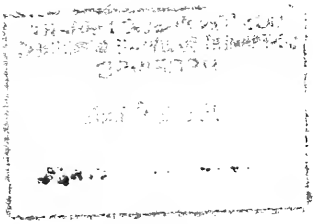
Boston Water and Sewer Commission A Tradition of Service



Message from Chairman Tye

The Boston Water and Sewer Commission was established nine years ago by the State Legislature to assume ownership and responsibility for maintenance and operation of water and sewer services to Boston residents, visitors, businesses and institutions.

At present, the Commission is providing the City of Boston with some of the purest water in the nation and is meeting the challenge of properly utilizing a wastewater disposal system that is over 100 years old.

This annual report documents the Commission's impressive record of achievement. We have repaired and upgraded substantial portions of the water and sewer infrastructure, installed a modern metering system, improved stability of financial operations, and begun the long battle to end pollution of Boston Harbor.

The Commission has also made significant improvements in its pricing system. With increased metering, more parties are held responsible for their water use. The institution of an inclining block rate has encouraged water conservation among both domestic and industrial users.

An important result of these efforts has been a growing respect for the Commission in both environmental and financial communities. Recently, the Massachusetts Audubon Society honored the Commission for outstanding achievement in environmental conservation. Additionally, the Commission's bond rating, a substantial indication of financial stability, has been upgraded by the nation's two leading rating agencies.

My fellow Commissioners join me in thanking the highly competent and professional staff who have worked so hard to help make the Commission one of the best providers of water and sewer services in the country.

As we continue with our mission, I know that Bostonians, and people from all over New England, also share my wish that some day soon we shall witness the rebirth of Boston Harbor as a renewed source of commerce and recreation. While that vision may still be far away, it will guide the Commission today as we plan for tomorrow's clean Harbor.

Sincerely,

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To solve the problem of digging a sewer in the congested Causeway Street area in 1884, engineers devised a unique system. They developed tressels to carry buckets of gravel and dirt out of the hole so workers could place pipes in the ground. Then, traveling overhead, the buckets would return with the gravel and dirt for fill—a most efficient operation to keep the horse and carriage traffic moving.

Looking Back

Because of an abundant water supply, early travelers to America chose Boston as a primary settlement site. Landing at Charlestown in June of 1630, English travelers confirmed reports of an excellent spring at what is now Dock Square. The Indian name for the region held promise—Shawmut, the place of living springs.

The town's first reservoir was constructed to hold a central supply from these local springs and wells. But, as Boston began its inexorable

growth, springs and wells ran dry, watersheds were supplanted, and the need for new supplies became acute.

A dramatic and innovative solution was first offered by private interests who founded the Boston Aqueduct Corporation to transport water from Jamaica Pond to the City of Boston—a distance of over 15 miles. For over fifty years the Corporation supplied some 1600 households and numerous other buildings and businesses, storing 3.2 million gallons of water for customer use. Soon, that was not enough.

As continued expansion transformed Boston from a town into a city, officials adopted an even more progressive plan to bring water 18 miles from Long Pond, now called Lake Cochituate, to a reservoir on Beacon Hill. Fed by this fresh supply, Boston's waterworks continued to spread across the City, meeting the needs of an ever-increasing population.

The first sewers, constructed before 1700, were designed primarily to deal with storm runoff. Following the common practice of the time, residents were disposing of waste by burying it, or dumping it in nearby rivers and streams. Until Boston was granted its city charter, sewer service continued to be supplied by independent private interests.

The first half of the nineteenth century witnessed two significant milestones in Boston's water and sewer services—the City's decision to allow the disposal of waste in the drainage system, and the advent of the flush toilet. As a result, by the 1870s, Boston was faced with a major health hazard.

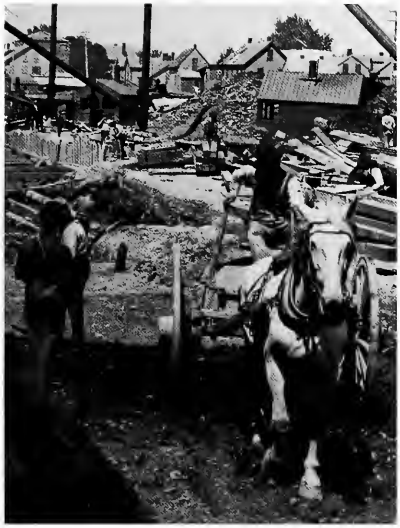
When the Board of Health requested a solution, a three-member panel of civil engineers designed a unique plan. They proposed construction of two main drainage systems north and south of the Charles River to tie together the City's 32 independent sewer districts, and allow the sewage to be pumped further out into the Harbor. Although this plan was simplistic by today's standards, it established a precedent in the City of Boston for planning

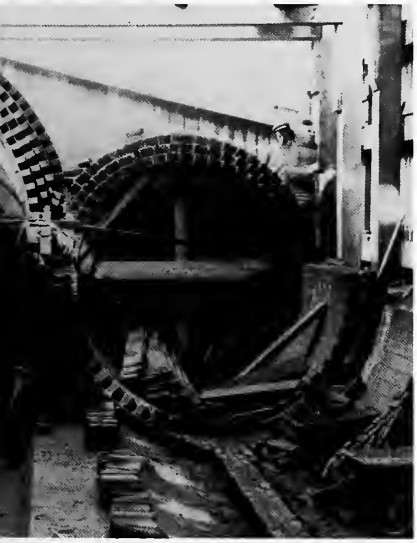
water and sewer services to meet future needs and demands.

In 1884, the southern system was completed, followed by the northern system in 1890. By that time, state lawmakers had consolidated the provision of eastern Massachusetts sewer services.

Demand on the City's sewer system continued to increase as the annexation of Charlestown, Dorchester and Roxbury, and a continuous flow of immigrants, boosted Boston's population to over 500,000 at the turn of the century. In addition, raw sewage from dozens of area cities and towns was being dumped into Boston Harbor off Moon, Nut, and Deer Islands.

In an attempt to strengthen services, eastern Massachusetts water and sewer operations were merged by the State Legislature in 1919 into a single organization—the Metropolitan District Commission. When the addition of new water sources such as the Sudbury River and the Mystic Lake still failed to meet the need of the metropolitan area, MDC engineers envisioned an expanding supply beginning with the contruction of the Wachusett Reservoir in central Massachusetts and culminating further west with the massive Quabbin Reservoir.



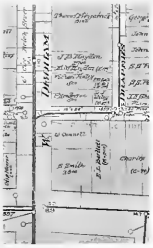


From L to R: Calf Pasture Pumping Station, Dorchester; Stony Brook Channels near Fenway; Construction Site at Turn of the Century

Completed in 1939, the Quabbin's capacity of 412 billion gallons made it the largest man-made water supply in the world. Through an intricate series of smaller reservoirs, pumping stations and deep rock tunnels, Boston residents and visitors could enjoy an ample supply of clean water transported 65 miles to the city. The Quabbin Reservoir was and remains today an impressive engineering feat; its existence, a tribute to the remarkable vision and foresight of its planners.

However, by the 1970s, Boston had grown so rapidly that City officials were faced with the need for a more consolidated approach to the management of water and sewer services. The MDC sewage treatment facilities on Nut and Deer Islands were at capacity and water and sewer rates were insufficient to maintain the system properly.

