

Infrastructure Replacement Plan

1996 - 2015

Providence Water

Prepared Under the Supervision of
Richard O. Rafanovic, P.E.
General Manager & Chief Engineer

Providence Water

PROVIDENCE WATER SUPPLY BOARD

INFRASTRUCTURE REPLACEMENT PLAN
For Fiscal Years 1996 Through 2015

Project Development Team

Richard O. Rafanovic, P.E., General Manager and Chief Engineer
Paul J. Gadoury, P.E., Director of Engineering
Steven D. Santaniello, Manager Capital Improvements
Anita Mozzetta, Administrative Assistant

Prepared under the Supervision of
RICHARD O. RAFANOVIC, P.E., MBA
General Manager and Chief Engineer

FEBRUARY 1996

PROJECT TEAM

PROJECT DEVELOPMENT AND OVERSIGHT
Richard O. Rafanovic, P.E.

REVENUE GENERATION MODULE DEVELOPMENT
Richard O. Rafanovic, P.E.

EXPENDITURE PLAN DEVELOPMENT
Paul J. Gadoury, P.E.
Steven D. Santaniello

PROJECT PREPARATION
Anita Mozzetta

PUBLISHING AND COPY EDITING
David A. Nickerson

ACCOUNTING IMPLEMENTATION
Paul Titzmann

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Executive Summary

ARMANDO PARILLO
Chairman
JOEL D. LANDRY, II, ESQ.
Vice Chairman
JAMES LOMBARDI
Secretary
FERNANDO S. CUNHA, ESQ.
Legal Advisor
BOYCE SPINELLI
Ex-Officio

Providence Water

VINCENT A. CIANCI, JR.
Mayor
RICHARD O. RAFANOVIC, P.E.
General Mgr./Chief Engr.
JOSEPHINE DiRUZZO
City Councilwoman
EVELYN V. FARGNOLI
City Councilwoman
MARY A. NOCERA
Member
JOYCE TESSERIS
Member

February 29, 1996

Patricia A. Nolan, M.D., M.P.H.
Director of Health
R. I. Department of Health
3 Capitol Hill
Providence, Rhode Island 02908

Re: Infrastructure Replacement Plan - Executive Summary
Providence Water Supply Board - Fiscal Years 1996 - 2015

Dear Dr. Nolan:

Providence Water is submitting six (6) copies of the Plan for Infrastructure Replacements consistent with requirements of The Comprehensive Clean Water Infrastructure Act of 1993. The plan and the concepts are detailed in the body of the report and are summarized in the Executive Summary for convenience. The Plan takes the reviewer from the past into the future by addressing the water agency's history, identifying the problems which developed over the decades, citing the solution and legislative actions taken, and projecting Providence Water's implementation of our Replacement Program. The intent of the plan is to demonstrate the accomplishments to date, to address funding requirements to meet the objectives of the Act, and to submit our findings and project schedules which, if implemented, will lead to the continued delivery of a reliable water supply for fire suppression and healthy drinking water for the enjoyment of our customers throughout our service territory.

Providence Water has been supplying water to the communities in the central area of Rhode Island since the mid-1860s. The initial water supply was primarily for fire protection, while drinking water was drawn from wells and rivers. As industrialization and increased population density led to pollution of the source water, Providence Water was required to expand its infrastructure to supply drinking water in addition to fire protection. By the turn of the century, several episodes of waterborne diseases caused the Providence City Council to find a new source of water. In 1915, legislation was passed which led to the construction of the Scituate Reservoir complex and treatment plant. The Reservoir and plant were completed in 1925 and since then have served the major portion of Rhode Island well. Infrastructure was expanded to meet the needs of the area and grew to a system that today serves approximately 600,000

people. Management philosophy based on the motto "Don't fix it if it isn't broke" was prevailing practice until the end of the 1980's. Meanwhile, the infrastructure was deteriorating.

Commencing in 1990, Providence Water embarked on a new mission. We secured some initial funding from the Public Utilities Commission for Capital Improvements. We professionalized the organization, and we promoted legislation which was intended to stop the ongoing deterioration of infrastructure by restricting portions of the revenue from the sale of water to a continuing infrastructure replacement program. This legislation was adopted in 1993: The Comprehensive Clean Water Infrastructure Replacement (IFR) Act. This report is our first submittal of a plan under this Act and demonstrates our new mission to ensure a healthy and reliable water supply to our customers.

Providence Water has developed this Plan consistent with the objectives of the legislation. The intent of the plan is to replace aging and deteriorating water system facilities before they fail or before frequent repairs jeopardize the reliability of water service and place the public's heath and welfare at risk. Funding for the plan will come from revenues annually set aside and restricted. This sinking fund method (Capital Reinvestment) will accomplish keeping the infrastructure current without causing rate shock, which would otherwise occur if replacement of deteriorated facilities was postponed until a crisis occurs.

Our submittal is consistent with "The Comprehensive Clean Water Infrastructure Act of 1993" (hereinafter referred to as the IFR Act), Chapter 46-15.6 of the General Laws of Rhode Island, and the appropriate regulations pertaining to the Act. Initially, the Plan was due at the beginning of December 1995. At that time we advised you that Providence Water would need more time to complete the plan to match our proposal with anticipated funding consistent with Public Utilities Commission authorization of water rates. Providence Water filed for a rate increase to include IFR funding in March of 1995. The Commission authorized the request in its Order #14881 Docket 2304 on December 26, 1995. The Order includes allocation of funding for infrastructure replacements. The tariffs which will generate these funds are anticipated to be approved early in March 1996.

The Public Utilities Commission also realized the need for keeping a well maintained water system and in 1989 authorized revenues for Capital Improvements in its Docket 1900. Providence Water started capital reinvestment in 1990. At that time, the Commission authorized $3 million. The major portion of this authorization was designated for debt service of already existing debt and continues to be needed until 2015. Approximately $1.2 million remained available for construction or new debt service. Additionally, the Commission authorized in Docket 2304 in December 1995, a set-aside of $4 million in revenues for calendar year 1996,

an additional $2 million commencing January 1997, and another $2 million in January 1998, for a total of $8 million each and every year thereafter. The $1.2 million from Docket 1900 has been committed to debt service for a $12 million dollar bond issue, leaving the proceeds from this bond issue and the new funding authorization for the IFR Program.

Providence Water started to replace facilities in 1990 and completed approximately $8.9 million of replacements through the end of FY 1995 by utilizing Capital Improvement funds authorized by the PUC in Docket 1900.

We have prepared a 20-year plan which proposes that we will replace facilities valued at $204 million over this period. Our Revenue Generation Module suggests that $280 million is required to meet this objective, while our currently authorized revenues total only $177 million for the same period. EXHIBIT - 1 summarizes the Sources and Uses projections of our program and demonstrates a funding shortage of $103 million over the balance of the 20-year plan period. This represents, on the average, an additional $5.2 million per year over the already authorized $8 million.

We are dividing our program into four " 5-Year Phases." We believe that Phase 1, fiscal years 1996 through 2000, can be accomplished with a combination of PUC - authorized funding and proceeds from the sale of bonds already sold. To accomplish this, we are merging two existing bond issues into the program. One bond issue is the $12 million Capital Improvement Program Bond secured from the Rhode Island Clean Water Finance Agency (CWFA) which was sold in 1994; the other is an older bond issue, sold through the State Water Resources Board (SWRB) in 1988. There is $8.5 million available from the CWFA bond and $2.4 million from the SWRB bond which will be added to Phase 1 of our IFR Program.

We are, therefore, supporting the first phase of the program with $10.9 million from one-time revenue sources to match the needed replacement construction program. We are then projecting the balance of the facility replacement requirements in the subsequent 15 years in three 5-year increments and find that additional revenues will be required to meet the full intent of the legislation by the year 1999.

It is Providence Water's intent to proceed with the program based on the combination of one-time funding and ongoing set-aside IFR revenues currently authorized, and evaluate conditions before the end of 1998.

In addition to tracking funding needs, Providence Water will continuously examine the physical conditions of the system's infrastructure. Our Plan is a living document and will be adjusted from

time to time to incorporate changes in the rate of deterioration of facilities and/or obsolescence of facilities caused either by changing land uses, regulatory requirements, or other unforeseen events which cannot reliably be predicted over a 20-year period. Therefore, Providence Water will, on an ongoing basis, make working adjustments to its plan and will submit an amended plan from time to time, but in no event later than within five (5) years from the initially required submittal date.

Providence Water management staff and engineers developed the computerized programs which draw from our data bases to compile funding and expenditure requirements. One of the key features of the plan is the "Revenue Generation Module" which will identify funding needs to be accumulated over the remaining practical life of facilities to ensure replacement of these facilities and to provide sufficient money for the upgrading of facilities from the IFR Set-Aside of ongoing revenues from the sale of water. This methodology is designed to ensure that the system is kept current without causing rate shock.

These data bases and our construction program have been developed by our engineers by drawing on a Needs Assessment Study developed by our staff and consultants in 1989. This assessment study was reviewed in 1994 and the initial costs were adjusted to reflect 1995 costs. Finally, Providence Water engineers analyzed all infrastructure facility components for age, condition, and remaining practical life, and reorganized these into project requirements consistent with the Act. For clarity, and to have manageable segments in the 20-Year IFR Plan, we have divided the Plan into four "5-Year Phases."

The Revenue Generation Module allocates funds to the program based on the concept of funded depreciation and calculates the level of funding required to meet the intent of the legislation. Authorized funding and funding requests are depicted in EXHIBIT - 2, a graph of IFR Funding Projections. EXHIBIT - 3 is a table of the same data and contains the revenue details supporting the Summary in EXHIBIT - 1.

Construction projects for Phase 1 have been matched with available funding and cover the first five (5) years, FY 1996-2001. The projects have been selected for optimum impact to most effectively ensure our ability to continue to provide a reliable water supply to our customers and to the wholesale communities we serve. The IFR Program starts with a huge deficit because funds have not been accumulated in the past to ensure ongoing replacements of deteriorated and aging facilities. As new facilities replace the old infrastructure and their respective depreciation earnings are factored into the program, the Revenue Generation Module will come closer to the intent of the legislation.

The Infrastructure Replacement Program has been developed based on the following premises:

- A water utility's infrastructure consists of many facility categories with varying practical economic lives. To meet the covenant of the legislation, it is necessary to accumulate funds for replacement of various elements within each of these categories when deterioration renders a facility inoperative, or preferably prior to failure. Providence Water therefore has developed an allocation model which will take the current estimated replacement value of each facility category and compute an annual revenue set-aside target utilizing depreciation formulae as its methodology.

- Facility replacements will be scheduled based on need and available cash. This will require borrowing funds from one or several facility categories to aggregate sufficient money to authorize construction for projects needed. We will, of course, reimburse these categories as time goes on and carefully balance construction with available funding while maintaining the integrity of funds earned by each category. To accomplish this, we will maintain accounting records reflecting accrued earnings and track "loans to other categories" and "repayment of loans."

- To ensure that adequate funds are available, we will monitor the economy and adjust the generated revenue requirements to inflationary impacts on an annual basis. Should we find that there are increases or decreases in the cost of constructions, we will make appropriate adjustments to the annual revenue requirements based on regionally accepted construction indices. If, in the event the authorized funding allocation is inadequate, we will from time to time petition the Commission for additional funding.

- Providence Water will exclude from this Module land and other holdings not subject to replacement. The Gainer Dam and reservoirs and other "Long Life" facilities, such as pumping stations and major structures, will be treated differently than the transmission and distribution system. We will allocate revenues to such "Long Life" facilities in a manner to assure cyclical "C" upgrading and repair. To accomplish this, we will apply a multiplier of 5% to the annual depreciation of such facility categories which, in essence, will reduce the sinking fund (revenue allocations) for such categories to that percentage. The net effect of this cyclical factor is that we will accumulate sufficient funds to make upgrades and arrange for substantial work once every 20 years regardless of the economic life of that facility. This will assure that this facility will, for all practical purposes, have an infinite useful life.

The enclosed report has been developed by Providence Water staff and is the outgrowth of many hours of hard work analyzing and reviewing concepts and facility needs. An Infrastructure

Replacement Plan is not supposed to fix existing deficiencies on a one-shot basis but is supposed to put into place a program which will prevent the failure and breakdown of the delivery system on an ongoing basis rather than just when a crisis occurs.

The implementation of the work is well under way. We have been replacing facilities since 1990, and the adoption of the IFR legislation enhances and validates our efforts. Providence Water believes that our IFR Plan is a living document. We intend to make amendments to this plan to match changing Federal and State regulations and adjust to changing field conditions. Our replacement plan is based on the best information available at this time. Our schedule to construct facility replacements is consistent with deterioration or obsolescence as we know conditions to be now. Should there be changes in any of the conditions affecting our IFR Plan, Providence Water will amend its plan accordingly.

Respectfully yours,
PROVIDENCE WATER SUPPLY BOARD

Richard O. Rafanovic, P.E.
General Manager and Chief Engineer

EXHIBIT - 1

Sources and Uses of Funds

IFR Funding & Expenditure Projections

5 - Year Phases for Fiscal Years 1996 - 2015

	Phase 1	Phase 2	Phase 3	Phase 4	Total
Allocation Module Summary (Needed $)	67,896,013	70,789,064	70,789,064	70,789,064	$280,263,204
PW's Projected Funding and Requests	43,914,000	58,120,000	68,900,000	79,300,000	$250,234,000
Funding Shortage based on IFR Plan	(23,982,013)	(12,669,064)	(1,889,064)	8,510,936	($30,029,204)
Authorized Funding	40,914,000	43,120,000	43,900,000	49,300,000	$177,234,000
Partial Projected IFR Construction	44,285,000	51,300,000	53,130,000	55,500,000	$204,215,000
1996 IFR Implementation Deferred	(3,371,000)	(8,180,000)	(9,230,000)	(6,200,000)	($26,981,000)
(Based on Authorized Funding less Partial Construction)					
IFR Implementation Deferred	(23,611,013)	(19,489,064)	(17,659,064)	(15,289,064)	($76,048,204)
(Based on Alloc. Module Needs less Partial Construction)					
*Projected Accumulated Program Deficit **	26,982,013	27,669,064	26,889,064	21,489,064	$103,029,204
(To be reviewed before 1999)					
** Alloc. Plan Module less Authorized Funding*					
In Million Dollars					
Average Funding Need per Year	13.58	14.16	14.16	14.16	14.01
Average Authorized Funding per Year	8.18	8.62	8.78	9.86	8.86
Average Partial IFR Construction per Year	8.86	10.26	10.63	11.10	10.21
Average Annual Funding Shortage	(5.40)	(5.53)	(5.38)	(4.30)	(5.15)
** Alloc. Authorized Funding less Funding Need*					

