problem was compounded by the freezing of grain rates at 1897 levels as a result of the Crows Nest Pass Agreement, under which the Canadian Pacific agreed to lower and freeze rates on Prairie traffic in exchange for subsidies to build a line over Crows Nest Pass into southern British Columbia. The rate freeze was later extended to other lines, but eventually confined to grain and flour traffic. The rate, roughly one-half cent per ton mile, remains unchanged at levels established 80 years ago, and is unremunerative, making the railroads unwilling to invest in maintenance and improvement of the grain lines. The net result has been extensive deterioration of the lighter traffic lines, failure to replace bridges, and impaired ability to handle the traffic.

Concomitant with the deterioration of this network and the unprofitability of the lines has been the transition that has occurred in both road transport and elevator operation. Road transport now makes it possible to haul a substantially longer distance from the farm; the Commission uses 25 miles as a maximum; and to allow trucking of grain for longer distances from off-line elevators, although at costs higher than the existing freight rates. The second change has been the shift toward larger elevators as a result of technological and other developments.

The existing subsidy system did little good; the railroads did not use the branch line subsidy money to maintain the branch lines for which they received them, but for general purposes; and they obtained subsidy on many lines they had no thought of abandoning.

The Recommendations

Recommendations of the Commission are based on several premises.

1. Many prairie towns have declined for reasons unrelated to rail lines; the argument of the need to retain rail lines to preserve the towns has no validity. Many have deteriorated even though they still have rail service as a result of the development of motor vehicles and better roads, refrigeration, and the advantages of larger schools, hospitals, etc. In general viable communities are possible in the prairies only 40 to 50 miles apart.
2. Grain elevators are viable only with a volume of at least 700,000 to 1 million bushels of grain a year; the small country elevator is fast disappearing, rail line or not.
3. Elevators can be retained only approximately 25 miles apart if they are to have adequate volume.
4. In limited instances, off-line elevators can be maintained, with hauling by commercial truck to on-line elevators.
5. Unit trains in the strict sense of the term are not feasible for handling of grain.

The criteria for decisions on each line were as follows: (1) traffic volume--primarily grain originating on the line, and future plans of the elevators on the line; (2) distance of haul to elevators on other lines; (3) physical quality of the line and thus costs to rehabilitate; (4) the importance of the communities on the line. The report states that "it was not desirable to reduce this total assessment to a purely mechanical selection process." Common sense and judgment remained of paramount importance in arriving at a final decision and recommendation for each line.

On the basis of the three criteria, the lines were placed in the following categories:

1. Inclusion in the basic network, protected to the year 2000:
 - a. Lines essential for direct through routes
 - b. Lines with relatively heavy volume, expected to increase
 - c. Lines whose loss would create severe hardships, primarily long truck hauls.
2. To be retained and placed under the jurisdiction of the Prairie Rail Authority, ultimately to be placed in the permanent network or abandoned:
 - a. Adequate present traffic to warrant continuation at least five years
 - b. Lines on which traffic will rise as adjacent lines are abandoned
 - c. Lines where there is doubt as to how long the elevators will continue.
3. Lines to be abandoned 1977 to 1981:
 - a. Lines with very light traffic and no hope for increase
 - b. Lines with somewhat heavier traffic but close to other lines
 - c. Lines requiring major capital improvements.

The Prairie Rail Authority as proposed would be a federally appointed and funded agency, located in the Prairies, that would manage the second group of lines. The authority would contract with the CNR and CPR to operate the trains on these lines on a cost basis, with appropriate incentives, and to rehabilitate and maintain the roadbeds on the basis found desirable. The Authority would monitor the operations.

In addition, the Authority would develop criteria for determining the ultimate fate of each line--transfer to the permanent network or abandonment. The intent is that the Authority would liquidate itself by 1990, all of the lines either being abandoned or included in the basic network. In the interim, deficits and funds for rehabilitation would be provided by the Federal government. A primary objective is to bring about physical rehabilitation of these lines. The authority would also have the power to control the location of elevators.

Proposed reorganization of the prairie lines also involves shifting of a number of segments between the CNR and the CPR and construction of several lines to allow abandonment of much longer ones.

The report is concerned with other matters as well: the problems of ports and terminals and the bottlenecks encountered; energy implications of rail abandonments; and the location of flour milling, livestock processing, rapeseed crushing, and malting. Retention of the Crows Nest Pass rates, with offsetting government subsidy to the railroads, was recommended, as well as a rail line to the Arctic.

Volume 2 of the Report provides seven reports conducted under the auspices of the Commission. Two are concerned with road and truck costs. One analyzes the impacts of abandonment on energy use (the implications are nominal). Others consider the impact of abandonments on financial viability of local governments, transportation-caused distortions in location of Canadian industry (there is strong discrimination against flour mills located in the west for the market in eastern Canada); and four alternatives for light traffic lines--the present system, trucking, shortline railroad operation; and so-called mini-trains, moving light cars and thus involving transfer of grain at junctions. Trucking is found to be the cheapest with very light volume, short-line rail operation for all other levels.