The Calf Pasture Pumping Station in Dorchester went on line on January 1, 1884. Powered by a giant steam engine, its massive fly wheels were over 30 feet tall. Today the station is powered by electricity and is still functioning as a pumping station for Boston's sewer system. Its graceful stone facade and elegant architectural style is admired by historians throughout New England.



Dating back to 1890, this Commission map is one of a series of original calligraphied maps completed during the 1800s to represent Boston's sewer system. On occasion, these historical documents have assisted current Commission engineers in solving serious drainage problems in the more than 100 year old system. The comparison of older maps with their modern counterparts can often show the various changes in the topography of Boston.

The Boston Water and Sewer Commission

It was evident during the mid 1970s that a total restructuring of the water and sewer system would be necessary to ensure badly needed repairs to the more than 100 year old system and to provide an increase in funding levels for maintenance and new construction.

Responding to this need for decisive action, officials designed an innovative strategy. They proposed the creation of an independent agency with the authority to set rates at adequate levels, and the fiscal autonomy to develop a range of financing techniques.

Passing a Home Rule Petition, the City Council and the Mayor sent legislation to the State House which resulted in the creation of the Boston Water and Sewer Commission.

Under the bill's provisions, a three-member commission would oversee operation of a newly formed organization to take possession of the City's water and sewer systems, retain all current personnel, hire additional staff as needed, and run the system in a manner similar to a private corporation.

The Boston Water and Sewer Commission would be required to set water and sewer rates at sufficient levels to meet all costs for operation and maintenance. It would also have the fiscal power to raise money for capital improvements through the sale of revenue bonds. Additionally, experienced management personnel would provide the professional support necessary for the effective operation of a multi-million dollar agency.

Citing the need "to avoid the . . . deterioration of the financial . . . and physical condition" of Boston's water and sewer system, the need to "protect natural resources" and "insure the availability of . . . services at fair but sufficient rates," the State Legislature granted authority to the Boston Water and Sewer Commission on July 18, 1977.

In January of 1978, the Commission purchased the City's water and sewer system along with all of its equipment for $24 million, and assumed responsibility for maintenance, repair and upgrading of the aging infrastructure.

In its eight years of operation, the Commission's tangible accomplishments and professional standards have made it a national model for the provision of high quality municipal water and sewer services. Its emphasis on planning, controlling costs, and providing quality service to customers will ensure this continued level of excellence in the future.

MASSACHUSETTS WATER RESOURCES AUTHORITY

Until 1985, the Metropolitan District Commission (MDC) provided water and sewer services to the cities and towns of Eastern Massachusetts. Mirroring the concerns which created the Boston Water and Sewer Commission, state lawmakers established the Massachusetts Water Resources Authority (MWRA) to succeed the MDC.

The MWRA is an independent agency serving 60 communities in the metropolitan Boston area. Its dual mission is to repair and upgrade the former MDC water and sewer systems and to oversee the clean-up of Boston Harbor.

The MWRA provides water and sewer services to each city or town within its system, but each community is responsible for the maintenance of those services within town lines. The Authority also operates and manages the sewage disposal facilities on Nut Island and Deer Island in Boston Harbor.

The Boston Water and Sewer Commission is the Authority's largest customer, providing a third of total sewage revenue and almost half of total water revenue. The two agencies work together closely on such issues as water conservation, industrial waste control, and harbor clean-up .

A major reason for creation of the MWRA was the need for massive financial resources to modernize water and sewer services and to manage the clean-up of Boston Harbor. Because the MDC was within the state budget system, it was restricted by Proposition 2½ and legislative oversight. As an independent authority, MWRA has the flexibility to set rates and issue revenue bonds to raise the dollars its mission requires.

As such, the Authority has instituted substantial rate increases to cover all costs of operation. Rates will continue to increase as the Harbor clean-up program gets fully underway.

The Authority has made an encouraging start on Harbor clean-up with the siting of a $1.4 billion secondary sewage treatment facility on Deer Island. While the Commission recognizes the need for this investment, it also appreciates the impact of subsequent rate increases and will monitor Authority rate methodology while working with MWRA to achieve its worthy goals.

Dating back to the 1700s, these wooden pipes were removed during construction of the Faneuil Hall Marketplace in the 1970s. Made of a hard wood, usually oak, wooden pipes were the basis for the water and some of the sewer system in Boston. The pipes were gravity fed from water sources at relatively low elevations and as a result were not able to develop much pressure in the system. Although not in use today, miles of wooden pipes are still in the ground and remain intact and free from wood rot as long as they are kept wet.

The brick work in the sewers of Boston is some of the most interesting in the City. Fired hard and set using a mortar with a low lime content, this brick resists deterioration from sewer gasses. Boston's original sewers in the early to mid 1700s were wood, followed by stone and slate—then brick by the turn of the century. Masons still use brick to repair and adjust manhole and catch basin covers to street grades.

A Record of Achievement

BUILDING A MODERN SEWER SYSTEM

The Commission's sewer system, which collects the City's waste water and storm drainage, connects ninety thousand service pipes extending over a length of 1300 miles. Numerous related facilities—pumping stations, gate houses, regulators, and tidegates—complete the system.

The Boston Main Drainage System has served the City for more than 100 years and continues today as the system's central element. However, since its installation, the population it serves has grown to over 571,000. Added to this increased burden are over ½ million commuters, shoppers and tourists visiting the City each day.

REPLACING THE BOSTON MAIN INTERCEPTOR

One of the major challenges facing the Commission was the need to expand the sewer system's capacity to keep up with growing demand and to counter serious deterioration affecting parts of the original system.

In 1981, an ambitious plan was initiated to build two new large interceptors to replace sections of the old system. Construction of the new Boston Main Interceptor and East Side Interceptor is ahead of schedule and targetted for completion by 1990.

PLANNING FOR WASTE WATER FACILITIES

A year after construction began on new interceptor pipes, the Commission launched a comprehensive study of the entire wastewater system.

Completed in 1985 the study included evaluation of all large sewers, and those smaller sewers where problems were reported. It produced an up-to-date set of maps, an inventory of all sewers and storm drains, evaluation of the condition and capacity of interceptors and major sewers, and predictions of future demands on the system.

The sewer system, although more than a century old in many parts, was found to be in generally good condition. Suggestions for improvements ranged from cleaning of existing pipes, replacement or rerouting of others, to the institution of a maintenance program to clean and monitor major sewers on a routine basis.

Sewerage Service Area — BWSC sewerage system

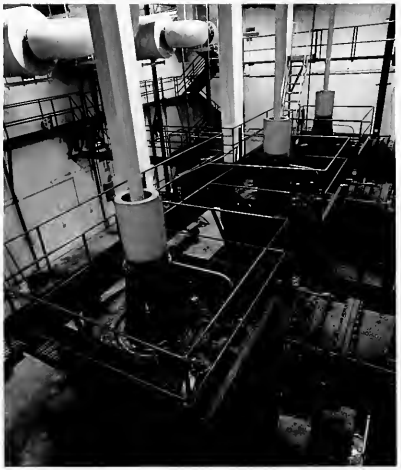
CLEANING UP BOSTON HARBOR

The Boston Water and Sewer Commission is joining the Environmental Protection Agency, the Department of Environmental Quality Engineering, and the Massachusetts Water Resources Authority in an aggressive program to end the pollution of Boston Harbor.

Chief among the Commission's efforts to end this environmental crisis is the installation of new sewer interceptors. With the addition of these pipes, sewage will no longer back up into Harbor waters during periods of peak demand. The elimination of dry weather sewage overflows will help keep area beaches free of debris and eliminate sources of coastal pollution.