EXHIBIT - 2

IFR Funding Projections

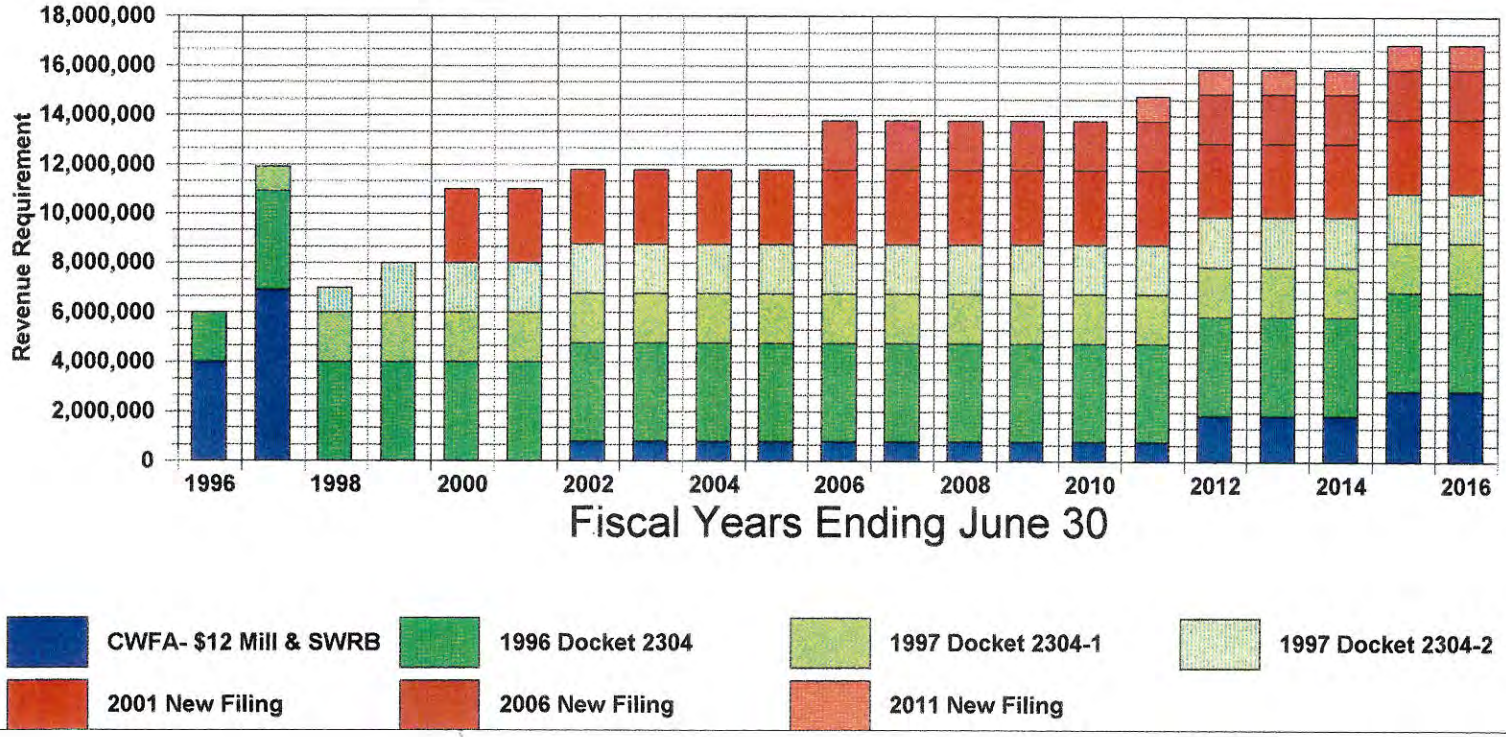


EXHIBIT - 12

PROVIDENCE WATER

20 YEAR IFR EXPENDITURE PLAN BY 5 YEAR PHASES

Fiscal Years 1996 To 2015

PROJECT DESCRIPTION	TOTAL PROJECT COST	FY 1996 to FY 2000 Budget Amount	FY 2001 to FY 2005 Budget Amount	FY 2006 to FY 2010 Budget Amount	FY 2011 to FY 2015 Budget Amount
RAW WATER SUPPLY	**$11,606,000**	$2,706,000	$3,800,000	$2,400,000	$2,700,000
TREATMENT PLANT FACILITIES	**$31,028,000**	$20,598,000	$8,200,000	$1,230,000	$1,000,000
TRANSMISSION SYSTEM	**$27,181,000**	$1,381,000	$1,000,000	$11,800,000	$13,000,000
DISTRIBUTION SYSTEM	**$119,051,000**	$12,751,000	$31,200,000	$37,100,000	$38,000,000
PUMPING AND STORAGE	**$7,628,000**	$5,928,000	$300,000	$600,000	$800,000
SUPPORT SYSTEMS AND FACILITIES	**$7,721,000**	$921,000	$6,800,000		
TOTAL AMOUNT	**$204,215,000**	**$44,285,000**	**$51,300,000**	**$53,130,000**	**$55,500,000**

1996 INFRASTRUCTURE REPLACEMENT PLAN

HISTORY OF PROVIDENCE WATER

Beginning in 1636, when Providence's founders arrived, the only drinking water available was derived from private wells. But as the population began to swell in the 1800's, the City Council knew the only solution was to locate a reliable water supply.

The early development of a water supply system for the City of Providence met with the same opposition for improvements of this nature as experienced by Boston, New York, Cincinnati, and many other communities. When the construction of a public water works was first submitted to the voters of these cities, they rejected the proposal by a large majority. Providence experienced the same voter trend.

On March 21, 1853, the first committee was appointed by the City Council with instructions to examine and report on a suitable public water supply for the City. The committee reported back to the Council that the most suitable solution would be to take water from the Ten Mile River in East Providence. The City Council authorized the purchase of certain lands and rights necessary to develop the supply, but the voters rejected the proposition. Five different committees made six reports between 1853 and 1868. The final report to the Council emphasized the need for an abundant supply of water for the development and protection of the community.

On February 15, 1869, the question was submitted to the voters for the fourth time, and finally the question of introducing water into the City from the Pawtuxet River was approved.

The original water supply was obtained from the Pawtuxet River at Pettaconsett in the City of Cranston. Construction was started in the spring of 1870 and the first service pipe was opened on December 1, 1871. From 1871 to 1902, water was pumped directly from the river and discharged into the system without any purification treatment. In 1906, the City's first slow sand filter water purification system was constructed.

After the completion of the filters, water was drawn from the river, filtered, and pumped again to an open distribution reservoir called Sockanosset, with a capacity of 55 million gallons. This reservoir was located in what is known today as the Glen Woods Development in the City of Cranston. From this reservoir, the water flowed by gravity to consumers and to the Hope Reservoir in Providence, the second open type, which had a capacity of 76 million gallons. Hope High School is now located on the site of this former reservoir. Pumps located at this storage

basin supplied water to the system and to the old Fruit Hill Reservoir, which had a capacity of 25 million gallons. This open distribution reservoir was located in North Providence on the land now occupied by Our Lady of Fatima Hospital. The special fire service system in the high-valued business district and congested manufacturing district was supplied from the Fruit Hill Reservoir. The three open distribution reservoirs provided a reserve storage of 156 million gallons.

The original water works, although owned and controlled by the City of Providence, operated in the capacity of a metropolitan system. In addition to Providence, it served Cranston, Warwick, Johnston, and North Providence.

As early at 1910, only 39 years after the completion of this supply, it was apparent that with the growth of Providence and the extension of the distribution system in nearby communities, it would not be many years before the flow from Pettaconsett would be inadequate to meet the increased demands. In fact, for a number of years, the consumption during extremely dry weather exceeded the natural flow of the river, and the shortage was made up from water stored in small reservoirs owned by companies operating mills further up the stream.

The constant menace of a possible shortage of water resulted in the appointment by the City Council in January 1913, of a committee to investigate the possibility of developing an increased water supply. Legislation was enacted under which the present supply was built.

The Pawtuxet River served the City of Providence from the time water first reached residents' homes in 1871 to 1926 when the deteriorating quality of water, affected by disposal of residential and industrial pollutants into the area's groundwater system, became a serious problem.

By 1926, health issues and the increasing demand on the Pawtuxet River prompted a milestone Providence City Council decision to develop a new modern water supply system. This consisted of the construction of a large reservoir and treatment plant on the north branch of the Pawtuxet River in the town of Scituate. This system, which today still provides water to most of the State of Rhode Island, consists of the main Scituate Reservoir supply and its five tributary reservoirs.

The main Scituate reservoir was formed by the construction of a dam across the Pawtuxet River at the former village of Kent. The dam, principally of earth, is about 3,200 feet long and 100 feet

high. Water storage in the reservoir began on November 10, 1925. An aqueduct from the dam feeds the nearby treatment plant which was placed in operation on September 30, 1926.

The original treatment plant was state-of-the-art at the time of its construction. The plant was considered to be among the most technologically advanced of its day, and for many years the filtration system was the only plant of its type in New England. As demand continued to grow, the treatment plant underwent major expansions and renovations in the 1940's and again in the '60's. Today, the plant has a maximum treatment capacity of 144 million gallons of water per day and still remains the largest treatment facility in New England.

Once leaving the plant, water is delivered into the system through two major aqueducts. The first, the original 90-inch aqueduct constructed at the same time as the original treatment plant, is 4.5 miles long, including 3.3 miles of tunnel. It terminates at a structure called the siphon chamber, located near Phenix Avenue in Cranston. From there, it splits into two large conduits, 60-inches and 66-inches in diameter, which in turn split into a series of progressively smaller transmission mains supplying the distribution system. The second supplemental aqueduct, constructed in the 1970's, is a 9.5 mile, 78-inch and 102-inch tunnel and aqueduct system which terminates at Budlong Road in Cranston.

Flow from the source of supply is entirely by gravity. At present, the mode of delivery within the distribution system is 75 percent by gravity and 25 percent by pumping. Four storage reservoirs located within the distribution system provide storage for fire protection, emergencies, and for meeting peak demands. Two of these -- the Aqueduct Reservoir in Cranston, with a capacity of 43.4 million gallons, and the Neutaconkanut Reservoir in Johnston, with a capacity of 42.1 million gallons -- are on the gravity feed system. The system's three primary pumping facilities -- the Neutaconkanut, Bath Street, and Fruit Hill pumping stations -- supply water to the other two storage facilities, Longview Reservoir in North Providence, with a capacity of 24.8 million gallons, and the Ridge Road Tank, with a capacity of 3.5 million gallons, located in the Town of Smithfield. Water is delivered to the system's 70,000 retail service connections and 8 wholesale communities through a system of 870 miles of water mains, ranging from 6 to 66 inches in diameter. ❑

THE PROBLEM

• An Aging and Deteriorating System

Providence water system facilities, when built, were state of the art, and in fact were designed to serve well into the future. Even today, after several rounds of national legislation to improve water quality, Providence Water's treatment facilities meet Federal regulations for drinking water.

The transmission and distribution system was well designed, but almost thirty percent (30%) of these facilities date back before the turn of the century. The designers of the system deserve credit and acknowledgment for their farsighted vision. The high quality of the system also became its downfall. For years, the principal management philosophy was to maintain the system, make repairs when needed, and add new facilities to meet expanding needs. This is not enough.

There is no evidence that prior to 1990 there was systematically planned and scheduled capital reinvestment to ensure the continued vitality of the infrastructure. Many of the mechanical components of the treatment plant and the pumping stations are so old that replacement parts are no longer available and have to be specially manufactured when failure occurs. Mains were installed to match development pressures, creating long lines without circulation. Main flushing became a necessity to ensure water quality, and repeated flushing operations led to installation of bleeders (free flow from the end of the main) to ensure pure and clean water.

Most important, there were no provisions for funding of the replacement of deteriorating and aging facilities on a scheduled basis before failure occurred. There is no evidence of formal management proposals for funding of capital reinvestment to counter the claim that there was no political will to do so. In 1989, we see the first evidence of a request for funding for facility improvements in the filing of a rate increase request before the Public Utilities Commission, Docket 1900. This request lacked the concept of capital reinvestment, and simply sought funding to cover debt service for system expansions started in the late 70's and early 80's.

In the 1980's, two Chief Engineers of the Providence Water Supply Board resigned. There was approximately a one year gap without qualified leadership until the position was filled in 1990 after a national recruitment effort. ❑

THE SOLUTION

• What Providence Water Did Since 1990

In 1990, under the direction of the new General Manager and Chief Engineer, Richard O. Rafanovic, P.E., Providence Water changed its management philosophy. New policies were submitted to the Board based on paradigms consistent with modern business practices. Many changes were made, but the need to protect the investment of the existing system became one of the major challenges. The goal was to secure ongoing funding from the rate base to replace deteriorating and aging facilities on a scheduled and ongoing basis.

To accomplish this, the general manager first reorganized the water agency along functional responsibilities and commenced to professionalize its staff. Departmental Directors set out to review and redefine goals and objectives and amend practices and procedures.

The engineers were asked to redefine their needs assessment of the infrastructure and commenced the implementation of a facilities improvement program. A $12 million bond issue which could be supported from the remaining $1.2 million from the funding allocation from Docket 1900, authorized by the PUC in 1989, was proposed and a construction program developed.

Because of jurisdictional constraints and limitations, Providence Water cannot independently and unilaterally secure financing, and it took Providence Water almost four years to work out mechanisms to sell the bond issue. In the interim, Providence Water utilized the unsubscribed $1.2 million on ongoing replacement projects which met the concept of capital reinvestment. Over the four (4) years before the bond issue was sold, Providence Water reinvested approximately $7.8 million into its existing facilities from this revenue source.

In 1992, Richard O. Rafanovic, the General Manager and Chief Engineer, commenced discussions with Lt. Governor Robert Weygand to consider legislation which would support funding of infrastructure replacements for all water systems in the State. Recognizing the importance for having funding from water rates to replace infrastructure, Lt. Governor Weygand supported the effort to prepare legislation for consideration by the State's legislature. The Lt. Governor, Providence Water, representatives of the PUC, the Departments of Health, Administration, Environmental Management, the Rhode Island Water Works Association, and other stakeholders reviewed and supported the proposal. The Lt. Governor submitted the legislation to the legislature for consideration. ❑

• Legislative Development

The Rhode Island State Legislature, in its January 1993 session, enacted the Comprehensive Clean Water Infrastructure Act. The intent of the legislation was for water suppliers to develop long-term infrastructure replacement programs which would ensure the continued integrity of their systems and provide for funding of this program from water rates. Once legislation was introduced, many participated to bring it to successful passage.

Pursuant to the enactment of the legislation, the Rhode Island Department of Health, Division of Drinking Water Quality, promulgated Rules and Regulations governing infrastructure replacements for water suppliers. The Rules and Regulations for Clean Water Infrastructure Plans (R46-15.6-INF) were enacted in January 1995.

On November 29, 1995, Providence Water requested an extension for submittal of its plan. The extension was requested to allow time to adjust the plan to match revenues under consideration by the PUC in Docket 2304 scheduled for final dispensation before the end of December 1996. ❑

THE PLAN

• Goals and Objectives

Providence Water has prepared this report consistent with Rules and Regulations and we have complied with all requirements of the Act except we are not able to implement full funding of the necessary replacement program with this initial report. We are submitting a funding plan which includes stepped-up funding authorized by the Public Utilities Commission in Order #14881, Docket 2304, December 26, 1995. This funding plan is mirrored against a Revenue Allocation Module which was set up to generate full funding under the legislation. Revenue EXHIBIT - 2 depicts funding allocations generated by the Revenue Allocation Module and compares this to the authorized revenues. The authorized revenues include proceeds from the sale of bonds from a $12 million bond issue processed for Providence Water by the Rhode Island Clean Water Finance Agency and the balance of funds from a State Water Resources bond sold in 1988.