A few data are significant. The average cost to rehabilitate the lines is estimated to be \$48,000 per mile on the CNR, \$28,000 on the CPR (the lower figure resulting primarily because the CPR lines were laid with heavier rail). Line related costs are estimated to \$7,380 per year to keep the line in adequate condition. Costs of trucking grain by commercial carrier range around 4 cents per ton mile.

Analysis of the Recommendations

The sections dealing with each line do not provide adequate data for systematic evaluation of the recommendations or the criteria employed. But they do throw substantial light on the decision making of the commission. Review was made for this paper of 155 lines or line segments; there was insufficient data on the remainder to allow inclusion of them. Of these lines, 24 were recommended for inclusion in the basic network, 58 are to be retained under the jurisdiction of the Prairie Rail Authority, and 73 are to be abandoned by 1981.

The only measure of traffic given for the lines is average annual bushels of grain received at elevators on the line during the preceding ten years (with some exceptions); there was occasional reference to other traffic and to movement of some of the grain by truck. But, since the great majority handled grain almost exclusively (with a little fertilizer and other items in a few cases), this was regarded as a reasonable measure of traffic density. If it is assumed that no other traffic moved and that all the grain moved by rail, the average bushels originated per mile is also a measure of average tonnage on the line--although it does not indicate the amount of ton mileage by segment of the line. Different grains differ in weight per bushel; for wheat the figure is 60 pounds.

The average number of bushels originating on the lines recommended for inclusion in the basic network was 45,000 per mile; for those to be transferred to the Prairie Rail Authority, 58,000; for those to be abandoned,

23,000, omitting some 21 line segments which originated or terminated no traffic, or were no longer needed as a result of reorganization of line operations.

The distinction the Commission made between lines to be added to the permanent network and those to be transferred to the Prairie Rail Authority is by no means entirely clear; the typical grain density is greater on the latter than on the former. On nine of the lines, the objective was to maintain secondary through lines or bypass lines. In seven instances, the non-grain traffic was the dominant reason; in one, a very large area served and lacking other rail service. In two instances, the volume of traffic was dominant--but many of the lines to be transferred to the PRA have greater volume than those to become an element in the permanent network. Misclassification in this regard is not too serious, however, since the better routes in the PRA network can be transferred to the permanent network.

The distinction between transfer to PRA and abandonment is of course all-important. It is obvious that volume of traffic was the dominant, but not sole consideration. As noted, the potential average grain volume of the lines to be retained is nearly three times that of the lines to be abandoned, even omitting the no-traffic lines from the sample. The difference is made even clearer by the following array:

Bushels per mile (000s)	Transferred to Prairie Rail Authority	To be abandoned
over 100	5	0
70-99	7	0
60-69	13	0
50-59	10	1
40-49	11	2
30-39	10	8
20-29	3	27
10-19	0	9
0-10	0	21

Thus of the PRA lines, 46 of 59 were above 40,000 bushels; of the to be abandoned lines, only three were. Of the latter, 62 of the lines were below 30,000 bushels, while only three of the PRA lines were. The basic dividing line appears to be 35,000 bushels; there were only six PRA lines below this figure, and only six abandonment lines above it. Examination of these throws some further light on the decisions.

Of the six low traffic lines to be retained, in two instances it was noted that abandonment would lead to a long road haul and the need to provide rail service in very isolated areas; in two instances, other potential traffic (gypsum) was noted; with the other two there appeared no obvious reason.

Of the six relatively high traffic lines not to be retained, the explanations were given as follows:

1. Dalmeny to Carlton, 35.8 miles, 58,000 bu. originating on the line. The line is in poor physical condition; much grain is already moving to Saskatoon by truck; the elevators are old; only short truck hauls will be required. Thus abandonment will leave Waldheim, pop. 609, without rail service.
2. Tyson-Neidpath, 10.5 mi.; 40,000 bu.--abandonment justified on the basis of short road haul to other elevators.
3. Baird-Stewart Valley, 20.4 mi., 40,000 bu.--no explanation, but suggestion of off-line elevator.
4. Biggar-Dodsland, 53.3 mi., 38,000 bu.--elevators on line are small and doubt that can continue.
5. M and B Jct. to Wawanesa, 22.7 mi., 38,000 bu.--line laid with 56 pound rail; short truck hauls required to other elevators.
6. Woodbay to Snowflake, 16.6 mi., 36,000 bu.--no explanation.

The 35,000 bushels dividing line, assuming no other traffic and using the per bu. weight figure for wheat, would amount to 21 cars (50 ton) originating or terminating per mile, substantially below the Interstate Commerce Commission's 34 car rule and much less than the DOT's 70 car rule used for delineating lines subject to possible abandonment in the U.S. The 20,000 figure typical of many of these lines is equal to 12 cars per mile. It must be remembered, however, that (1) some of these lines carry some nongrain traffic, and (2) grain movements require relatively infrequent train service. In any event, the traffic is very low by any standard.

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