Approximately one third of Boston's sewage system is constructed to combine collection of wastewater and storm drainage. This design, championed in the 1800s, did not consider the effect of rapidly increasing demand. As rain water and wastewater enter the system at the same time, sewage can overflow at 58 locations throughout the city. These combined sewer overflow (CSO) points are a source of Harbor pollution.

One remedy is the separation of combined sewers to increase capacity. Separation projects



are now underway in the South End, Dorchester, Hyde Park, Jamaica Plain, Allston, Charlestown and South Boston.

A second solution is treatment of the overflow before it enters the Harbor. Facilities for such treatment have been constructed at CSO sites at Cottage Farm and at Boston Sand and Gravel. Initiated by the MDC, these projects are now managed by the MWRA. A third facility has recently been completed at Constitution Beach in East Boston, and additional facilities are in the design stage at Fox Point and Commercial Point in Dorchester.

A third approach to CSOs is storage of the overflow until the system regains the capacity required for proper treatment.

As part of the recent comprehensive examination of the sewer system, areas of excessive infiltration and inflow were identified for remedial action. To help prevent illegal discharges, the Commission conducts monthly inspections of storm drains, and performs dye tests on homes and businesses to detect illegal connections.

Although the City of Boston is not solely responsible for Harbor pollution, the Commission will continue to seek cost-effective and responsible strategies to help improve the environmental quality of Boston Harbor.

Some manhole covers are over 100 years old. Made of cast iron, covers like these are still seen on the streets of Boston. Their sizes and shapes document the history of the changes in the Boston Water and Sewer systems. The older covers have large knobs and letters which were designed to keep horses with heavy loads from slipping on wet streets. Before the 1940's foundries competed to design the most attractive and distinctive covers. Unfortunately, those variations of designs were eliminated after the '40s when it became more cost effective to make the covers uniform.

The Lowry pre-dates the postfire hydrant. It was used in areas of the City like Downtown and the North End where there were no sidewalks or room for standing hydrants. Strapped on fire trucks, the Lowrys would be attached to underground connections at the scene of a fire. They were also used at the end of dead end streets to blow out stagnant and rusty water. Today it is possible to see a Lowry carried on a pumper truck because some are still needed for service in certain Boston neighborhoods.

BRINGING CLEAN WATER TO BOSTON

Currently the Commission buys 120 million gallons of water a day for the City of Boston. This water, among the purest in the nation, is purchased in bulk from the MWRA by the Commission at 29 metered connections and is distributed through the system's 1080 miles of pipe to over 87,000 homes, apartments, businesses and institutions.

When the Commission took possession of Boston's aging water system in 1978, somehow, half of the water provided to the system, some 74 million gallons each day, could not be accounted for. Although some loss is common for any water system, this rate was unusually high.

The sources of the problem lay in two areas; first, pipe deterioration within the aging system; and secondly, a lack of properly functioning meters to measure water usage.

However, by 1985, unaccounted for water in the City of Boston had been reduced by almost thirty-five percent. The results of the Boston Water and Sewer Commission's Leak Detection and Metering Program were profound.

LEAK DETECTION AND REPAIR

Leaks are inevitable along a thousand miles of pipe, much of which has been underground for over a century. Causes include pipe deterioration, soil condition around pipes causing shifting or corrosion, frost upheavals, vibration from heavy traffic, and "water hammer"—rapidly changing flow direction and pressure caused by opening and closing valves and hydrants.

To combat water loss, the Commission plans the rehabilitation of eleven miles of pipe each year with the goal of replacing or relining all water mains, 100 or more years old, by the turn of the century. During the last three years, thirty-five miles of pipe have been repaired, keeping this program ahead of schedule.

To reduce cost and minimize disruption of traffic flow and residential service, pipe rehabilitation is scheduled to coincide as much as possible with other municipal and state public works projects.

The Commission's Leak Detection Program is one of the most successful in the country and is considered a model for other cities.

Water Service Area — Major water main

MODERN METERS

The second phase of the Commission's efforts to reduce water loss is the repair of existing meters when appropriate or the installation of modern meters where necessary.

Of the 87,000 water accounts serviced by the Commission, some 75,000 are residential customers. The residential metering program, since its inception in 1978, has resulted in the installation of 40,000 new meters with remote reading capability. Plans call for additional installations at a rate of 5000 a year. After new meters are installed, they will be replaced on a 15-year cycle, as they tend to be less accurate over time.

System-wide distribution of accurate meters fairly allocates costs and reduces estimated bills. The Commission is also rerouting meter-reading sequences to increase productivity of meter-reading personnel. Options for use of advanced technology to further automate and centralize the process are under consideration.

Prior to creation of the Commission, use of water by the City was not metered. Meters have now been installed in many City departments, including Fire, Libraries, Police, Public Works,

Schools, and Traffic and Parking, making the City the system's second largest consumer. Metering efforts are now focusing on the Health and Hospitals Department.

The Commission's Metering Program has significantly reduced unaccounted for water and stimulated water conservation measures by system users.

FIREFIGHTING

As part of its water distribution system, the Commission maintains over twenty-two miles of high pressure fire pipes and over 13,000 hydrants.

The City is fortunate to be served by a water system which provides both elements critical to successful firefighting—adequate volume and sufficient pressure.

The Quabbin Reservoir is situated 530 feet above the base level of Boston. The force of gravity propels water through aqueducts and tunnels to Boston where this natural pressure is utilized for firefighting, eliminating the need for expensive pumping, except in the case of skyscrapers, which are serviced by high pressure pipes. Volume is provided by the over 470 billion gallon joint capacity of the Quabbin and Wachusett Reservoirs.

To build Boston's brick pipes, engineers had to design gigantic wooden structures to aid in their construction. In the conduit near the Fenway, bricks for the bottom half of a pipe were laid and then a collapsible wooden frame was placed over them. Bricks were then placed over the structure to form the top half of the pipe. When the top section was completely dry, the structure was collapsed and moved down to the next section to begin again. This construction process was arduous and sometimes dangerous for the workers involved.

In 1795 when wells proved unable to supply the town of Boston with water, the Boston Aqueduct Corporation developed an innovative solution to the problem. They transported water a distance of 15 miles from Jamaica Pond to downtown Boston. For over fifty years Jamaica Pond was the primary source of clean water to Boston. Today the pond is used solely for recreational boating and fishing while Boston receives its water from the giant Quabbin and Wachusett reservoir system in the western part of the state.

Community Affairs

Public interest in water and sewer issues has increased profoundly over the last few years. Part of this interest results from higher rates and the disruption of some neighborhood thoroughfares for maintenance and improvement. In addition, the critical issues of water conservation and pollution control have required the Commission to make every effort to increase public understanding of their operations and goals.

The Commission's Community Affairs Department has excelled at highly effective, cost-efficient methods of educating and informing its customers. Attractively designed and clearly written notices mailed with quarterly bills, advertisements in neighborhood newspapers and regular appearances on news and talk shows all contribute to a high level of public understanding of Commission activities.

More effective than any other method of outreach, however, the Department's commitment to go out to the neighborhoods and meet with residents has produced unified acceptance of the need to upgrade water and sewer services and clean up the Harbor.

Recent public information efforts have tackled issues such as the institution of an inclining block rating system and future increases in rates. By installing safety caps and locks on hydrants, the department has also moved to reduce the incidences of unauthorized opening of fire hydrants during summer months, a practice which lowers water pressure and endangers lives.