In its Docket 2304, the Public Utilities Commission authorized funding for an IFR program from the sale of water in the amount of $4 million commencing January 1, 1996 with a proviso to increase this set-aside by $2 million commencing January 1, 1997 and an additional increase of $2 million on January 1, 1998 for a total of $8 million each calendar year thereafter. This revenue allocation is contingent upon reporting requirements demonstrating Providence Water's ability to comply with the Plan.

Providence Water has segregated its infrastructure into facility categories and developed a Revenue and Expenditure Program to monitor funding allocations and expenditures to meet the objectives of the Act.

The Plan is segregated into four 5-year phases. Phase 1 covers fiscal years 1996 through 2000. The subsequent fifteen (15) years are segregated into three respective phases. The Expenditure Plan has been adjusted to match PUC-authorized funding for the initial five (5) years including unexpended "One-time Funding" sources from previous bond issues.

EXHIBIT - 1 of this report indicates that there is a gap between our Revenue Generation Module and currently authorized revenues. We will be experiencing significant revenue shortages in the last three phases of our plan, fiscal years 2001 through 2015. The projected funding shortage is approximately $103 million over the 20-year life of the plan.

The Plan will be monitored on an ongoing basis. Providence Water believes that we must revisit the concepts and premises upon which the plan was developed by the end of calendar year 1998 and determine what modifications need to be made to the Revenue Generation Module, the authorized funding, the Replacement Expenditure Plan, and the Needs Assessment Study.

The IFR funding plan has been developed in accordance with the following concepts:

- Establish a funding module to ensure that the investment in the system is not eroded.
- The revenues from sale of water for funding of the infrastructure replacement program will be restricted and accounted for separately.
- Allocate revenues within the funding module to facility categories.
- Revenue allocations to each facility category will be developed consistent with the concept of funded depreciation.
- Establish accounting ledgers within each facility category which will track revenues earned in accordance with the funded depreciation concept, funds utilized for the replacement of each respective facility category, and loans and reimbursements from facility account to facility account as needed.
- Maintain a summary of account ledgers to demonstrate long term-equity between facility categories and assure availability of funding when replacements need to be scheduled in any particular facility category.
- Assets such as land, easements, right-of-ways, and other non-depreciable facility categories are not included in the Revenue Generation Module.
- Implementation of the replacement program will be consistent with priorities established by the water supplier in accordance with need and funds earned within each facility category.

- Transfer revenue between facility categories from time to time to assure sufficient funding for an orderly replacement program.

- Establish an inflationary factor to be applied to the Revenue Allocation Module to ensure that adequate funding is available at the time of construction by adjusting the annual funding allocation for inflation.

Since Providence Water has existing facilities dating back to the 1860's and since no sinking funds for replacements have been established prior to 1990, there is a substantial initial deficit of unfunded revenue allocations. Our plan will have to be phased in and adjusted from time to time until we reach a stable revenue and expenditure balance. ❑

• Definitions

ALLOCATED FUNDS

Allocated Funds are funds computed by the Revenue Generation Module and are deemed to be the funds necessary to comply with the Act. At the initial stages, Allocated Funds are considered a target for needed revenue and are to be contrasted from Earned Funds.

BOOK VALUE

Book Value is the total acquisition or procurement cost of a facility or an infrastructure item placed into an asset account of the utility. The Book Value should include all direct costs, departmental and general overhead, and the associated planning, design, construction or acquisition costs, inspection, and project closure costs. Governmental agencies generally have not kept such data and Governmental utilities have frequently understated the acquisition costs by omitting most of the associated costs other than direct labor or direct construction costs. Providence Water has some historical data which does not reflect full value and has been severely understated. Therefore, Providence Water's existing book value is practically meaningless. To remedy this inequity, Providence Water is establishing an Equivalent Book Value concept for the Infrastructure Replacement Program.

CAPITAL IMPROVEMENTS - NEW CONSTRUCTION

Capital Improvements - New Construction is defined as the construction of facilities required to expand into undeveloped territories for future service, to meet significantly increased regulatory requirements, or to match capacity expansions as a result of a combination of the aforenoted conditions. Capital Improvements are specifically segregated from replacements as defined herein.

CURRENT REPLACEMENT VALUE

Current Replacement Value is a combination of either the original cost compounded from the date of installation by inflation or, when original cost is not available, the current replacement cost as determined by the utility on the basis of most recent construction history and/or engineering knowledge. For the purpose of this calculation, Providence Water chose the average historical inflation experienced nationally since the turn of the century. The average historical inflation is deemed to be 3 1/2% per year.

CYCLICAL FACTOR (See *Revenue Allocation Discount*)

EARNED FUNDS

Earned Funds represent actual revenue collected from rates consistent with funding authorized by the Public Utilities Commission in any given year. Earned Funds represent the actual revenue accrued to each facility category which subsequently becomes available for expenditure.

EQUIVALENT BOOK VALUE

Equivalent Book Value is the term established to assign a value to be posted in Providence Water's asset accounts. The Equivalent Book Value is deemed to be current replacement costs depreciated by the age of existing facilities. On a forward-going basis, Providence Water will add individual infrastructure components by category and subcategory consistent with current total costs and depreciate these based on Providence Water's Standard Life.

EXISTING FACILITY REVENUE ALLOCATION COMPONENT

The *Existing Facility Revenue Allocation Component* is based on a straight-line depreciation formula for the current replacement costs of the respective facility based on Providence Water's Practical Remaining Life.

INCH - UNIT COMPONENT

Inch-Unit Component is a method of averaging different sizes/diameters of water system infrastructure categories into a common denominator -- for example, different sizes in mains or different sizes of valves. A linear foot of 12-inch main would be 12 inch-feet, a linear foot of 24-inch main would be 24 inch-feet; correspondingly, a 24-inch valve would be a 24-inch unit of a valve. This methodology allows us to normalize the different diameter sizes of mains to a common cost per inch-foot and the different valve sizes to a common inch unit for valves. It also facilitates revenue projections for facility groupings where multiple diameters are used.

INFLATION FACTOR

Inflation Factor is a multiplication component utilized in adjusting the current value of a facility or facility component to reflect the inflationary impact on the cost of construction. The inflation

factor for utility and heavy construction in the New England region can be found in the Engineering News Record which is published periodically each year.

MAINTENANCE

Maintenance is defined as activities, services, and expenditures necessary to operate the facilities on a daily basis. Examples of maintenance include changing oil, lubricating joints, turning valves, painting, tuning up devices, engines, or computers, and activities related to the Maintenance of facilities.

NEW FACILITY REVENUE ALLOCATION COMPONENT

The *New Facility Revenue Allocation Component* is based on a straight-line depreciation formula for the total cost of the new facility based on Providence Water's Standard Life.

OPERATIONS

Operations are defined as activities, services, and expenditures necessary to do the daily work to keep the system going. Examples of Operations include scheduling, servicing, investigating, correspondence, reading of meters and gauges, fueling, monitoring and processing, sampling, testing, and related activities.

PROVIDENCE WATER PRACTICAL REMAINING LIFE

Practical Remaining Life is the remaining life of the particular facility component based on a combination of industry standards or local experience of an existing facility. Not incorporated in this Life are changes in regulatory requirements or obsolescence. Obsolete facilities may have to be replaced at an earlier time than the Practical Remaining Life if it is found that the cost of operation could be greatly enhanced. Therefore, it would be erroneous to combine the existing age of the facility with the remaining economic life and opine that the sum of those two represents the Standard Life of such a facility.

PROVIDENCE WATER STANDARD LIFE

Standard Life is the projected probable life of a particular facility component and is generally derived from any or a combination of industry practices, Federal IRS regulations, PUC standards for investor-owned regulated utilities, or criteria set by regulations of the agency administering

the program. Generally, the Standard Life assigned by the water supplier to a particular facility is deemed to be the best value available.

REPAIRS

Repairs is defined as activities, services, and expenditures necessary to restore components of a facility that have broken due to age or deterioration. Examples of Repairs include broken shafts, fire hydrants, valves, services, water mains, pumps, treatment facilities, torn fencing, automotive components of vehicles, and the breakdown of facility components or equipment necessary to operate the water system, other than the total replacement of the facility.

REPLACEMENT COST

Replacement Cost is the cost of planning, design, acquisition, construction, installation, and the appropriate inspection, oversight, and records development of a facility required to replace an existing facility. The Replacement Cost is used in the allocation model to establish the equivalent book value for existing facilities and the new facilities book value for facilities replaced under the program.

REPLACEMENTS

Replacements are defined as activities, services, and expenditures necessary to replace obsolete and/or deteriorated facilities. A facility is defined to be obsolete when it no longer can meet the requirements of the land uses it is intended to serve. An example of this could include the change in land use triggering a more intense water supply requirement, or when existing size is no longer a standard size for a particular use, i.e., a 2-inch main is no longer current practice when the facility needs to be reconstructed and has to be replaced with a larger size. Deterioration is defined as the total failure of a facility or when repeated failures become a detriment to the reliable delivery of service.

REVENUE ALLOCATION DISCOUNT (*Cyclical Factor*)

Revenue Allocation Discount is a methodology to establish a set-aside for upgrading facilities which probably would never be replaced in entirety. The Gainer Dam, holding Providence Water's entire surface water supply, will not be replaced and is deemed to have a standard economic life of 150 years. However, it is necessary to accumulate funds for major upgrading and reconstruction periodically. A Revenue Allocation Discount of 5% would generate sufficient

funding for major repairs about every 20 years. Providence Water has applied this concept to most of its facilities other than the transmission and distribution components of the system.

STRAIGHT-LINE DEPRECIATION

Straight-Line Depreciation is an accounting methodology to decrease the book value of a facility (less its salvage value) over the expected life of that facility at a constant rate. The initial cost of the facility (book value) is decreased annually by the value of one year's depreciation for that facility.

UNIT COST

Unit Cost is the cost of a unit which makes up the total facility category component. Examples of this include one of the 18 filter beds at the Treatment Plant, one of the thousands of fire hydrants in the system, etc. ❑

Revenue Requirements

• Overview of Revenue Requirements

Consistent with the objectives and premises defined herein, Providence Water has developed a Sources and Uses of Funds Plan based on a targeted annual funding requirement of approximately $14 million per year. The current authorized funding is $8 million per year commencing in1998. There is not sufficient authorized revenue on hand to continue the program without first receiving additional funding authorizations. EXHIBIT - 1 lists the funding and expenditure projections, (the Sources and Uses of Funds) in four 5-year phases. Providence Water will be able to commence the first phase by combining "One-time Funding" from two separate bond issues with PUC-authorized funding. Thereafter, or before the end of the first phase, a review will be required and additional funding will have to be addressed.

To jump-start the program, Providence Water allocated $8.5 million of our $12 million bond issue sold in 1994 with the help of the Rhode Island Clean Water Finance Agency (CWFA). Additionally, we have allocated the balance of the SWRB bond, $2.4 million, for the replacement of the Bath Street and Neutaconkanut pumping stations. This allocation was done pursuant to our analysis of the projects funded under these bond issues. We determined that most of the projects within these bond issues match eligibility of the IFR program. Therefore, unexpended funds from these bond issues were assigned to the IFR program and construction is well under way. We have requested a stepped-up method for IFR funding over a five-year period in our General Rate Relief Filing, Docket 2304, submitted to the PUC in March of 1995. Our request was $4 million for 1996 and then stepping up to $13.5 million by 2000.

In Docket 2304, the PUC granted additional revenue in a stepped-up version starting with $4 million in 1996 and increasing to $8 million in 1998, and staying at that level thereafter. EXHIBIT - 2 depicts the authorized revenue phasing and includes our revenue projection leading to compliance with the Act over the 20-year period of the plan.

While our average annual projected revenue requirements are targeted at $14 million, our average authorized funding for the 20-year period is $8.9 million, leaving a revenue shortage of about $5 million each year. EXHIBIT-1, Sources and Uses of Funds, highlights this analysis.

Our revenue projections take into account funding now designated for debt service to become available when existing bonds are paid off. We project that $0.8 million will become available in 2002 when the 1971 General Obligation Bond is paid off, an additional $1.1 million in 2012 when the State Water Resources Lease is satisfied, and $1.2 million in 2015 when the Clean Water Finance Agency's $12 million bond is paid off. These revenues are already included in our projections and are reflected in EXHIBITS 2 and 3.

Nevertheless, on the average, an additional $5 to $6 million will be required each year. EXHIBIT-3 is a table which lists additional funding requests, and we project an additional $3 million in 2000, $2 million in 2006, and $1 million in 2011.

Providence Water believes that our IFR Plan is a living document and intends to make amendments to this plan to match changing Federal regulations and changing field conditions. Our replacement plan is based on the best information available at this time, and our schedule to propose projected facility replacements is consistent with deterioration or obsolescence as we know conditions to be now. Should there be changes in conditions, Providence Water will amend its Plan accordingly.

Providence Water will revisit funding and expenditure requirements by the end of 1998. ❑

EXHIBIT - 1

Sources and Uses of Funds

5-Year Phases

Fiscal Years 1996 - 2015

EXHIBIT - 1

Sources and Uses of Funds

IFR Funding & Expenditure Projections

5 - Year Phases for Fiscal Years 1996 - 2015

	Phase 1	Phase 2	Phase 3	Phase 4	Total
Allocation Module Summary (Needed $)	67,896,013	70,789,064	70,789,064	70,789,064	$280,263,204
PW's Projected Funding and Requests	43,914,000	58,120,000	68,900,000	79,300,000	$250,234,000
Funding Shortage based on IFR Plan	(23,982,013)	(12,669,064)	(1,889,064)	8,510,936	($30,029,204)
Authorized Funding	40,914,000	43,120,000	43,900,000	49,300,000	$177,234,000
Partial Projected IFR Construction	44,285,000	51,300,000	53,130,000	55,500,000	$204,215,000
1996 IFR Implementation Deferred *(Based on Authorized Funding less Partial Construction)*	(3,371,000)	(8,180,000)	(9,230,000)	(6,200,000)	($26,981,000)
IFR Implementation Deferred *(Based on Alloc. Module Needs less Partial Construction)*	(23,611,013)	(19,489,064)	(17,659,064)	(15,289,064)	($76,048,204)
*Projected Accumulated Program Deficit ** *(To be reviewed before 1999)* ** Alloc. Plan Module less Authorized Funding*	26,982,013	27,669,064	26,889,064	21,489,064	$103,029,204
In Million Dollars					
Average Funding Need per Year	13.58	14.16	14.16	14.16	14.01
Average Authorized Funding per Year	8.18	8.62	8.78	9.86	8.86
Average Partial IFR Construction per Year	8.86	10.26	10.63	11.10	10.21
Average Annual Funding Shortage ** Alloc. Authorized Funding less Funding Need*	(5.40)	(5.53)	(5.38)	(4.30)	(5.15)

EXHIBIT - 2

Graph of IFR Funding Projections

EXHIBIT - 2

IFR Funding Projections

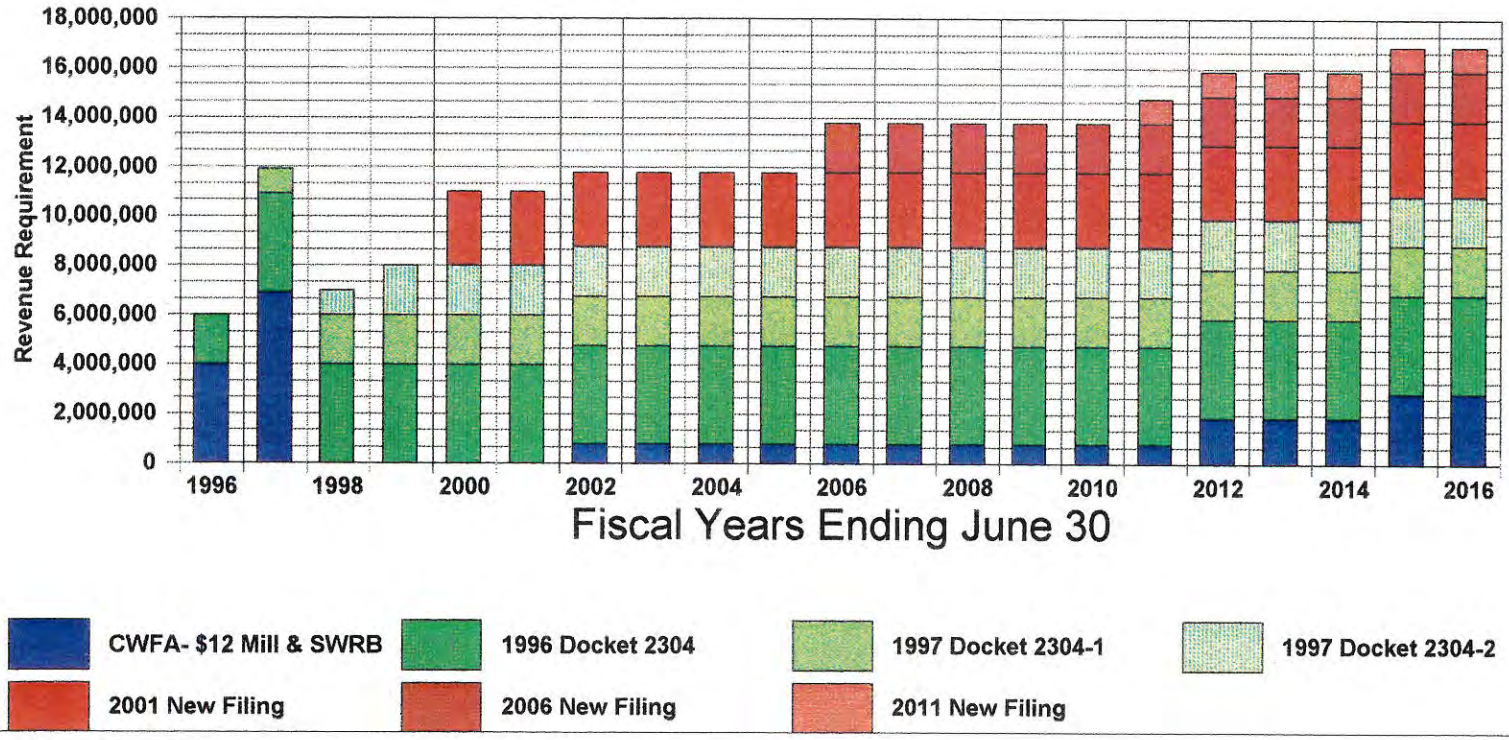


EXHIBIT - 3

Table of IFR Funding Projections

Fiscal Years 1996-2015

EXHIBIT - 3

IFR Funding Projections

FY's Ending June 30, 1996 - 2015

Fiscal Years (7/1-6/30)	1996	1997	1998	1999	2000	2001	2002
2011 New Filing	0	0	0	0	0	0	0
2006 New Filing	0	0	0	0	0	0	0
2001 New Filing	0	0	0	0	3,000,000	3,000,000	3,000,000
1997 Docket 2304-2	0	0	1,000,000	2,000,000	2,000,000	2,000,000	2,000,000
1997 Docket 2304-1	0	1,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
1996 Docket 2304	2,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000
CWFA- $12 Mill & SWRB	4,000,000	6,914,000	0	0	0	0	780,000
Projected Funding and Requests:	**6,000,000**	**11,914,000**	**7,000,000**	**8,000,000**	**11,000,000**	**11,000,000**	**11,780,000**
Phase 1 Total: 1996-2000					**43,914,000**		
Phase 2 Total: 2001-2005							
Phase 3 Total: 2006-2010							
Phase 4 Total: 2011-2015							
Aggregate Funding and Requests:							
Authorized Funding:	**6,000,000**	**11,914,000**	**7,000,000**	**8,000,000**	**8,000,000**	**8,000,000**	**8,780,000**
Projected Requests:	0	0	0	0	3,000,000	3,000,000	3,000,000
Authorization Shortages per Phase:							
Phase 1 Total: 1996-2000					**3,000,000**		
Phase 2 Total: 2001-2005							
Phase 3 Total: 2006-2010							
Phase 4 Total: 2011-2015							
Aggregate Authorization Shortage:							

1971 GO Bond
Debt Service
Comes on line

EXHIBIT - 3

IFR Funding Projections

FY's Ending June 30, 1996 - 2015

Fiscal Years (7/1-6/30)	2003	2004	2005	2006	2007	2008	2009
2011 New Filing	0	0	0	0	0	0	0
2006 New Filing	0	0	0	2,000,000	2,000,000	2,000,000	2,000,000
2001 New Filing	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
1997 Docket 2304-2	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
1997 Docket 2304-1	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
1996 Docket 2304	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000
CWFA- $12 Mill & SWRB	780,000	780,000	780,000	780,000	780,000	780,000	780,000
Projected Funding and Requests:	**11,780,000**	**11,780,000**	**11,780,000**	**13,780,000**	**13,780,000**	**13,780,000**	**13,780,000**
Phase 1 Total: 1996-2000							
Phase 2 Total: 2001-2005			**58,120,000**				
Phase 3 Total: 2006-2010							
Phase 4 Total: 2011-2015							
Aggregate Funding and Requests:							
Authorized Funding:	**8,780,000**	**8,780,000**	**8,780,000**	**8,780,000**	**8,780,000**	**8,780,000**	**8,780,000**
Projected Requests:	3,000,000	3,000,000	3,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Authorization Shortages per Phase:							
Phase 1 Total: 1996-2000							
Phase 2 Total: 2001-2005			**15,000,000**				
Phase 3 Total: 2006-2010							
Phase 4 Total: 2011-2015							
Aggregate Authorization Shortage:							

EXHIBIT - 3

IFR Funding Projections

FY's Ending June 30, 1996 - 2015

Fiscal Years (7/1-6/30)	2010	2011	2012	2013	2014	2015
2011 New Filing	0	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
2006 New Filing	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
2001 New Filing	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
1997 Docket 2304-2	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
1997 Docket 2304-1	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
1996 Docket 2304	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000
CWFA- $12 Mill & SWRB	780,000	780,000	1,880,000	1,880,000	1,880,000	2,880,000
Projected Funding and Requests:	**13,780,000**	**14,780,000**	**15,880,000**	**15,880,000**	**15,880,000**	**16,880,000**
Phase 1 Total: 1996-2000						
Phase 2 Total: 2001-2005						
Phase 3 Total: 2006-2010	**68,900,000**					
Phase 4 Total: 2011-2015						**79,300,000**
Aggregate Funding and Requests:						**$250,234,000**
Authorized Funding:	**8,780,000**	**8,780,000**	**9,880,000**	**9,880,000**	**9,880,000**	**10,880,000**
Projected Requests:	5,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
Authorization Shortages per Phase:						
Phase 1 Total: 1996-2000						
Phase 2 Total: 2001-2005						
Phase 3 Total: 2006-2010	**25,000,000**					
Phase 4 Total: 2011-2015						**30,000,000**
Aggregate Authorization Shortage:						**$73,000,000**

SWRB Lease Debt Service Comes on line

One-Time Use of Reserve from CWFA Bond

Revenue Generation Plan

• Description of Revenue Generation Module

The Revenue Generation Module was developed by Richard O. Rafanovic with support from staff members Paul Gadoury, Steven Santaniello, and Paul Titzmann. The Revenue Generation Module is an interactive computer program which draws on various data base and expenditure plans developed by Providence Water managers and engineers. It then develops Current Replacement Values for existing facility categories, establishes annual funding allocations based on the concept of straight-line depreciation, and sets these out as funding targets for each year. The Module has provisions to adjust annual revenue set-asides by inflation and it subtracts and adds facilities removed and/or added to the system in successive years.

Providence Water will exclude land and other holdings not subject to replacement from this Module. The Gainer Dam and reservoirs and other "Long Life" facilities, such as pumping stations and major structures, will be treated differently than the transmission and distribution system. We will allocate revenues for such "Long Life" facilities in a manner to assure cyclical "C" upgrading and repair. To accomplish this, we will apply a multiplier of 5% to the annual depreciation of such facility categories which, in essence, will reduce the sinking fund (revenue allocations) for such categories to that percentage. The net effect of this cyclical factor is that we will accumulate sufficient funds to make upgrades and arrange for substantial work once every 20 years regardless of the economic life of that facility. This will assure that this facility will, for all practical purposes, have an infinite useful life.

The Module details the first five (5) years by fiscal year and carries the remaining fifteen (15) years forward. We are including two percent (2%) inflation in all our revenue and expenditure projection in the plan as it is submitted now. The inflation factor can be adjusted each and every year as needed.

Funding Allocation Summary of Facility Groups, EXHIBIT - 4, is a three (3) page summary of the major facility groups and draws from other computer spreadsheets which develop the program and synthesize revenue requirements, revenue request, authorized funding, and planned expenditures into an easily readable policy analysis document.

Annual Funding Allocation by Facility Category, EXHIBIT - 5, is a set of 6 pages and picks from the Allocation Facility by Category spreadsheets and summarizes the revenue allocation requirements accordingly. This serves as a planning and scheduling tool to financial planners and engineers.

Funding Allocation Detail by Facility Category, EXHIBIT - 6, is a 28-page set of tables with a guide of the page arrangement. The pages are divided into seven (7) sections with four (4) pages per section. The pages go from 1 through 4 from the top to the bottom of the spreadsheet on which these pages draw, and the sections go from 1 to 7 across the spreadsheet. The Exhibit is the pictorial presentation of the spreadsheet which picks from a number of different spreadsheets and data bases relevant data for the computation of replacement values and annual (depreciation) funding requirements for each facility category. This data base details the additions and removals of facilities and computes the revenue requirements needed to keep the infrastructure from deteriorating. It is the working tool on which the plan depends to balance sources and uses of funds by facility category and in the aggregate.

Additionally, Providence Water will set up internal accounts **(Ledgers)** for each facility category, **EXHIBITS 8, 9, & 10** are facsimiles of this, **EXHIBIT - 11** is an example of such a summary. We will track allocations of revenue (targeted revenue allocations [funded depreciation]) vs. actual revenues received and we will debit fund withdrawals for needed replacements, record loans and repayments between facility categories in these ledgers. These ledgers will thus list dollar amounts anticipated to be earned, dollars actually earned, funds loaned to other facility categories, funds paid back from other facility categories, and money actually expended for replacements. The summary of the ledgers, EXHIBIT - 11, demonstrates how the ledgers will integrate all transactions and how we will track long-term equity between categories as well as within each facility category.

Senior management assessed our facilities consistent with the definitions within the regulations and developed a 20-Year Expenditure Plan. The first five (5) years focus on replacement of facilities necessary to continue to deliver a reliable and healthy water supply to all our customers consistent with drinking water standards as they exist now. The first 5-year increment includes specific projects by major categories. The remaining 15 years are segregated into three 5-year increments. The replacement of facilities is targeted in this 15-year period by major facility categories.

We have loaded the Revenue Generation Module by entering the first phase of replacements for fiscal years 1996 through 2000 into the spreadsheet. This will delete existing facilities as scheduled and list the replacements at their new cost. The Revenue Generation Module then reconciles the deletions and additions and adjusts the required revenue allocation (depreciation) accordingly. This process ensures that the funding needed to meet the intent of the Act is always updated.

We have not entered projected expenditures (replacements) for the remaining three phases, fiscal years 2001 through 2015, into the Module. It is not realistic to identify the expenditure by individual units within categories. This will be done as we update the Module and it will be our plan to maintain a sliding 5-year program.

Each year, after the closing of the books, we will enter actual expenditures for replacements consistent with full cost of construction. The actual cost will replace the planned and scheduled cost. This will therefore adjust the annual revenue allocations (depreciation) for the newly installed facilities into the future and keep the program current. ❑

EXHIBIT - 4

Funding Allocation Summary of Facility Groups

EXHIBIT - 4 is a 3-page summary of revenue requirements by major facility category. It targets the dollar amounts needed each year to ensure that the system is kept current. It is separate from the actual revenues provided from the sale of water.

Presently, this element of the program will aid financial planners to determine revenue shortfalls within major facility categories and conversely it will act as a guide to engineers to identify the need to postpone facility replacement projects. It facilitates the macro approach at the policy-making level.

EXHIBIT - 4

Funding Allocation Summary of Facility Groups

Providence Water

Ending June 30, 1995

PRINCIPAL COMPONENTS BY CATEGORY	Estimated Total Replacement Cost	Equivalent Book Value Repl. Cost less Depr. EBV	Summary of Replacement Allocation Earned during Respective Fiscal Year, adjusted for Inflation @ Percentage Shown					
			2.000% 1996	2.000% 1997	2.000% 1998	2.000% 1999	2.000% 2000	0.000% 2001
RAW WATER SUPPLY								
SUB-TOTAL	$84,519,000	$42,392,975	$162,416	$186,082	$203,633	$246,060	$269,477	$269,477
TREATMENT PLANT FACILITIES								
SUB-TOTAL	$65,400,000	$16,101,454	$440,078	$692,955	$845,909	$995,554	$1,153,705	$1,153,705
TRANSMISSION SYSTEM								
SUB-TOTAL	$134,561,600	$68,956,826	$1,740,178	$1,774,982	$1,801,625	$1,825,086	$1,847,521	$1,847,521
DISTRIBUTION SYSTEM								
SUB-TOTAL	$340,700,732	$131,717,127	$10,454,864	$10,396,909	$10,334,019	$10,453,207	$10,575,995	$10,575,995
PUMPING AND STORAGE								
SUB-TOTAL	$47,750,000	$22,923,494	$255,122	$260,225	$265,429	$270,738	$276,153	$276,153
BUILDING AND SYSTEM SUPPORT								
SUB-TOTAL	$7,000,000	$88,276,768	$32,300	$32,946	$33,605	$34,277	$34,963	$34,963
Total	**$679,931,332**	**$370,368,644**	**$13,084,959**	**$13,344,099**	**$13,484,221**	**$13,824,922**	**$14,157,813**	**$14,157,813**
Allocated Funding:								
Docket 2304			2,000,000	5,000,000	7,000,000	8,000,000	8,000,000	8,000,000
Future Filings							3,000,000	3,000,000
CWFA & SWRB Bonds			4,000,000	6,914,000				
Funding Available to Support IFR:			6,000,000	11,914,000	7,000,000	8,000,000	11,000,000	11,000,000
Projected Need:			(7,084,959)	(1,430,099)	(6,484,221)	(5,824,922)	(3,157,813)	(3,157,813)

EXHIBIT - 4
Funding Allocation Summary of Facility Groups
Providence Water
Ending June 30,