In the area of water conservation, the department joins with the MWRA to distribute and display educational material offering consumers simple and practical ways to reduce their use of water.

The Commission recognizes that along with proper financing and sound planning, an essential prerequisite for the successful implementation of modern water and sewer services will be an informed public.

During the coming years, as Harbor clean-up impacts neighborhoods and forces continued rate increases, the Community Affairs Department will be challenged as never before.

Professional Management

As an independent agency with a single focus, the Commission has been able to improve dramatically top management.

A three-member Board of Commissioners, appointed to four year terms by the Mayor subject to confirmation by the City Council, has responsibility for the formation of basic policy. Members meet on a regular basis for consideration of Commission business.

The Commission Chairman is A. Raymond Tye, serving his second term after being reappointed in 1984. Chairman Tye is Chairman of the Board of United Liquors, Ltd., a wholesale beverage distribution firm. Active in civic affairs, he is a Trustee of Beth Israel Hospital, an Honorary Trustee of the Combined Jewish Philanthropies and a member of the Board of the Greater Boston Convention and Tourist Bureau.

Commission member Lisa Chapnick, appointed to the Board in 1985, is Director of the Public Facilities Department of the City of Boston. Commissioner Chapnick is a member of the Mayor's Development Cabinet and serves as the City's liaison to the Commonwealth on housing and development issues. Her wide range of public sector experience includes service as Commissioner of the City's Traffic and Parking Department, and as a member on the MBTA Advisory Board, the Boston Public Schools Task Force, and the Allston Civic Association.

Commission member Mary Nee, Director of the Mayor's Office of Capital Planning, was appointed in 1986. Experienced in budget management and long range capital planning, Commissioner Nee provides the financial expertise required by statute. She also serves on the Mayor's development and financial committees, and on the Board of the Boston Industrial Financing Authority.

The organization is structured under the Office of the Executive Director, and includes departments managed by the Director of Administration, the Chief Engineer, the General Counsel, the Director of Management Information Systems, and the Treasurer.

The Commission staff has remained at a stable complement of approximately 500 since 1980 and includes personnel with professional qualifications in finance, accounting, engineering, construction management and law, as well as the technical skills required to maintain water and sewer services.

The advent of the flush toilet in the 1820s and the City's decision to allow disposal of waste in the drainage system caused a major health hazard. In response, engineers developed the unique plan to pump sewage away from the City out to Moon Island. At Columbia Point the sewage was pumped through channels to the Shaft House where it fell through a 4-foot diameter conduit, a distance of 170 feet, to the 7-foot diameter tunnel below, which carried the flow to the holding tanks of Moon Island. The tanks were opened with the outgoing tide and the sewage was washed out to sea.

A. Raymond Tye
CHAIRMAN

Mary Nee
COMMISSIONER

Lisa G. Chapnick
COMMISSIONER

Francis W. Gens
EXECUTIVE DIRECTOR

Richard Luccio
GENERAL COUNSEL

David L. Conlon
TREASURER

Michael T. Feeney
DIRECTOR OF
ADMINISTRATION

Charles Button
CHIEF ENGINEER

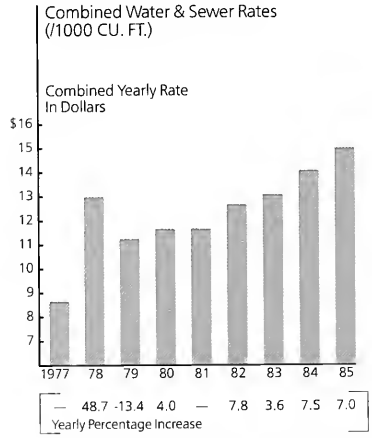
Edmund Ackerson
DIRECTOR OF M.I.S.

Water and Sewer Rates

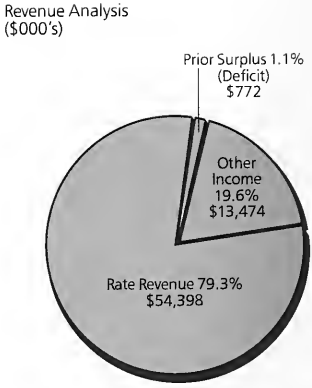
A major impetus for creation of the Commission was the need to generate adequate revenue to meet the cost of proper operation and maintenance of the City's water and sewer systems.

Prior to 1977, all revenue from water and sewer charges was placed directly in the City's general fund. The Department of Public Works Water and Sewer Divisions were forced to compete with other departments for annual funding. Because these divisions never received enough budgetary support and rates were not in line with the actual costs of delivering these services, the system suffered physical deterioration.

Currently, rates must be established at a level sufficient to generate revenues to recover the full cost of operations on a fair and equitable basis, with 15% water discounts in place for the elderly and fully disabled. If an operating deficit occurs, it must be recovered the following year, and any surplus must either be applied to the next year's rate level, or returned to the City. The rate making process considers legislative, financial, legal and consumption analyses.



Average Annual Increase: 8.15



1985 Total Revenue Requirement: $68,644

Capital improvements defined as system replacement or repair are included in the cost of operations; improvements or extension of service are financed through the sale of bonds. The debt service on these bonds, paid out of operating expenses, also affects rate levels.

During the Commission's first year, water and sewer rates were increased by 49%, raising them to adequate levels sufficient to fund operations. However, since the first year, rate increases have tempered to an average of 8% a year through 1985.

The Commission's customer base includes City residents, businesses and institutions. While residents make up 86% of all accounts, they consume only 24% of total services. Twenty large volume customers—the City, State and Federal governments, area hospitals, hotels and universities—account for one-quarter of all charges.

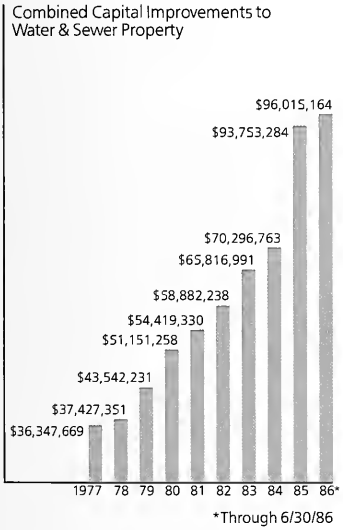
Charges to customers produce more than 80% of the Commission's total revenue. Additional revenue is generated through special

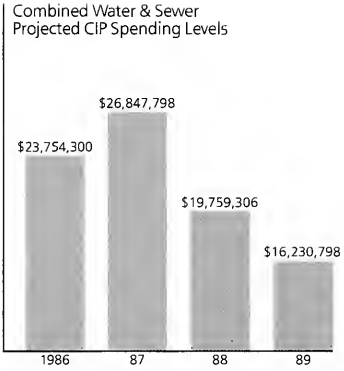
service fees and charges, state and federal reimbursements, and income from investments.

The creation of the MWRA has had a substantial effect on Commission rate levels. As the Authority embarks on a Harbor clean-up program, MWRA communities are feeling the impact. Today charges for MWRA services have accounted for approximately one-third of the Commission's annual expenses.

Expenditures by the Authority are likely to produce average annual rate increases of approximately 15% for the next five years. While the Commission's financial stability will not be threatened because it has prepared for this necessary period of intensive capital investment, Boston Water and Sewer customers will be faced with continued rate increases.