PRINCIPAL COMPONENTS BY CATEGORY	0.000% 2002	0.000% 2003	0.000% 2004	0.000% 2005	0.000% 2006	0.000% 2007	0.000% 2008	0.000% 2009
RAW WATER SUPPLY								
SUB-TOTAL	$269,477	$269,477	$269,477	$269,477	$269,477	$269,477	$269,477	$269,477
TREATMENT PLANT FACILITIES								
SUB-TOTAL	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705
TRANSMISSION SYSTEM								
SUB-TOTAL	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521
DISTRIBUTION SYSTEM								
SUB-TOTAL	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995
PUMPING AND STORAGE								
SUB-TOTAL	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153
BUILDING AND SYSTEM SUPPORT								
SUB-TOTAL	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963
Total	**$14,157,813**	**$14,157,813**	**$14,157,813**	**$14,157,813**	**$14,157,813**	**$14,157,813**	**$14,157,813**	**$14,157,813**
Allocated Funding:								
Docket 2304	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000
Future Filings	3,000,000	3,000,000	3,000,000	3,000,000	5,000,000	5,000,000	5,000,000	5,000,000
CWFA & SWRB Bonds	780,000	780,000	780,000	780,000	780,000	780,000	780,000	780,000
Funding Available to Support IFR:	11,780,000	11,780,000	11,780,000	11,780,000	13,780,000	13,780,000	13,780,000	13,780,000
Projected Need:	(2,377,813)	(2,377,813)	(2,377,813)	(2,377,813)	(377,813)	(377,813)	(377,813)	(377,813)

After Pay-Off 1971 GO Bond Debt Service payment available for IFR

EXHIBIT - 4

Funding Allocation Summary of Facility Groups

Providence Water

Ending June 30,

PRINCIPAL COMPONENTS BY CATEGORY	0.000% 2010	0.000% 2011	0.000% 2012	0.000% 2013	0.000% 2014	0.000% 2015	Total Allocation Per Category for 20 Years
RAW WATER SUPPLY							
SUB-TOTAL	$269,477	$269,477	$269,477	$269,477	$269,477	$269,477	$5,109,815
TREATMENT PLANT FACILITIES							
SUB-TOTAL	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$21,433,780
TRANSMISSION SYSTEM							
SUB-TOTAL	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$36,702,205
DISTRIBUTION SYSTEM							
SUB-TOTAL	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$210,854,918
PUMPING AND STORAGE							
SUB-TOTAL	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$5,469,957
BUILDING AND SYSTEM SUPPORT							
SUB-TOTAL	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$692,529
Total	**$14,157,813**	**$14,157,813**	**$14,157,813**	**$14,157,813**	**$14,157,813**	**$14,157,813**	**$280,263,204**
Allocated Funding:							
Docket 2304	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	**$150,000,000**
Future Filings	5,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	**$73,000,000**
CWFA & SWRB Bonds	780,000	780,000	1,880,000	1,880,000	1,880,000	2,880,000	**$27,234,000**
Funding Available to Support IFR:	13,780,000	14,780,000	15,880,000	15,880,000	15,880,000	16,880,000	**$250,234,000**
Projected Need:	(377,813)	622,187	1,722,187	1,722,187	1,722,187	2,722,187	(30,029,204)

After Pay-Off SWRB Lease, Debt Service Payment available for IFR

After $12 mill CWFA Bond Pay-Off Reserve plus Revenue available

EXHIBIT - 5

Annual Funding Allocation by Facility Category

EXHIBIT - 5 is a 6-page summary of the annual revenue requirements by each facility category. It targets the dollar amounts needed each year to ensure that the system is kept current. It is separate from the actual revenues provided from the sale of water. It has been developed and draws data from the Funding Allocation Detail Module which is depicted on EXHIBIT - 6.

The annual summary facilitates the tracking of revenue requirements for each facility category. It will aid financial planners to determine revenue shortfalls and conversely it will act as a guide to engineers to identify the need to postpone facility replacements within each respective category.

EXHIBIT - 5

Page Guide for the Three "Sections" of Annual Funding by Facility Category

Section 1	Section 2	Section 3
From		To
Description - FY 2000	FY 2001 - FY 2012	FY 2013 - FY 2015
30" Transm. Valve Pg - 1 -	Pg - 3 -	Pg - 5 -
36" Transm. Valve		
Buildings Pg - 2 -	Pg - 4 -	Pg - 6 -

EXHIBIT - 5

Annual Funding Allocation by Facility Category
Providence Water
Ending June 30, 1995

Section 1

PRINCIPAL COMPONENTS BY CATEGORY	Area of Responsibility	Partial Alloc.. to Keep Facility Current	Estimated Total Replacement Cost	Salv. Rate in %	New Facilities Standard Econ. Life (Yrs) SEL	Exist. Facility.. Practical Remaining Life PRL	Equivalent Book Value Repl. Cost less Depr. EBV	Summary of Replacement Allocation Earned during Respective Fiscal Year, adjusted for Inflation @ Percentage Shown 2.000% 1996	2.000% 1997	2.000% 1998	2.000% 1999	2.000% 2000
RAW WATER SUPPLY		**5.00%**										
Scituate Reservoir / Gainer Dam	Water Resources	C	36,767,000	1.000%	150	100	21,885,119	18,634	23,382	25,005	26,682	28,419
Regulating Reservoir / Dam	Water Resources	C	714,000	1.000%	100	75	354,636	497	1,517	1,813	2,121	2,442
Barden Reservoir / Dam	Water Resources	C	7,000,000	1.000%	100	75	3,645,833	4,720	5,320	5,559	5,806	6,061
Moswansicut Reservoir / Dam	Water Resources	C	9,000,000	1.000%	100	75	4,500,000	6,067	6,693	6,960	7,235	7,519
Ponaganset Reservoir / Dam	Water Resources	C	7,000,000	1.000%	100	75	3,431,373	4,729	5,833	6,216	6,612	7,022
Westconnaug Reservoir / Dam	Water Resources	C	3,500,000	1.000%	100	75	1,810,345	2,364	2,916	3,108	3,306	3,511
Reservoir Roads and Fences	Water Resources	C	11,400,000	0.000%	30	20	3,040,000	30,906	33,700	35,836	52,159	69,522
Gainer Dam Gate House	Water Quality	C	553,000	0.000%	100	50	234,322	564	575	587	599	611
60 inch Conduits	Water Quality	C	1,300,000	0.000%	100	50	546,218	3,876	4,056	4,137	4,219	4,304
90 inch Steel Aqueduct	Water Quality	C	3,000,000	0.000%	100	50	1,260,504	3,060	3,121	3,184	3,247	3,312
Raw Water Booster Pump Station	Water Quality	C	3,285,000	1.000%	50	30	1,670,339	7,952	10,424	20,912	22,481	22,931
Electrical Supply System for Treatment Plant	Water Quality	C	1,000,000	1.000%	25	1	14,286	79,047	88,545	90,316	111,591	113,823
SUB-TOTAL			**$84,519,000**				42,392,975	**$162,416**	**$186,082**	**$203,633**	**$246,060**	**$269,477**
TREATMENT PLANT FACILITIES												
Treatment Plant Building / Infrastructure	Water Quality	C	30,000,000	0.000%	75	25	10,000,000	63,199	75,795	78,739	86,278	114,986
Influent Conduit / Structures	Water Quality	C	5,000,000	0.000%	75	30	1,515,152	8,500	9,187	11,615	11,847	12,084
Aeration Basin	Water Quality	C	550,000	0.000%	75	5	37,162	5,610	5,722	6,476	6,605	6,737
Sedimentation Basins	Water Quality	C	5,000,000	0.000%	75	20	1,315,789	12,750	13,005	13,265	13,530	13,801
Filters	Water Quality	C	10,000,000	0.000%	25	5	1,000,000	108,406	144,030	247,238	348,470	429,124
Venturi Tube Effluent Meters - 12 inch diameter	Water Quality	C	500,000	1.000%	30	10	76,923	2,525	2,575	2,626	2,679	2,733
Clearwell	Water Quality	C	1,000,000	0.000%	75	50	476,190	1,020	1,040	6,284	11,740	11,975
Wash Water System	Water Quality	C	700,000	1.000%	40	20	254,545	1,767	2,535	2,585	2,637	4,381
Service Water System	Water Quality	C	250,000	1.000%	40	20	90,909	631	644	1,162	1,185	1,208
Ferric Storage/Transfer/Feed System	Water Quality	C	600,000	1.000%	20	5	75,000	32,819	33,475	34,144	34,827	35,524
Lime Storage/Transfer/Feed System	Water Quality	C	1,500,000	1.000%	20	5	187,500	16,712	32,951	34,569	35,260	35,966
Chlorine Storage/Transfer/Feed System	Water Quality	C	500,000	1.000%	20	5	62,500	8,078	28,436	32,135	32,778	33,433
Fluoride Storage/Transfer/Feed System	Water Quality	C	300,000	1.000%	20	5	37,500	3,029	3,090	3,152	3,215	3,279
Sludge Handling / Disposal System	Water Quality	C	7,000,000	1.000%	30	10	886,076	35,343	50,557	76,208	102,876	140,815
Process Control / Data Acquisition System	Water Quality	C	2,500,000	1.000%	15	1	86,207	139,689	289,914	295,712	301,626	307,659
SUB-TOTAL			**$65,400,000**				16,101,454	**$440,078**	**$692,955**	**$845,909**	**$995,554**	**$1,153,705**
TRANSMISSION SYSTEM												
90 Scituate Tunnel and Aqueduct	Water Quality	C	36,213,000	0.000%	100	50	15,088,750	36,937	37,676	38,430	39,198	39,982
Supplemental Tunnel and Aqueduct	Water Quality	C	33,390,000	0.000%	100	50	22,260,000	34,058	34,739	35,434	36,142	36,865
Transmission Mains (Units in inch-feet)				*0.000%*	*100*	*50*	29,382,681	***1,378,635***	***1,406,208***	***1,434,332***	***1,463,019***	***1,492,279***
16	inch		11,490,960				0					
20	inch		1,512,900				0					
24	inch		10,765,250				0					
30	inch		9,902,535				0					
36	inch		1,661,055				0					
42	inch		5,100,200				0					
48	inch		4,255,750				0					
60	inch		9,694,250				0					
66	inch		5,491,200				0					
Transmission Valves				*0.000%*	*75*	*25*	2,225,395	***290,548***	***296,359***	***293,429***	***286,727***	***278,394***
16	inch		1,467,000				0					
20	inch		247,500				0					
24	inch		904,000				0					
30	inch		855,000				0					

EXHIBIT - 5

Annual Funding Allocation by Facility Category
Providence Water
Ending June 30, 1995

Section 1

PRINCIPAL COMPONENTS BY CATEGORY	Area of Responsibility	Partial Alloc.. to Keep Facility Current	Estimated Total Replacement Cost	Salv. Rate in %	New Facilities Standard Econ. Life (Yrs) SEL	Exist. Facility.. Practical Remaining Life PRL	Equivalent Book Value Repl. Cost less Depr. EBV	Summary of Replacement Allocation Earned during Respective Fiscal Year, adjusted for Inflation @ Percentage Shown				
								2.000%	2.000%	2.000%	2.000%	2.000%
								1996	1997	1998	1999	2000
36 inch			391,000				0					
42 inch			450,000				0					
48 inch			490,000				0					
60 inch			280,000				0					
66 inch			0				0					
SUB-TOTAL			**$134,561,600**				68,956,826	**$1,740,178**	**$1,774,982**	**$1,801,625**	**$1,825,086**	**$1,847,521**
DISTRIBUTION SYSTEM												
Distribution Mains (Units in inch-feet)				*0.000%*	*75*	*50*	85,668,945	*3,670,058*	*3,743,200*	*3,817,888*	*0*	*3,972,176*
6 inch			110,792,655				0					
8 inch			60,247,600				0					
10 inch			469,535				0					
12 inch			25,888,380				0					
Distribution Valves				*0.000%*	*75*	*25*	7,469,602	*849,312*	*862,351*	*875,718*	*885,610*	*895,835*
6 inch			13,147,200				0					
8 inch			6,276,000				0					
10 inch			33,600				0					
12 inch			2,959,600				0					
Services	T & D	0	102,859,500	0.000%	75	25	32,143,594	4,191,921	4,268,552	4,332,611	4,398,265	4,465,545
Hydrants	T & D	0	11,580,800	0.000%	50	25	5,790,400	471,436	479,824	488,421	497,231	506,237
Meters	Finance	0	6,445,862	0.000%	15	5	644,586	1,272,138	1,042,983	819,380	777,900	736,202
SUB-TOTAL			**$340,700,732**				131,717,127	**$10,454,864**	**$10,396,909**	**$10,334,019**	**$10,453,207**	**$10,575,995**
PUMPING AND STORAGE												
Aqueduct Reservoir and Gatehouse	Water Quality	C	15,000,000	1.000%	75	50	9,036,145	15,147	15,450	15,759	16,074	16,396
Neutaconkanut Reservoir and Gatehouse	Water Quality	C	15,000,000	1.000%	75	40	5,607,477	18,934	19,312	19,699	20,093	20,494
Longview Reservoir and Gatehouse	Water Quality	C	10,000,000	1.000%	75	40	5,333,333	12,623	12,875	13,132	13,395	13,663
Ridge Road Reservoir	Water Quality	C	1,827,000	1.000%	50	40	1,588,696	2,306	2,352	2,399	2,447	2,496
Garden Hills Pump Station	Water Quality	C	400,000	1.000%	30	20	142,857	1,010	1,030	1,051	1,072	1,093
Dean Estates Pump Station	Water Quality	C	500,000	1.000%	30	20	303,030	1,262	1,287	1,313	1,340	1,366
Fruit Hill Pump Station	Water Quality	C	723,000	1.000%	30	25	583,065	1,460	1,489	1,519	1,550	1,581
Bath Street Pump Station	Water Quality	C	2,000,000	1.000%	30	1	43,478	100,980	103,000	105,060	107,161	109,304
Neutaconkanut Pump Station	Water Quality	C	2,000,000	1.000%	30	1	43,478	100,980	103,000	105,060	107,161	109,304
Greenville Ave Pump Station	Water Quality	C	300,000	1.000%	30	30	241,935	421	429	438	447	455
SUB-TOTAL			**$47,750,000**				22,923,494	**$255,122**	**$260,225**	**$265,429**	**$270,738**	**$276,153**
BUILDING AND SYSTEM SUPPORT												
Forestry Garage	Water Resources	C	1,000,000	0.000%	75	30	31,203,367	1,700	1,734	1,769	1,804	1,840
Academy Ave Administration Building	Administration	C	6,000,000	0.000%	50	10	57,073,401	30,600	31,212	31,836	32,473	33,122
SUB-TOTAL			**$7,000,000**				88,276,768	**$32,300**	**$32,946**	**$33,605**	**$34,277**	**$34,963**
Total			**$679,931,332**				**$370,368,644**	**$13,084,959**	**$13,344,099**	**$13,484,221**	**$13,824,922**	**$14,157,813**

EXHIBIT - 5

Annual Funding Allocation by Facility Category

Providence Water

Section 2

Ending June 30,

PRINCIPAL COMPONENTS BY CATEGORY	0.000% 2001	0.000% 2002	0.000% 2003	0.000% 2004	0.000% 2005	0.000% 2006	0.000% 2007	0.000% 2008	0.000% 2009	0.000% 2010	0.000% 2011	0.000% 2012
RAW WATER SUPPLY												
Scituate Reservoir / Gainer Dam	28,419	28,419	28,419	28,419	28,419	28,419	28,419	28,419	28,419	28,419	28,419	28,419
Regulating Reservoir / Dam	2,442	2,442	2,442	2,442	2,442	2,442	2,442	2,442	2,442	2,442	2,442	2,442
Barden Reservoir / Dam	6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061
Moswansicut Reservoir / Dam	7,519	7,519	7,519	7,519	7,519	7,519	7,519	7,519	7,519	7,519	7,519	7,519
Ponaganset Reservoir / Dam	7,022	7,022	7,022	7,022	7,022	7,022	7,022	7,022	7,022	7,022	7,022	7,022
Westconnaug Reservoir / Dam	3,511	3,511	3,511	3,511	3,511	3,511	3,511	3,511	3,511	3,511	3,511	3,511
Reservoir Roads and Fences	69,522	69,522	69,522	69,522	69,522	69,522	69,522	69,522	69,522	69,522	69,522	69,522
Gainer Dam Gate House	611	611	611	611	611	611	611	611	611	611	611	611
60 inch Conduits	4,304	4,304	4,304	4,304	4,304	4,304	4,304	4,304	4,304	4,304	4,304	4,304
90 inch Steel Aqueduct	3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312
Raw Water Booster Pump Station	22,931	22,931	22,931	22,931	22,931	22,931	22,931	22,931	22,931	22,931	22,931	22,931
Electrical Supply System for Treatment Plant	113,823	113,823	113,823	113,823	113,823	113,823	113,823	113,823	113,823	113,823	113,823	113,823
SUB-TOTAL	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**
TREATMENT PLANT FACILITIES												
Treatment Plant Building / Infrastructure	114,986	114,986	114,986	114,986	114,986	114,986	114,986	114,986	114,986	114,986	114,986	114,986
Influent Conduit / Structures	12,084	12,084	12,084	12,084	12,084	12,084	12,084	12,084	12,084	12,084	12,084	12,084
Aeration Basin	6,737	6,737	6,737	6,737	6,737	6,737	6,737	6,737	6,737	6,737	6,737	6,737
Sedimentation Basins	13,801	13,801	13,801	13,801	13,801	13,801	13,801	13,801	13,801	13,801	13,801	13,801
Filters	429,124	429,124	429,124	429,124	429,124	429,124	429,124	429,124	429,124	429,124	429,124	429,124
Venturi Tube Effluent Meters - 12 inch diameter	2,733	2,733	2,733	2,733	2,733	2,733	2,733	2,733	2,733	2,733	2,733	2,733
Clearwell	11,975	11,975	11,975	11,975	11,975	11,975	11,975	11,975	11,975	11,975	11,975	11,975
Wash Water System	4,381	4,381	4,381	4,381	4,381	4,381	4,381	4,381	4,381	4,381	4,381	4,381
Service Water System	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208
Ferric Storage/Transfer/Feed System	35,524	35,524	35,524	35,524	35,524	35,524	35,524	35,524	35,524	35,524	35,524	35,524
Lime Storage/Transfer/Feed System	35,966	35,966	35,966	35,966	35,966	35,966	35,966	35,966	35,966	35,966	35,966	35,966
Chlorine Storage/Transfer/Feed System	33,433	33,433	33,433	33,433	33,433	33,433	33,433	33,433	33,433	33,433	33,433	33,433
Fluoride Storage/Transfer/Feed System	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279
Sludge Handling / Disposal System	140,815	140,815	140,815	140,815	140,815	140,815	140,815	140,815	140,815	140,815	140,815	140,815
Process Control / Data Acquisition System	307,659	307,659	307,659	307,659	307,659	307,659	307,659	307,659	307,659	307,659	307,659	307,659
SUB-TOTAL	**$1,153,705**	**$1,153,705**	**$1,153,705**	**$1,153,705**	**$1,153,705**	**$1,153,705**	**$1,153,705**	**$1,153,705**	**$1,153,705**	**$1,153,705**	**$1,153,705**	**$1,153,705**
TRANSMISSION SYSTEM												
90 Scituate Tunnel and Aqueduct	39,982	39,982	39,982	39,982	39,982	39,982	39,982	39,982	39,982	39,982	39,982	39,982
Supplemental Tunnel and Aqueduct	36,865	36,865	36,865	36,865	36,865	36,865	36,865	36,865	36,865	36,865	36,865	36,865
Transmission Mains (Units in inch-feet)	*1,492,279*	*1,492,279*	*1,492,279*	*1,492,279*	*1,492,279*	*1,492,279*	*1,492,279*	*1,492,279*	*1,492,279*	*1,492,279*	*1,492,279*	*1,492,279*
16												
20												
24												
30												
36												
42												
48												
60												
66												
Transmission Valves	*278,394*	*278,394*	*278,394*	*278,394*	*278,394*	*278,394*	*278,394*	*278,394*	*278,394*	*278,394*	*278,394*	*278,394*
16												
20												
24												
30												

EXHIBIT - 5

Annual Funding Allocation by Facility Category

Providence Water

Section 2

Ending June 30,

PRINCIPAL COMPONENTS BY CATEGORY	0.000% 2001	0.000% 2002	0.000% 2003	0.000% 2004	0.000% 2005	0.000% 2006	0.000% 2007	0.000% 2008	0.000% 2009	0.000% 2010	0.000% 2011	0.000% 2012
36												
42												
48												
60												
66												
SUB-TOTAL	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521
DISTRIBUTION SYSTEM												
Distribution Mains (Units in inch-feet)	*3,972,176*	*3,972,176*	*3,972,176*	*3,972,176*	*3,972,176*	*3,972,176*	*3,972,176*	*3,972,176*	*3,972,176*	*3,972,176*	*3,972,176*	*3,972,176*
6												
8												
10												
12												
Distribution Valves	*895,835*	*895,835*	*895,835*	*895,835*	*895,835*	*895,835*	*895,835*	*895,835*	*895,835*	*895,835*	*895,835*	*895,835*
6												
8												
10												
12												
Services	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545
Hydrants	506,237	506,237	506,237	506,237	506,237	506,237	506,237	506,237	506,237	506,237	506,237	506,237
Meters	736,202	736,202	736,202	736,202	736,202	736,202	736,202	736,202	736,202	736,202	736,202	736,202
SUB-TOTAL	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995
PUMPING AND STORAGE												
Aqueduct Reservoir and Gatehouse	16,396	16,396	16,396	16,396	16,396	16,396	16,396	16,396	16,396	16,396	16,396	16,396
Neutaconkanut Reservoir and Gatehouse	20,494	20,494	20,494	20,494	20,494	20,494	20,494	20,494	20,494	20,494	20,494	20,494
Longview Reservoir and Gatehouse	13,663	13,663	13,663	13,663	13,663	13,663	13,663	13,663	13,663	13,663	13,663	13,663
Ridge Road Reservoir	2,496	2,496	2,496	2,496	2,496	2,496	2,496	2,496	2,496	2,496	2,496	2,496
Garden Hills Pump Station	1,093	1,093	1,093	1,093	1,093	1,093	1,093	1,093	1,093	1,093	1,093	1,093
Dean Estates Pump Station	1,366	1,366	1,366	1,366	1,366	1,366	1,366	1,366	1,366	1,366	1,366	1,366
Fruit Hill Pump Station	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581
Bath Street Pump Station	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304
Neutaconkanut Pump Station	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304
Greenville Ave Pump Station	455	455	455	455	455	455	455	455	455	455	455	455
SUB-TOTAL	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153
BUILDING AND SYSTEM SUPPORT												
Forestry Garage	1,840	1,840	1,840	1,840	1,840	1,840	1,840	1,840	1,840	1,840	1,840	1,840
Academy Ave Administration Building	33,122	33,122	33,122	33,122	33,122	33,122	33,122	33,122	33,122	33,122	33,122	33,122
SUB-TOTAL	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963
Total	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813

EXHIBIT - 5 Annual Funding Allocation by Facility Category Providence Water Ending June 30,	Section 3			
	0.000%	0.000%	0.000%	Total
PRINCIPAL COMPONENTS BY CATEGORY	2013	2014	2015	In
RAW WATER SUPPLY				$
Scituate Reservoir / Gainer Dam	28,419	28,419	28,419	548,410
Regulating Reservoir / Dam	2,442	2,442	2,442	45,012
Barden Reservoir / Dam	6,061	6,061	6,061	118,390
Moswansicut Reservoir / Dam	7,519	7,519	7,519	147,257
Ponaganset Reservoir / Dam	7,022	7,022	7,022	135,743
Westconnaug Reservoir / Dam	3,511	3,511	3,511	67,871
Reservoir Roads and Fences	69,522	69,522	69,522	1,264,953
Gainer Dam Gate House	611	611	611	12,094
60 inch Conduits	4,304	4,304	4,304	85,148
90 inch Steel Aqueduct	3,312	3,312	3,312	65,608
Raw Water Booster Pump Station	22,931	22,931	22,931	428,664
Electrical Supply System for Treatment Plant	113,823	113,823	113,823	2,190,665
SUB-TOTAL	$269,477	$269,477	$269,477	$5,109,815
TREATMENT PLANT FACILITIES				
Treatment Plant Building / Infrastructure	114,986	114,986	114,986	2,143,782
Influent Conduit / Structures	12,084	12,084	12,084	234,488
Aeration Basin	6,737	6,737	6,737	132,213
Sedimentation Basins	13,801	13,801	13,801	273,367
Filters	429,124	429,124	429,124	7,714,134
Venturi Tube Effluent Meters - 12 inch diameter	2,733	2,733	2,733	54,127
Clearwell	11,975	11,975	11,975	211,689
Wash Water System	4,381	4,381	4,381	79,622
Service Water System	1,208	1,208	1,208	22,956
Ferric Storage/Transfer/Feed System	35,524	35,524	35,524	703,646
Lime Storage/Transfer/Feed System	35,966	35,966	35,966	694,944
Chlorine Storage/Transfer/Feed System	33,433	33,433	33,433	636,360
Fluoride Storage/Transfer/Feed System	3,279	3,279	3,279	64,952
Sludge Handling / Disposal System	140,815	140,815	140,815	2,518,021
Process Control / Data Acquisition System	307,659	307,659	307,659	5,949,478
SUB-TOTAL	$1,153,705	$1,153,705	$1,153,705	$21,433,780
TRANSMISSION SYSTEM				
90 Scituate Tunnel and Aqueduct	39,982	39,982	39,982	791,954
Supplemental Tunnel and Aqueduct	36,865	36,865	36,865	730,217
Transmission Mains (Units in inch-feet)	*1,492,279*	*1,492,279*	*1,492,279*	*29,558,663*
16				
20				
24				
30				
36				
42				
48				
60				
66				
Transmission Valves	*278,394*	*278,394*	*278,394*	*5,621,371*
16				
20				
24				
30				

EXHIBIT - 5 Annual Funding Allocation by Facility Category Providence Water Ending June 30,	Section 3			
PRINCIPAL COMPONENTS BY CATEGORY	0.000% 2013	0.000% 2014	0.000% 2015	Total In
36				
42				
48				
60				
66				
SUB-TOTAL	$1,847,521	$1,847,521	$1,847,521	$36,702,205
DISTRIBUTION SYSTEM				
Distribution Mains (Units in inch-feet)	*3,972,176*	*3,972,176*	*3,972,176*	*74,785,958*
6				
8				
10				
12				
Distribution Valves	*895,835*	*895,835*	*895,835*	*17,806,358*
6				
8				
10				
12				
Services	4,465,545	4,465,545	4,465,545	88,640,069
Hydrants	506,237	506,237	506,237	10,036,702
Meters	736,202	736,202	736,202	15,691,631
SUB-TOTAL	$10,575,995	$10,575,995	$10,575,995	$210,854,918
PUMPING AND STORAGE				
Aqueduct Reservoir and Gatehouse	16,396	16,396	16,396	324,760
Neutaconkanut Reservoir and Gatehouse	20,494	20,494	20,494	405,949
Longview Reservoir and Gatehouse	13,663	13,663	13,663	270,633
Ridge Road Reservoir	2,496	2,496	2,496	49,445
Garden Hills Pump Station	1,093	1,093	1,093	21,651
Dean Estates Pump Station	1,366	1,366	1,366	27,063
Fruit Hill Pump Station	1,581	1,581	1,581	31,307
Bath Street Pump Station	109,304	109,304	109,304	2,165,064
Neutaconkanut Pump Station	109,304	109,304	109,304	2,165,064
Greenville Ave Pump Station	455	455	455	9,021
SUB-TOTAL	$276,153	$276,153	$276,153	$5,469,957
BUILDING AND SYSTEM SUPPORT				
Forestry Garage	1,840	1,840	1,840	36,449
Academy Ave Administration Building	33,122	33,122	33,122	656,080
SUB-TOTAL	$34,963	$34,963	$34,963	$692,529
Total	$14,157,813	$14,157,813	$14,157,813	$280,263,204

EXHIBIT - 6

Funding Allocation Detail by Facility Category

EXHIBIT - 6 is a 28-page set of tables depicting the details of the Revenue Allocation Module. It is divided into seven sections as shown on the Page Guide for this Exhibit. It sets out the parameters and lists the assets of each respective facility category. It computes the revenue requirements (Set-Asides) and tracks the deletions and additions of units. It is separate from the actual revenues provided from the sale of water.

This Module is where the bulk of the data comes together after the engineers make their initial projections for the Replacement Program. This Module feeds into the other modules which successively aggregate the data for planning and policy decisions. This element of the revenue generation program will aid financial planners to determine revenue shortfalls and conversely will act as a guide to engineers to identify the need to postpone facility replacement projects.