To assure accurate rate levels, the Commission carefully monitors metering at the 29 points where water is delivered by the MWRA,





and independently reviews Authority rate-making methodology.

INCLINING BLOCK WATER RATES

The MWRA is required by its enabling legislation to conduct a review of the environmental, social and economic impacts of its charges for water and sewer services. The legislation also encourages MWRA service area communities to institute innovative rate-making strategies to promote water conservation.

In response, the Commission had the foresight to institute the inclining block rate in 1985. The inclining block rate structure is composed of ten steps designed to correspond to customer consumption, ranging from single family household to large industrial users. Its impact on water use is closely monitored to continually assess the value of the program.

At present the MWRA is asking service area communities to follow the leadership of the Boston Water and Sewer Commission and institute the inclining block rate structure in their communities.

Financial Management

FINANCIAL STABILITY

Since acquiring the water and sewer systems from the City of Boston, the Commission has employed a series of innovative financial strategies which have allowed substantial capital improvement, while at the same time securing a reputation for the Commission as one of the best managed public utilities in the country.

The initial step towards stability most visible to Boston residents was a 49% rate increase in the Commission's first year. This single large jump was required by the loss of rate subsidies formerly provided by the City because rates had been held below levels required to properly fund the system. Rate increases have since moderated, averaging approximately 8% a year through 1985.

Revenue from rates, however, only funds operation and maintenance. Improvements to modernize service and end pollution of Boston Harbor are funded through the sale of bonds.

The Commission first acquired substantial debt when it purchased the water and sewer system for $24 million. Added to that was $13.2 million in outstanding obligation bonds previously issued by the City. To cover those costs and to generate funds to begin capital improvements, the Commission issued its first series of bonds. Because this first issue of $45 million was guaranteed by the City, the Commission was required to accept a number of covenants restricting its financial flexibility.

Within the next few years, however, the Commission developed a reputation for fiscal integrity and stability. Its overall debt management policy allowed independent access to the financial marketplace and use of a broader range of financing strategies.

FINANCIAL INNOVATION

By 1984, the Commission was ready to establish a debt structure which would provide the foundation for funding of all future capital requirements.

The first step was to issue $69.7 million in General Revenue Bonds to refinance the Com-

mission's debt, fund capital improvements, and institute a state-of-the-art bond resolution to allow maximum flexibility within the everchanging financial marketplace. The Commission's 1984 Revenue Bonds were structured as junior lien bonds, subordinate to future debt, providing future increased debt capacity.

In 1985, the Commission took advantage of the flexibility of its new bond resolution by issuing $51 million of variable rate debt. Under this "flexi-note" program, the Commission accessed the short-term bond market which historically had traded at lower interest rates than the long term market, thus generating substantial savings to the Commission.

The final element of what is termed the Commission's "Financial Trilogy" culminated in August of 1986 with the execution of a combination Rolling Cross-Over Refunding and New Money Issue of $85 million in general revenue Bonds.

The Rolling Cross-Over Refunding allows the Commission to pay the low short-term interest rates associated with the 1985 "flexi-note" program; at the same time, it secured a take out for the 1985 issue at historically low long-term rates in the event of future higher short-term rates. The 1986 Revenue Bonds also provide funds for capital improvements through 1989.

The combined result of the Flexi-note and Rolling Cross-Over Programs has been a savings to the Commission estimated by Goldman, Sachs to be nearly $40 million in debt services costs over the next 30 years.

Citing "continued good financial performance, continued increased operating efficiencies, and capable management," Standard & Poor's has assigned the Commission an "A" rating. Moody's has also recently raised its rating from Baa to Baa1. Sophisticated financial planning and proper management of revenue has achieved for the Commission a clean audit opinion for eight straight years.

As the Commission prepares to enter a period of maximum capital expenditure, its financial foundation has never been stronger.

Preparing for the Future

Since the City's earliest days, provision of water and sewer services has required careful planning. Preparing for the future remains essential as Boston continues to grow.

For the short term, the Commission prepares a plan each year which projects activity for the coming three-year period. Generating an average of 30 projects annually, capital improvement programs fulfill the Commission's statuatory responsibility to repair and modernize its water and sewer system.

The infrastructure now in place has an approximate value of $5 billion. During the last eight years, the Commission has invested $133 million to improve its property, plant and equipment.

The Commission's achievements include construction of the new sewer inceptors to replace substantial portions of the Boston Main Drainage System, repair or replacement of 10 miles of sewers, installation or maintenance of all the tide gates in our system, rehabilitation of 80 miles of water pipe, installation of 40,000 remote reading meters and improved metering of City facilities.

Plans for the next three years focus on sewer projects to increase capacity of the system to minimize sewer overflows and thereby significantly contribute to the cleanup of Boston Harbor. Investment in the water system will include additional pipe construction as part of the Commission's goal of rehabilitation of all 100 year old water mains by the year 2000, and continued installation of residential and public meters.

The projected costs in the 1986-1988 Capital Improvement Program are $22.8 million for water and $35.2 million for sewer, totalling $58 million.

Concurrent with the Commission's capital improvement program is MWRA's investment in its delivery and recovery systems. For the same period, Authority costs will total $275 million for water and sewer projects.

A comprehensive study of the downtown area is now underway to assess water, wastewater and storm drainage capacity in light of rapid development. Also nearing completion is a detailed examination of those sewer system areas identified as potential points of high ground water and surface runoff resulting in excessive inflow and infiltration. This study will analyze each indicated trouble spot in detail to determine cost effective remedies.

The Commission is also moving to computerize its maintenance to respond more quickly

Clockwise from Upper Left: Jamaica Pond, Haveys Beach, Quabbin Reservoir

to customer needs and to target preventative measures. With the impending acquisition of a site for consolidation of headquarters and all field operations, customers can look forward to reduced costs and better service from improved coordination.

WATER CONSERVATION

As one of the most effective programs of its kind anywhere in the country, leak detection will continue to be at the heart of the Commission's water conservation program. Few conservation efforts can boast a savings of tens of millions of gallons each day. As an added measure, the institution of the successful inclining block rate structure further encourages conservation through price inducement. Educational material, highlighting simple ways to save water will also continue to be distributed to customers on a regular basis. As a result of improved awareness, Boston's per capita residential consumption is already well below the national average at 65 gallons a day.

THE NEXT CHALLENGE

Much has been accomplished in the last eight years towards the Commission's goal of providing superior water and sewer services to the City of Boston. But even as this task is mastered, greater challenges now begin—the clean-up of Boston Harbor and the long-term provision of an adequate water supply.

Financial resources and political initiative are in place. The same vision that guided planners to tap Long Pond, construct the Boston Main Interceptor System, and build the Quabbin Reservoir must guide us to shape our future as well.

The restoration of Boston Harbor will continue to impact the health and growth of the City of Boston. We will not see immediately the fruits of our work. Yet, a day will come when Boston Harbor will once again be a source of pride and commerce and our children will thank us as we thank those whose foresight and planning has enriched and improved our lives.

Boston Harbor

Auditors' Opinion

Boston Water and Sewer Commission:

We have examined the balance sheet of the Boston Water and Sewer Commission as of December 31, 1985 and the related statements of operations, of Commission equity and of changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards and, accordingly included such tests of the accounting records and other such auditing procedures as we considered necessary in the circumstances. The financial statements of the Boston Water and Sewer Commission for the year ended December 31, 1984 were examined by other auditors whose report, dated April 19, 1985, expressed an unqualified opinion on those statements.

In our opinion, the financial statements for 1985 present fairly the financial position of the Boston Water and Sewer Commission at December 31, 1985 and the results of its operations and changes in its financial position for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Deloitte Haskins & Sells

April 11, 1986

Balance Sheets, December 31, 1985 and 1984

ASSETS	NOTES	1985	1984
CURRENT ASSETS:			
Cash		$ 616,806	$ 521,626
Trusteed assets	4, 7	22,034,432	13,533,696
Nontrusteed assets	4	19,313,246	3,401,999
Accounts receivable—customers, less allowances of $4,389,000 in 1985 and $7,274,000 in 1984		27,338,903	27,626,887
Earned revenues in excess of billings, less allowances of $632,000 in 1985 and $945,000 in 1984		7,578,599	8,714,809
Accounts receivable—federal and state construction grants		8,312,284	4,804,263
Prepaid expenses		1,194,653	950,532
Deferred charges	1, 2, 7	8,825,590	2,064,092
Total current assets		95,214,513	61,617,904
TRUSTEED ASSETS	4	22,904,826	15,863,663
NONTRUSTEED ASSETS	4	33,809,763	5,122,472
PROPERTY, PLANT AND EQUIPMENT, NET	3, 8	156,400,245	135,415,016
DEFERRED CHARGES	1, 2	18,588,284	10,843,828
DEBT ISSUE COSTS, LESS AMORTIZATION		3,679,475	2,627,256
TOTAL		$330,597,106	$231,490,139

See notes to financial statements.

LIABILITIES AND COMMISSION EQUITY	*NOTES*	*1985*	*1984*
CURRENT LIABILITIES:			
Payable from current assets:			
Accounts payable		$ 4,301,686	$ 2,764,257
Other accrued liabilities	7	11,083,122	10,320,884
Due to City of Boston, net	6	5,481,835	6,718,817
Total		20,866,643	19,803,958
Payable from restricted asset funds:			
Massachusetts Water Resources Authority assessment for water and sewerage	5	27,245,808	20,849,040
City Bonds, including accrued interest	4	849,224	889,365
Total		28,095,032	21,738,405
General Revenue Bonds, 1984 Series A, including accrued interest	4	3,978,413	554,735
General Revenue Bonds, 1985 Series A, including accrued interest	4	784,375	
Deferred revenues	1, 2	18,973,734	10,528,478
Total current liabilities		72,698,197	52,625,576
OTHER LIABILITIES:			
Massachusetts Water Resources Authority assessment for water and sewerage	5	16,121,457	10,825,438
City Bonds	4	4,215,000	4,995,000
General Revenue Bonds, 1984 Series A, net of unamortized original issue discount	4	64,372,068	64,662,848
General Revenue Bonds, 1985 Series A	4	50,800,000	
Deferred revenues	1, 2	51,799,980	43,395,309
Other liabilities		3,622,871	1,475,000
Total other liabilities		190,931,376	125,353,595
COMMISSION EQUITY:			
Contributed capital	1	72,514,229	59,057,664
Accumulated deficit		(5,546,696)	(5,546,696)
Total Commission equity		66,967,533	53,510,968
TOTAL		$330,597,106	$231,490,139

Statements of Operations
for the Years Ended December 31, 1985 and 1984

	NOTE	TOTAL 1985	TOTAL 1984	WATER 1985	WATER 1984	SEWER 1985	SEWER 1984
OPERATING REVENUES:							
Water and sewer usage		$50,776,445	$47,684,778	$27,277,897	$26,782,406	$23,498,548	$20,902,372
Fire pipe		951,135	807,807	951,135	807,807		
Other		377,776	248,565	202,866	137,954	174,910	110,611
Total operating revenues		52,105,356	48,741,150	28,431,898	27,728,167	23,673,458	21,012,983
OPERATING EXPENSES:							
Operations		32,700,176	32,258,714	18,337,123	18,457,671	14,363,053	13,801,043
Engineering and administrative		9,470,741	9,178,404	5,085,788	5,094,015	4,384,953	4,084,389
Maintenance		3,433,962	4,321,214	1,810,639	2,564,547	1,623,323	1,756,667
Depreciation		2,691,923	2,539,940	1,371,682	1,273,349	1,320,241	1,266,591
Total operating expenses		48,296,802	48,298,272	26,605,232	27,389,582	21,691,570	20,908,690
TOTAL OPERATING INCOME		3,808,554	442,878	$ 1,826,666	$ 338,585	$ 1,981,888	$ 104,293
OTHER INCOME (EXPENSE):							
Interest income		9,646,691	6,573,862				
Interest expense		(9,313,374)	(6,835,637)				
INCOME FROM CURRENT OPERATIONS	1	4,141,871	181,103				
PRIOR YEAR RATE SURPLUS RECOGNIZED IN CURRENT YEAR		772,365	591,262				
CURRENT YEAR RATE SURPLUS DEFERRED TO SUBSEQUENT YEAR	1	(4,914,236)	(772,365)				
NET INCOME		$ -0-	$ -0-				

See notes to financial statements.

Statements of Commission Equity
for the Years Ended December 31, 1985 and 1984

	CONTRIBUTED CAPITAL	*ACCUMULATED DEFICIT*	*TOTAL COMMISSION EQUITY*
BALANCE, JANUARY 1, 1984	$51,163,589	$(5,546,696)	$45,616,893
CONTRIBUTIONS IN AID OF CONSTRUCTION	8,268,075		8,268,075
AMORTIZATION OF RELATED FIXED ASSETS	(374,000)		(374,000)
BALANCE, DECEMBER 31, 1984	59,057,664	(5,546,696)	53,510,968
CONTRIBUTIONS IN AID OF CONSTRUCTION	13,902,552		13,902,552
AMORTIZATION OF RELATED FIXED ASSETS	(445,987)		(445,987)
BALANCE, DECEMBER 31, 1985	$72,514,229	$ (5,546,696)	$66,967,533

See notes to financial statements.

Statements of Changes in Financial Position
for the Years Ended December 31, 1985 and 1984

	1985	*1984*
CASH FROM OPERATING ACTIVITIES:		
Net income	$ -0-	$ -0-
Depreciation and amortization (no cash required)	3,293,589	2,728,220
Realized from (used for) operating activities:		
Accounts receivable—net	(3,220,037)	(3,781,377)
Earned revenues in excess of billings—net	1,136,210	(1,573,987)
Deferred charges	(14,505,954)	(11,489,104)
Accounts payable assessments accrued liabilities and other	18,012,134	12,181,104
Deferred revenues	16,849,927	4,057,469
Total	21,565,869	2,122,325
CASH FROM FINANCING ACTIVITIES:		
Bond proceeds	51,000,000	64,662,848
Bond liquidation		(64,042,331)
Bond payments	(815,000)	(1,405,000)
Contributions in aid of construction—net	13,456,565	7,894,075
Debt issue costs	(1,294,665)	(1,153,803)
Total	62,346,900	5,955,789
CASH USED FOR INVESTING ACTIVITIES:		
Purchase of property, plant, and equipment	(23,677,152)	(19,250,022)
CASH AND SECURITIES:		
Increase (decrease) during year	60,235,617	(11,171,908)
Balances at beginning of year	38,443,456	49,615,364
Balances at end of year	$ 98,679,073	$ 38,443,456
YEAR END BALANCES COMPRISED OF:		
Cash	$ 616,806	$ 521,626
Current portion:		
Trusteed assets	22,034,432	13,533,696
Nontrusteed assets	19,313,246	3,401,999
Noncurrent portion:		
Trusteed assets	22,904,826	15,863,663
Nontrusteed assets	33,809,763	5,122,472
TOTAL CASH AND SECURITIES	$ 98,679,073	$ 38,443,456

See notes to financial statements.