EXHIBIT - 6

Page Guide for the Seven "Sections" of the Funding Allocation Detail by Facility Category

Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7
From						To
Description to	FY 95 - 96	FY 96 - 97	FY 97 - 98	FY 97 - 99	FY 99 -2000 - 2001	FY 2002 - 2015
Raw Water Supply						
Equiv. Bk. Valu						
Clear Well Pg - 1 -	Pg - 1 -	Pg - 1 -	Pg - 1 -	Pg - 1 -	Pg - 1 -	Pg - 1 -
Wash Water System						
66" Trans. Main Pg - 2 -	Pg - 2 -	Pg - 2 -	Pg - 2 -	Pg - 2 -	Pg - 2 -	Pg - 2 -
Trans. Valve						
12" Distr. Valves Pg - 3 -	Pg - 3 -	Pg - 3 -	Pg - 3 -	Pg - 3 -	Pg - 3 -	Pg - 3 -
Services						
Building System Pg - 4 -	Pg - 4 -	Pg - 4 -	Pg - 4 -	Pg - 4 -	Pg - 4 -	Pg - 4 -
To						

Exhibit - 6

Funding Allocation Detail by Facility Category

Section 1

Ending June 30, 1995

Providence Water PRINCIPAL COMPONENTS BY CATEGORY	Area of Responsibility	Partial Alloc.. to Keep Facility Current	Acct. No. NARUC	Number of Units	Estimated Total Replacement Cost	Salv. Rate in %	Approximate Average Installation Date(s)	New Facilities Standard Econ. Life (Yrs) SEL	Approximate Average Age Exist. Facility AGE	Exist. Facilit Practical Remaining L PRL	Scheduled Completion Year	Exist. Facility Depr., per Unit $/Unit	Exist. Facility Depr. Aggregate $	Equivalent Book Value Repl. Cost less Depr. EBV
RAW WATER SUPPLY		5.00%												
Scituate Reservoir / Gainer Dam	Water Resources	C	312	1	$36,767,000	1.00%	1927	150	68	100	2095	$18,200	$18,200	$21,885,119
Regulating Reservoir / Dam	Water Resources	C	312	1	714,000	1.00%	1919	100	76	75	2070	471	471	354,636
Barden Reservoir / Dam	Water Resources	C	312	1	7,000,000	1.00%	1926	100	69	75	2070	4,620	4,620	3,645,833
Moswansicut Reservoir / Dam	Water Resources	C	312	1	9,000,000	1.00%	1920	100	75	75	2070	5,940	5,940	4,500,000
Ponaganset Reservoir / Dam	Water Resources	C	312	1	7,000,000	1.00%	1917	100	78	75	2070	4,620	4,620	3,431,373
Westconnaug Reservoir / Dam	Water Resources	C	312	1	3,500,000	1.00%	1925	100	70	75	2070	2,310	2,310	1,810,345
Reservoir Roads and Fences	Water Resources	C	312	1	11,400,000	0.00%	1940	30	55	20	2015	28,500	28,500	3,040,000
Gainer Dam Gate House	Water Quality	C	312	1	553,000	0.00%	1927	100	68	50	2045	553	553	234,322
60 inch Conduits	Water Quality	C	316	2	1,300,000	0.00%	1926	100	69	50	2045	650	1,300	546,218
90 inch Steel Aqueduct	Water Quality	C	316	1	3,000,000	0.00%	1926	100	69	50	2045	3,000	3,000	1,260,504
Raw Water Booster Pump Station	Water Quality	C	321	1	3,285,000	1.00%	1966	50	29	30	2025	5,420	5,420	1,670,339
Electrical Supply System for Treatment Plant	Water Quality	C	332	1	1,000,000	1.00%	1926	25	69	1	1996	49,500	49,500	14,286
SUB-TOTAL					**$84,519,000**								$124,434	$42,392,975
TREATMENT PLANT FACILITIES														
Treatment Plant Building / Infrastructure	Water Quality	C	331	1	$30,000,000	0.00%	1945	75	50	25	2020	60,000	$60,000	$10,000,000
Influent Conduit / Structures	Water Quality	C	316	1	5,000,000	0.00%	1926	75	69	30	2025	8,333	8,333	1,515,152
Aeration Basin	Water Quality	C	332	1	550,000	0.00%	1926	75	69	5	2000	5,500	5,500	37,162
Sedimentation Basins	Water Quality	C	332	2	5,000,000	0.00%	1939	75	56	20	2015	6,250	12,500	1,315,789
Filters	Water Quality	C	332	18	10,000,000	0.00%	1950	25	45	5	2000	5,556	100,000	1,000,000
Venturi Tube Effluent Meters - 12 inch diameter	Water Quality	C	332	36	500,000	1.00%	1940	30	55	10	2005	69	2,475	76,923
Clearwell	Water Quality	C	332	1	1,000,000	0.00%	1940	75	55	50	2045	1,000	1,000	476,190

Exhibit - 6

Funding Allocation Detail by Facility Category

Section 1

Ending June 30, 1995

Providence Water PRINCIPAL COMPONENTS BY CATEGORY	Area of Responsibility	Partial Alloc.. to Keep Facility Current	Acct. No. NARUC	Number of Units	Estimated Total Replacement Cost	Salv. Rate in %	Approximate Average Installation Date(s)	New Facilities Standard Econ. Life (Yrs) SEL	Approximate Average Age Exist. Facility AGE	Exist. Facilit Practical Remaining L PRL	Scheduled Completion Year	Exist. Facility Depr.. per Unit $/Unit	Exist. Facility Depr. Aggregate $	Equivalent Book Value Repl. Cost less Depr. EBV
Wash Water System	Water Quality	C	332	1	700,000	1.00%	1960	40	35	20	2015	1,733	1,733	254,545
Service Water System	Water Quality	C	332	1	250,000	1.00%	1960	40	35	20	2015	619	619	90,909
Ferric Storage/Transfer/Feed System	Water Quality	C	332	1	600,000	1.00%	1960	20	35	5	2000	5,940	5,940	75,000
Lime Storage/Transfer/Feed System	Water Quality	C	332	1	1,500,000	1.00%	1960	20	35	5	2000	14,850	14,850	187,500
Chlorine Storage/Transfer/Feed System	Water Quality	C	332	1	500,000	1.00%	1960	20	35	5	2000	4,950	4,950	62,500
Fluoride Storage/Transfer/Feed System	Water Quality	C	332	1	300,000	1.00%	1960	20	35	5	2000	2,970	2,970	37,500
Sludge Handling / Disposal System	Water Quality	C	332	1	7,000,000	1.00%	1926	30	69	10	2005	34,650	34,650	886,076
Process Control / Data Acquisition System	Water Quality	C	332	1	2,500,000	1.00%	1967	15	28	1	1996	123,750	123,750	86,207
SUB-TOTAL					$65,400,000								379,270	16,101,454
TRANSMISSION SYSTEM														
90 Scituate Tunnel and Aqueduct	Water Quality	C	316	1	$36,213,000	0.00%	1925	100	70	50	2045	36,213	36,213	15,088,750
Supplemental Tunnel and Aqueduct	Water Quality	C	316	1	33,390,000	0.00%	1970	100	25	50	2045	33,390	33,390	22,260,000
Transmission Mains (Units in inch-feet)	Cost/Inch-Ft.	*$5.186*	343	***13,031,580***		0.00%	1930	100	65	50	2045	0.104	1,351,603	29,382,681
16	inch	4.063		176,784	11,490,960	0.00%	1871-1984							
20	inch	3.750		20,172	1,512,900	0.00%	1871-1965							
24	inch	3.542		126,650	10,765,250	0.00%	1871-1984							
30	inch	3.833		86,109	9,902,535	0.00%	1871-1965							
36	inch	4.583		10,067	1,661,055	0.00%	1871-1962							
42	inch	4.762		25,501	5,100,200	0.00%	1897-1962							
48	inch	5.208		17,023	4,255,750	0.00%	1926-1962							
60	inch	7.083		22,810	9,694,250	0.00%	1928-1962							
66	inch	9.848		8,448	5,491,200	0.00%	1926							

Exhibit - 6

Funding Allocation Detail by Facility Category

Section 1

Ending June 30, 1995

Providence Water PRINCIPAL COMPONENTS BY CATEGORY	Area of Responsibility	Partial Alloc.. to Keep Facility Current	Acct. No. NARUC	Number of Units	Estimated Total Replacement Cost	Salv. Rate in %	Approximate Average Installation Date(s)	New Facilities Standard Econ. Life (Yrs) SEL	Approximate Average Age Exist. Facility AGE	Exist. Facilit Practical Remaining L PRL	Scheduled Completion Year	Exist. Facility Depr.. per Unit $/Unit	Exist. Facility Depr. Aggregate $	Equivalent Book Value Repl. Cost less Depr. EBV
Transmission Valves	Avg. Inch-Unit	*$556.610*	343	***12,794***			1940	75	55	25	2020	22.26	284,851	2,225,395
16	inch	281.250		326	1,467,000	0.00%	1871-1994							
20	inch	375.000		33	247,500	0.00%	1871-1965							
24	inch	333.333		113	904,000	0.00%	1871-1989							
30	inch	500.000		57	855,000	0.00%	1871-1967							
36	inch	472.222		23	391,000	0.00%	1905-1984							
42	inch	595.238		18	450,000	0.00%	1897-1971							
48	inch	729.167		14	490,000	0.00%	1928-1964							
60	inch	1,166.667		4	280,000	0.00%	1962-1971							
66	inch			0	0	0.00%								
SUB-TOTAL					**$134,561,600**								**1,706,057**	**68,956,826**
DISTRIBUTION SYSTEM														
Distribution Mains (Units in inch-feet)	Avg. Inch-Unit	*$6.06*	343	***29,675,016***			1940	75	55	50	2045	0.121	3,598,096	85,668,945
6	inch	7.500		2,462,059	$110,792,655	0.00%	1871-1994							
8	inch	6.250		1,204,952	60,247,600	0.00%	1871-1994							
10	inch	5.500		8,537	469,535	0.00%	1871-1962							
12	inch	5.000		431,473	25,888,380	0.00%	1871-1993							
Distribution Valves	Avg. Inch-Unit	*$255.833*	343	***81,752***			1950	75	45	25	2020	10.23	836,595	7,469,602
6	inch	300.000		7,304	13,147,200	0.00%	1871-1994							
8	inch	250.000		3,138	6,276,000	0.00%	1871-1994							
10	inch	240.000		14	33,600	0.00%	1871-1962							
12	inch	233.333		1,057	2,959,600	0.00%	1871-1994							

Exhibit - 6

Funding Allocation Detail by Facility Category

Ending June 30, 1995

Section 1

Providence Water PRINCIPAL COMPONENTS BY CATEGORY	Area of Responsibility	Partial Alloc., to Keep Facility Current	Acct. No. NARUC	Number of Units	Estimated Total Replacement Cost	Salv. Rate in %	Approximate Average Installation Date(s)	New Facilities Standard Econ. Life (Yrs) SEL	Approximate Average Age Exist. Facility AGE	Exist. Facilit Practical Remaining L PRL	Scheduled Completion Year	Exist. Facility Depr.. per Unit $/Unit	Exist. Facility Depr. Aggregate $	Equivalent Book Value Repl. Cost less Depr. EBV
Services	T & D		345	68,573	102,859,500	0.00%	1940	75	55	25	2020	60.00	4,114,380	32,143,594
Hydrants	T & D		348	5,264	11,580,800	0.00%	1970	50	25	25	2020	88.00	463,232	5,790,400
Meters	Finance		346	68,573	6,445,862	0.00%	1950	15	45	5	2000	18.80	1,289,172	644,586
SUB-TOTAL					$340,700,732								10,301,476	131,717,127
PUMPING AND STORAGE														
Aqueduct Reservoir and Gatehouse	Water Quality	C	342	1	$15,000,000	1.00%	1962	75	33	50	2045	14,850	14,850	9,036,145
Neutaconkanut Reservoir and Gatehouse	Water Quality	C	342	1	15,000,000	1.00%	1928	75	67	40	2035	18,563	18,563	5,607,477
Longview Reservoir and Gatehouse	Water Quality	C	342	1	10,000,000	1.00%	1960	75	35	40	2035	12,375	12,375	5,333,333
Ridge Road Reservoir	Water Quality	C	342	1	1,827,000	1.00%	1989	50	6	40	2035	2,261	2,261	1,588,696
Garden Hills Pump Station	Water Quality	C	321	1	400,000	1.00%	1959	30	36	20	2015	990	990	142,857
Dean Estates Pump Station	Water Quality	C	321	1	500,000	1.00%	1982	30	13	20	2015	1,238	1,238	303,030
Fruit Hill Pump Station	Water Quality	C	321	1	723,000	1.00%	1989	30	6	25	2020	1,432	1,432	583,065
Bath Street Pump Station	Water Quality	C	321	1	2,000,000	1.00%	1950	30	45	1	1996	99,000	99,000	43,478
Neutaconkanut Pump Station	Water Quality	C	321	1	2,000,000	1.00%	1950	30	45	1	1996	99,000	99,000	43,478
Greenville Ave Pump Station	Water Quality	C	321	1	300,000	1.00%	1994	30	1	30	2025	413	413	241,935
SUB-TOTAL					$47,750,000								250,120	22,923,494
BUILDING AND SYSTEM SUPPORT														
Forestry Garage	Water Resources	C	311	1	$1,000,000	0.00%	1962	75	33	30	2025	1,667	1,667	31,203,367
Academy Ave Administration Building	Administration	C	390	1	6,000,000	0.00%	1954	50	41	10	2005	30,000	30,000	57,073,401
SUB-TOTAL					$7,000,000								31,667	88,276,768
Total	$13,344,099				$679,931,332								$12,793,023	$370,368,644

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Funding Allocation Detail by Facility Category

Section 2

Ending June 30,

Providence Water	No. of Units Beg. Value 01-Jul-95	Repl. Alloc. Earnings Exist. Facility.s End of Prev.. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
PRINCIPAL COMPONENTS BY CATEGORY			FY - 6/30/19 95		Through 6/30/19 96			Escalated for Inflation @ Perce
RAW WATER SUPPLY								2.000%
Scituate Reservoir / Gainer Dam	1	$18,200	(1)	0	1	10,400	$69	18,634
Regulating Reservoir / Dam	1	471	(1)	0	1	1,600	16	497
Barden Reservoir / Dam	1	4,620	(1)	0	1	800	8	4,720
Moswansicut Reservoir / Dam	1	5,940	(1)	0	1	800	8	6,067
Ponaganset Reservoir / Dam	1	4,620	(1)	0	1	1,600	16	4,729
Westconnaug Reservoir / Dam	1	2,310	(1)	0	1	800	8	2,364
Reservoir Roads and Fences	1	28,500	(1)	0	1	54,000	1,800	30,906
Gainer Dam Gate House	1	553	0	0	0	0	0	564
60 inch Conduits	2	1,300	(1)	0	1	250,000	2,500	3,876
90 inch Steel Aqueduct	1	3,000	0	0	0	0	0	3,060
Raw Water Booster Pump Station	1	5,420	(1)	0	1	120,000	2,376	7,952
Electrical Supply System for Treatment Plant	1	49,500	(1)	0	1	707,000	27,997	79,047
SUB-TOTAL		$124,434						$162,416
TREATMENT PLANT FACILITIES								
Treatment Plant Building / Infrastructure	1	60,000	(1)	0	1	147,000	1,960	63,199
Influent Conduit / Structures	1	8,333	0	0	0	0	0	8,500
Aeration Basin	1	5,500	0	0	0		0	5,610
Sedimentation Basins	2	12,500	0	0	0	0	0	12,750
Filters	18	100,000	(1)	0	1	157,000	6,280	108,406
Venturi Tube Effluent Meters - 12 inch diameter	36	2,475	0	0	0	0	0	2,525
Clearwell	1	1,000	0	0	0	0	0	1,020

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Funding Allocation Detail by Facility Category

Section 2

Ending June 30,

Providence Water	No. of Units Beg. Value 01-Jul-95	Repl. Alloc. Earnings Exist. Facility.s End of Prev.. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
PRINCIPAL COMPONENTS BY CATEGORY			FY - 6/30/19 95		Through 6/30/19 96			Escalated for Inflation @ Perce
Wash Water System	1	1,733	0	0	0	0	0	1,767
Service Water System	1	619	0	0	0		0	631
Ferric Storage/Transfer/Feed System	1	5,940	(1)	0	1	530,000	26,235	32,819
Lime Storage/Transfer/Feed System	1	14,850	(1)	0	1	31,000	1,535	16,712
Chlorine Storage/Transfer/Feed System	1	4,950	(1)	0	1	60,000	2,970	8,078
Fluoride Storage/Transfer/Feed System	1	2,970	0	0	0	0	0	3,029
Sludge Handling / Disposal System	1	34,650	0	0	0		0	35,343
Process Control / Data Acquisition System	1	123,750	(1)	0	1	200,000	13,200	139,689
SUB-TOTAL		$379,270						$440,078
TRANSMISSION SYSTEM								
90 Scituate Tunnel and Aqueduct	1	36,213	0	0	0	0	0	36,937
Supplemental Tunnel and Aqueduct	1	33,390	0	0	0	0	0	34,058
Transmission Mains (Units in inch-feet)	13,031,580	1,351,603	0	0	0	0	0	1,378,635
16								
20								
24								
30								
36								
42								
48								
60								
66								