Notes to Financial Statements

1. ORGANIZATION, BASIS OF PRESENTATION AND SUMMARY OF SIGNIFICANT ACCOUNTING PRINCIPLES

The Boston Water and Sewer Commission (the Commission) was created by the Boston Water and Sewer Reorganization Act of 1977 (the Enabling Act) to take over operations, assets, and certain liabilities of the City of Boston (the City) and its Department of Public Works (the D.P.W.) pertaining to the City's water and sewerage works systems.

The Enabling Act requires that the Commission maintain its books and records and present its financial statements on an accrual basis in accordance with generally accepted accounting principles. The Commission has also adopted accounting policies and practices to be utilized in connection with its rate setting process. These policies and practices, which are in conformity with sound and appropriate rate making practices used by similar organizations, require recognition of certain expenses and expenditures on a basis different than generally accepted accounting principles for a nonregulated business.

The Commission has adopted Financial Accounting Standards Board Statement (FAS) No. 71, "Accounting for the Effects of Certain Types of Regulation." Under that Statement, revenues which are raised currently to provide for certain costs that are expected to be incurred in the future are recorded as deferred revenues. Additionally, certain costs are deferred if future revenues result in amounts equal to the deferred costs. The effect of these changes allow a more meaningful presentation of the results of operations, in that the financial statements under generally accepted accounting principles more closely reflect the Commission's rate setting financial results.

The following is a reconciliation outlining the effects of FAS No. 71 on the statement of operations for the years ended December 31, 1985 and 1984.

	1985	*1984*
Net income (loss) prior to deferrals	$5,294,324	$(7,431,636)
Revenues and expenses deferred in accordance with FAS No. 71:		
Deferred revenues:		
Excess of revenues raised over expenditures	(2,096,566)	–
Other	(4,388,437)	(3,876,365)
Deferred expenses	5,332,550	11,489,104
Income from current operations	$4,141,871	$ 181,103

The Enabling Act requires that any net surplus or deficit, as defined by the rate setting process, must either be returned to the City or applied to offset water and sewer rates for the following year. The Commission has applied $4,914,236 and $772,365 for the years ended December 31, 1985 and 1984, respectively to offset rates in the respective subsequent years.

REVENUES

Water and sewerage fees are billed to users of the systems on a quarterly cycle basis. Revenues are accrued for periods between the termination of billings for the various cycles and the end of the year.

SHORT-TERM INVESTMENTS

Short-term investments, consisting of direct and unconditionally guaranteed obligations of the U.S. Government; repurchase agreements and money market units secured by government securities, are stated at cost plus accrued interest (approximating market).

PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment is stated at cost. Depreciation is provided on the straight-line method based on the estimated useful lives of the various classes of assets. Maintenance and repairs are charged to expenses as incurred. Major renewals or betterments are capitalized and depreciated over their estimated useful lives.

Contributions received in aid of specific construction projects are considered contributed capital and are included in Commission equity. Accordingly, amortization of the related fixed assets is charged directly to Commission equity and is not included in the accompanying statements of operations.

The ranges of estimated useful lives used in computing depreciation are as follows:

	YEARS
Water:	
Works	60 to 100
Meters and hydrants	10 to 40
Sewerage:	
Works	40 to 75
Pumping station	35
Other	3 to 15

The Commission capitalizes interest cost related to construction of assets for its own use. Interest totaling approximately $722,000 and $613,000 was capitalized in 1985 and 1984, respectively.

BOND ISSUE COSTS

Expenses related to the issuance of bonds are amortized on a weighted-average basis over the life of the bonds.

RECLASSIFICATION

Certain prior year amounts have been reclassified to conform to current year presentation.

2. DEFERRED CHARGES AND REVENUES

The following is a summarization of the major components of deferred charges and revenues as reflected in the accompanying balance sheet:

	1985	*1984*
	(000's OMITTED)	
Deferred charges:		
Provision for pension settlement (see Note 7).	$ 8,300	$ 8,300
Excess of amounts accrued for water and sewerage assessments over cash payments	14,400	2,763
Provision for litigation claims	1,744	1,845
Provision for adjustments	2,970	—
Total deferred charges	$27,414	$12,908
Current deferred charges	$ 8,826	$ 2,064
Noncurrent deferred charges	18,588	10,844
Total	$27,414	$12,908

	1985	1984
	(000's OMITTED)	
Deferred revenues:		
Capital improvement reimbursements	$34,391	$31,046
Principal payments on long-term debt	8,814	8,835
Allowance for slow collection	12,196	9,682
Other	15,373	4,360
Total deferred revenues	$70,774	$53,923
Current deferred revenue	$18,974	$10,528
Noncurrent deferred revenue	51,800	43,395
Total	$70,774	$53,923

3. PROPERTY, PLANT AND EQUIPMENT

The cost of water and sewerage plant and equipment in service and related accumulated depreciation at December 31, 1985 and 1984 are summarized as follows:

	1985	1984
Water:		
Works	$ 58,285,036	$ 42,088,279
Meters and hydrants	7,574,543	7,079,891
Total water	65,859,579	49,168,170
Sewerage:		
Land	195,482	195,482
Works	51,397,296	44,675,126
Pumping station	6,772,785	6,729,843
Total sewerage	58,365,563	51,600,451
Other	5,037,862	4,767,545
Total	129,263,004	105,536,166
Less accumulated depreciation	18,711,037	15,565,727
Total	110,551,967	89,970,439
Construction in progress	45,848,278	45,444,577
Total	$156,400,245	$135,415,016

4. BONDS PAYABLE

REVENUE BONDS

In April 1985, the Commission issued 1985 Series A General Revenue Bonds (1985 Bonds) in order to provide funds for projects under the Commission's ongoing capital improvement programs and other capital and operating needs. The bonds have a principal balance of $51,000,000 at December 31, 1985, bearing variable interest rates (6.375% and 7.375% at December 31, 1985), maturing in two equal amounts on November 1, 2014 and 2015 and require annual sinking fund contributions through the year 2014.

In December 1984, the Commission issued 1984 Series A General Revenue Bonds (1984 Bonds) in order to advance refund a series of 1980 System Revenue Bonds. The bonds have a principal balance at December 31, 1985 and 1984 of $69,670,000, bearing interest rates ranging from 6.75% to 10.5% with maturity dates ranging from January 1, 1986 to January 1, 2011. Under the Refunding Trust Agreement, the Commission deposited sufficient funds with the 1980 Bond Trustee to pay when due, the principal of and interest on all 1980 Bonds through January 1, 2001, the final maturity date thereon. By depositing such funds with the 1980 Bond Trustee under the Refunding Trust Agreement, the Commission caused the 1980 Bonds to be no longer outstanding under the 1980 Resolution. The 1980 Bondholders have no right, title, interest or liens in any other funds, real or personal property or assets of the Commission other than the amounts held under the Refunding Trust Agreement and pledged for their benefit thereunder.

The Resolution Establishing Issue of Revenue Bonds adopted by the Commission on December 6, 1984 places certain restrictions on the Commission's operations. It requires that rates, charges and fees be set at a level sufficient to meet a net revenue test on an annual basis and requires that all revenues, as defined, be deposited in a Revenue Fund maintained by a fiscal agent. Amounts held in the Revenue Fund are to be disbursed to and withdrawn from other funds provided for in the Resolution. The Resolution provides that all excess cash be held in the Revenue Fund until the last business day of the fiscal year. At that time, if certain convenants are met, the Commission has the option to remove any excess cash from the Revenue Fund and place such cash in a fund not restricted by the Resolution.

In compliance with the Resolution, the Commission has established both trusteed and non-trusteed funds with assets, principally short-term securities, which are restricted for payment of specified liabilities. The Commission has options for early redemption of revenue bonds starting in 1995 at prices ranging from 103 to 100 percent of face value.

CITY BONDS

At the time of its creation, the Commission assumed general obligation certificates of indebtedness of the City (City Bonds) pertaining to the water and sewerage works systems with aggregate principal balances of $4,995,000 and $5,810,000 at December 31, 1985 and 1984, respectively, bearing interest rates ranging from 4.25% to 8% with maturity dates ranging from November 1986 to December 1999. Payments for principal and interest are made directly to the City in accordance with the original maturity and interest schedule.

Bond maturities and sinking fund requirements of the 1985 Bonds, the 1984 Bonds, and the City Bonds, in aggregate, at December 31, 1985 are as follows:

1986	$ 1,630,000
1987	1,660,000
1988	1,920,000
1989	1,950,000
1990	2,050,000
Thereafter	116,455,000
Total	125,665,000
Unamortized debt discount	(4,647,932)
Accrued interest	3,982,012
Total bonds payable	$124,999,080
1985 Bonds	$ 51,584,375
1984 Bonds	68,350,481
City Bonds	5,064,224
Total bonds payable	$124,999,080

5. MASSACHUSETTS WATER RESOURCES AUTHORITY

On January 1, 1985, legislation became effective creating the Massachusetts Water Resources Authority (the Authority) which transferred possession, control and operations of the Metropolitan District Commission (MDC) Waterworks and Sewer System to the Authority. The Authority commenced operations on July 1, 1985.

The Authority (previously MDC) provides all the Commission's water and sewer treatment requirements and assesses the Commission for its actual operating and capital expenses. Payments for the prior calendar year's water and sewer treatment assessments are due semi-annually in November of the current year and in May of the subsequent year. Interest is not charged on the outstanding balance. Estimated charges and assessments for 1985 and actual amounts for 1984 are as follows:

	1985	*1984*
Water charges	$14,141,000	$11,524,000
Wastewater assessments	17,563,000	9,541,000
Total	$31,704,000	$21,065,000

In 1985 and 1984, approximately 66% of water purchased from the Authority was billable to customers. Since its inception, the Commission has increased the percentage of billable water from 52% in 1977 to the current level of 66% in 1985 and is continuing to take steps to improve the amount of water billable, including replacement of old and defective meters and a comprehensive leak detection and repair program.

6. TRANSACTIONS WITH THE CITY OF BOSTON

The Commission's ongoing program to meter City facilities has resulted in billings to nine City departments based on actual consumption of $707,000 and $579,000 in 1985 and 1984, respectively. The remaining four City departments were billed based on estimated consumption for $988,000 and $932,000 during 1985 and 1984, respectively.

The City provides services to the Commission, including paving and facilities rental. Operating costs billed by the City were $924,000 and $1,540,000 during 1985 and 1984, respectively. Capital costs billed by the City were $684,000 and $2,735,000 during 1985 and 1984, respectively.

7. RETIREMENT BENEFITS

Retirement benefits for eligible employees are provided under the State—Boston Retirement System (Boston System) which is a "pay as you go" system requiring participating members to reimburse the System on a proportional basis of all pension benefits currently paid by the system based on current regular compensation of covered employees. Because of the dispute with the Retirement Board of the Boston System, as noted below, the Commission is not a participating member of the Boston system. The Commission's policy is to accrue currently for its employee base the normal cost of future retirement benefits using 11.14% of regular compensation based on an actuarial valuation.

Pension expense was $1,179,000 and $1,140,000 for 1985 and 1984, respectively. In order to provide a funding mechanism for these retirement obligations, the Commission has voluntarily established a pension trust fund with assets of $9,451,000 and $7,531,000 as of December 31, 1985 and 1984, respectively. The Commission does not record this fund as its asset because it is anticipated that the fund will be used to satisfy pension obligations.

The Retirement Board of the Boston System has requested that the Commission be a participating member of the Boston System and, as such, to pay its proportional share of all pension benefits paid by the System. The Commission's estimate of the amount at issue were they to become a member is $11.3 million for benefits paid during the years 1978 through 1985. In 1984, the Commission recorded a liability of $8.3 million to provide for its estimate of settlement. This amount has been recorded as a deferred charge and an other accrued liability in the accompanying balance sheets.

In 1985, the Commission voluntarily deposited $8.3 million in a trust fund for this matter (assets were $8.9 million at year end) from proceeds of the 1985 Series A Bonds (see Note 4). This fund has been recorded as a current trusteed asset in the accompanying balance sheet. Any of the $8.3 million proceeds which remain unexpended shall be applied on November 1, 1986 to the redemption of 1985 Series A Bonds maturing in 2014.

8. COMMITMENTS

The Commission exercised its option to renew the lease for office space through April 1988 at an annual rental of $193,000 which provides that the Commission pay for utilities, insurance, tax escalation and maintenance. Total rent expense charged to operations amounted to $764,000 and $878,000 in 1985 and 1984, respectively.

A major capital improvement program is currently in progress. As part of this program, the Commission has entered into a number of contracts for the design and construction of its facilities. Commitments under these contracts aggregate $4,013,000 at December 31, 1985. Capital improvements, primarily related to water and wastewater system projects with an emphasis on the clean-up of the Boston Harbor area, are expected to aggregate $159 million for 1986 through 1993. Of this amount $88 million represents extension and improvement projects to be funded by the proceeds of Commission revenue bonds and federal and state grants for certain wastewater projects, and $71 million represents renewal and replacement projects to be funded by current revenues of the Commission.

9. CONTINGENCIES

The Commission is involved in ordinary and routine litigation incidental to its operations. Management believes that the resolution of these matters will not materially affect the financial position of the Commission.

The Commission has received federal and state grants for specific purposes that are subject to review and audit by the grantor agencies. Such audits could lead to requests for reimbursement to the grantor agency for expenditures disallowed under terms of the grant. The Commission believes such disallowances, if any, will not be significant.

10. EVENTS SUBSEQUENT TO DATE OF AUDITORS' OPINION

During July 1986, the Commission, the City and the Retirement Board have engaged in discussions which the Commission expects will lead to the execution, by all three parties, of a settlement agreement with respect to the dispute described in Note 7. The terms and conditions of this settlement agreement will require certain approval prior to implementation. In the event the Commission and the City execute a settlement agreement prior to August 1, 1986, the Commission expects to deposit approximately $9 million from the proceeds of the 1986 Series A Bonds into a trust fund for this matter. Any of the $9 million proceeds which remain unexpended on February 1, 1987 shall be applied to the redemption of 1986 Series A Bonds on the first available call date. This amount, together with the sum of $8.3 million previously deposited (see Note 7) and the investment income earned on the 1985 deposit, is expected to be sufficient to cover all of the costs of such settlement. The Commission intends to record the 1986 portion of this settlement as a deferred charge to be recovered through future rates.

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