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Funding Allocation Detail by Facility Category

Section 2

Ending June 30,

Providence Water	No. of Units Beg. Value 01-Jul-95	Repl. Alloc. Earnings Exist. Facility.s End of Prev.. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
PRINCIPAL COMPONENTS BY CATEGORY			FY - 6/30/19 95		Through 6/30/19 96			Escalated for Inflation @ Perce
Transmission Valves	12,794	284,851	0	0	0		0	290,548
16								
20								
24								
30								
36								
42								
48								
60								
66								
SUB-TOTAL		$1,706,057					$0	$1,740,178
DISTRIBUTION SYSTEM								
Distribution Mains (Units in inch-feet)	29,675,016	3,598,096	0	0	0	0	0	3,670,058
6								
8								
10								
12								
Distribution Valves	81,752	836,595	(700)	(7,163)	700	345.71	3,227	849,312
6								
8								
10								
12								

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Funding Allocation Detail by Facility Category

Section 2

Ending June 30,

Providence Water	No. of Units Beg. Value 01-Jul-95	Repl. Alloc. Earnings Exist. Facility.s End of Prev.. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
PRINCIPAL COMPONENTS BY CATEGORY			FY - 6/30/19 95		Through 6/30/19 96			Escalated for Inflation @ Perce
Services	68,573	4,114,380	(130)	(7,800)	130	1,815.38	3,147	4,191,921
Hydrants	5,264	463,232	(30)	(2,640)	30	2,666.67	1,600	471,436
Meters	68,573	1,289,172	(3,240)	(60,912)	3240	87.65	18,933	1,272,138
SUB-TOTAL		$10,301,476						$10,454,864
PUMPING AND STORAGE								
Aqueduct Reservoir and Gatehouse	1	14,850	0	0		0	0	15,147
Neutaconkanut Reservoir and Gatehouse	1	18,563	0	0		0	0	18,934
Longview Reservoir and Gatehouse	1	12,375	0	0		0	0	12,623
Ridge Road Reservoir	1	2,261	0	0		0	0	2,306
Garden Hills Pump Station	1	990	0	0		0	0	1,010
Dean Estates Pump Station	1	1,238	0	0		0	0	1,262
Fruit Hill Pump Station	1	1,432	0	0		0	0	1,460
Bath Street Pump Station	1	99,000	(1)	0		0	0	100,980
Neutaconkanut Pump Station	1	99,000	(1)	0		0	0	100,980
Greenville Ave Pump Station	1	413	0	0		0	0	421
SUB-TOTAL		$250,120						$255,122
BUILDING AND SYSTEM SUPPORT								
Forestry Garage	1	1,667	0	0		0	0	1,700
Academy Ave Administration Building	1	30,000	(1)	0		0	0	30,600
SUB-TOTAL		$31,667						$32,300
Total		12,793,023						$13,084,959

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Funding Allocation Detail by Facility Category

Ending June 30,

Section 3

Providence Water	No. of Units Beg. Value	Repl. Alloc. Earnings Exist. Facilitys	No. of Units Deleted	Deduct Previous FY	No. of Units Added	Unit Cost of Added	Repl. Alloc. Earnings of Added Facilities	Total Repl. Alloc. Earnings
	01-Jul-96	End of Prev. FY	Previous FY	eleted Earnings	Current FY	Facilities	for Current FY	for Current FY
PRINCIPAL COMPONENTS BY CATEGORY			FY - 6/30/19 96		Through 6/30/19 97			Escalated for Inflation @ Perce
RAW WATER SUPPLY								2.000%
Scituate Reservoir / Gainer Dam	1	18,634	(1)	0	1	650,000	$4,290	23,382
Regulating Reservoir / Dam	1	497	(1)	0	1	100,000	990	1,517
Barden Reservoir / Dam	1	4,720	(1)	0	1	50,000	495	5,320
Moswansicut Reservoir / Dam	1	6,067	(1)	0	1	50,000	495	6,693
Ponaganset Reservoir / Dam	1	4,729	(1)	0	1	100,000	990	5,833
Westconnaug Reservoir / Dam	1	2,364	(1)	0	1	50,000	495	2,916
Reservoir Roads and Fences	1	30,906	(1)	0	1	64,000	2,133	33,700
Gainer Dam Gate House	1	564	0	0	0	0	0	575
60 inch Conduits	2	3,876	(1)	0	1	10,000	100	4,056
90 inch Steel Aqueduct	1	3,060	0	0	0	0	0	3,121
Raw Water Booster Pump Station	1	7,952	(1)	0	1	114,500	2,267	10,424
Electrical Supply System for Treatment Plant	1	79,047	(1)	0	1	196,000	7,762	88,545
SUB-TOTAL		$162,416						$186,082
TREATMENT PLANT FACILITIES								
Treatment Plant Building / Infrastructure	1	63,199	(1)	0	1	833,250	11,110	75,795
Influent Conduit / Structures	1	8,500	(1)	0	1	38,000	507	9,187
Aeration Basin	1	5,610	0	0	0		0	5,722
Sedimentation Basins	2	12,750	0	0	0	0	0	13,005
Filters	18	108,406	(1)	0	1	820,000	32,800	144,030
Venturi Tube Effluent Meters - 12 inch diameter	36	2,525	0	0	0	0	0	2,575
Clearwell	1	1,020	0	0	0	0	0	1,040

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Funding Allocation Detail by Facility Category

Ending June 30,

Section 3

Providence Water	No. of Units Beg. Value 01-Jul-96	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
PRINCIPAL COMPONENTS BY CATEGORY			FY - 6/30/19 96		Through 6/30/19 97			Escalated for Inflation @ Perce
Wash Water System	1	1,767	(1)	0	1	29,000	718	2,535
Service Water System	1	631	0	0	0		0	644
Ferric Storage/Transfer/Feed System	1	32,819	0	0	0		0	33,475
Lime Storage/Transfer/Feed System	1	16,712	(1)	0	1	315,000	15,593	32,951
Chlorine Storage/Transfer/Feed System	1	8,078	(1)	0	1	400,000	19,800	28,436
Fluoride Storage/Transfer/Feed System	1	3,029	0	0	0	0	0	3,090
Sludge Handling / Disposal System	1	35,343	(1)	0	1	431,000	14,223	50,557
Process Control / Data Acquisition System	1	139,689	(1)	0	1	2,190,000	144,540	289,914
SUB-TOTAL		$440,078						$692,955
TRANSMISSION SYSTEM								
90 Scituate Tunnel and Aqueduct	1	36,937	0	0	0	0	0	37,676
Supplemental Tunnel and Aqueduct	1	34,058	0	0	0	0	0	34,739
Transmission Mains (Units in inch-feet)	13,031,580	1,378,635	0	0	0	0	0	1,406,208
16								
20								
24								
30								
36								
42								
48								
60								
66								

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Funding Allocation Detail by Facility Category

Ending June 30,

Section 3

Providence Water	No. of Units Beg. Value 01-Jul-96	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
PRINCIPAL COMPONENTS BY CATEGORY			FY - 6/30/19 96		Through 6/30/19 97			Escalated for Inflation @ Perce
Transmission Valves	12,794	290,548	0	0	0		0	296,359
16								
20								
24								
30								
36								
42								
48								
60								
66								
SUB-TOTAL		$1,740,178						$1,774,982
DISTRIBUTION SYSTEM								
Distribution Mains (Units in inch-feet)	29,675,016	3,670,058	(45,422)	(5,507)	45,422	8.67	5,253	3,743,200
6								
8								
10								
12								
Distribution Valves	81,752	849,312	(700)	(7,163)	700	352.86	3,293	862,351
6								
8								
10								
12								

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Funding Allocation Detail by Facility Category

Ending June 30,

Section 3

Providence Water PRINCIPAL COMPONENTS BY CATEGORY	No. of Units Beg. Value 01-Jul-96	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
			FY - 6/30/19 96		Through 6/30/19 97			Escalated for Inflation @ Perce
Services	68,573	4,191,921	(200)	(12,000)	200	1,850.00	4,933	4,268,552
Hydrants	5,264	471,436	(30)	(2,640)	30	2,700.00	1,620	479,824
Meters	68,573	1,272,138	(19,440)	(365,472)	19440 -	89.40	115,867	1,042,983
SUB-TOTAL		$10,454,864						$10,396,909
PUMPING AND STORAGE								
Aqueduct Reservoir and Gatehouse	1	15,147	0	0	0		0	15,450
Neutaconkanut Reservoir and Gatehouse	1	18,934	0	0	0		0	19,312
Longview Reservoir and Gatehouse	1	12,623	0	0	0		0	12,875
Ridge Road Reservoir	1	2,306	0	0	0		0	2,352
Garden Hills Pump Station	1	1,010	0	0	0		0	1,030
Dean Estates Pump Station	1	1,262	0	0	0		0	1,287
Fruit Hill Pump Station	1	1,460	0	0	0		0	1,489
Bath Street Pump Station	0	100,980	0	0	0		0	103,000
Neutaconkanut Pump Station	0	100,980	0	0	0		0	103,000
Greenville Ave Pump Station	1	421	0	0	0		0	429
SUB-TOTAL		$255,122						$260,225
BUILDING AND SYSTEM SUPPORT								
Forestry Garage	1	1,700	0	0	0		0	1,734
Academy Ave Administration Building	0	30,600	0	0	0		0	31,212
SUB-TOTAL		$32,300						$32,946
Total		$13,084,959						$13,344,099

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Funding Allocation Detail by Facility Category

Section 4

Ending June 30,

Providence Water PRINCIPAL COMPONENTS BY CATEGORY	No. of Units Beg. Value 01-Jul-97	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
			FY - 6/30/19 97		Through 6/30/19 98			Escalated for Inflation @ Percen
RAW WATER SUPPLY								2.000%
Scituate Reservoir / Gainer Dam	1	23,382	(1)	0	1	171,600	1,133	25,005
Regulating Reservoir / Dam	1	1,517	(1)	0	1	26,400	261	1,813
Barden Reservoir / Dam	1	5,320	(1)	0	1	13,200	131	5,559
Moswansicut Reservoir / Dam	1	6,693	(1)	0	1	13,200	131	6,960
Ponaganset Reservoir / Dam	1	5,833	(1)	0	1	26,400	261	6,216
Westconnaug Reservoir / Dam	1	2,916	(1)	0	1	13,200	131	3,108
Reservoir Roads and Fences	1	33,700	(1)	0	1	43,000	1,433	35,836
Gainer Dam Gate House	1	575	0	0	0	0	0	587
60 inch Conduits	2	4,056	0	0	0		0	4,137
90 inch Steel Aqueduct	1	3,121	0	0	0	0	0	3,184
Raw Water Booster Pump Station	1	10,424	(1)	0	1	509,000	10,078	20,912
Electrical Supply System for Treatment Plant	1	88,545	0	0	0	0	0	90,316
SUB-TOTAL		$186,082						$203,633
TREATMENT PLANT FACILITIES								
Treatment Plant Building / Infrastructure	1	75,795	(1)	0	1	105,000	1,400	78,739
Influent Conduit / Structures	1	9,187	(1)	0	1	165,000	2,200	11,615
Aeration Basin	1	5,722	(1)	0	1	47,000	627	6,476
Sedimentation Basins	2	13,005	0	0	0	0	0	13,265
Filters	18	144,030	(5)	0	5	491,800	98,360	247,238
Venturi Tube Effluent Meters - 12 inch diameter	36	2,575	0	0	0	0	0	2,626
Clearwell	1	1,040	(1)	0	1	384,000	5,120	6,284

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Funding Allocation Detail by Facility Category

Ending June 30,

Section 4

Providence Water PRINCIPAL COMPONENTS BY CATEGORY	No. of Units Beg. Value 01-Jul-97	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
			FY - 6/30/19 97		Through 6/30/19 98			Escalated for Inflation @ Percen
Wash Water System	1	2,535	0	0	0	0	0	2,585
Service Water System	1	644	(1)	0	1	20,000	495	1,162
Ferric Storage/Transfer/Feed System	1	33,475	0	0	0		0	34,144
Lime Storage/Transfer/Feed System	1	32,951	(1)	0	1	19,000	941	34,569
Chlorine Storage/Transfer/Feed System	1	28,436	(1)	0	1	62,000	3,069	32,135
Fluoride Storage/Transfer/Feed System	1	3,090	0	0	0	0	0	3,152
Sludge Handling / Disposal System	1	50,557	(1)	0	1	732,000	24,156	76,208
Process Control / Data Acquisition System	1	289,914	0	0	0		0	295,712
SUB-TOTAL		$692,955						$845,909
TRANSMISSION SYSTEM								
90 Scituate Tunnel and Aqueduct	1	37,676	0	0	0	0	0	38,430
Supplemental Tunnel and Aqueduct	1	34,739	0	0	0	0	0	35,434
Transmission Mains (Units in inch-feet)	13,031,580	1,406,208	0	0	0	0	0	1,434,332
16								
20								
24								
30								
36								
42								
48								
60								
66								

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Funding Allocation Detail by Facility Category

Section 4

Ending June 30,

Providence Water PRINCIPAL COMPONENTS BY CATEGORY	No. of Units Beg. Value 01-Jul-97	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
	FY - 6/30/19 97				Through 6/30/19 98			Escalated for Inflation @ Percen
Transmission Valves	12,794	296,359	(592)	(13,176)	591.81	569.44	4,493	293,429
16								
20								
24								
30								
36								
42								
48								
60								
66								
SUB-TOTAL		**$1,774,982**						**$1,801,625**
DISTRIBUTION SYSTEM								
Distribution Mains (Units in inch-feet)	29,675,016	3,743,200	(52,992)	(6,425)	52,992	8.85	6,253	3,817,888
6								
8								
10								
12								
Distribution Valves	81,752	862,351	(700)	(7,163)	700	360.00	3,360	875,718
6								
8								
10								
12								

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Funding Allocation Detail by Facility Category

Section 4

Ending June 30,

Providence Water	No. of Units Beg. Value 01-Jul-97	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
PRINCIPAL COMPONENTS BY CATEGORY			FY - 6/30/19 97		Through 6/30/19 98			Escalated for Inflation @ Percen
Services	68,573	4,268,552	(600)	(36,000)	600	1,888.33	15,107	4,332,611
Hydrants	5,264	479,824	(30)	(2,640)	30	2,766.67	1,660	488,421
Meters	68,573	1,042,983	(18,837)	(354,136)	18837	91.15	114,467	819,380
SUB-TOTAL		$10,396,909						$10,334,019
PUMPING AND STORAGE								
Aqueduct Reservoir and Gatehouse	1	15,450	0	0	0		0	15,759
Neutaconkanut Reservoir and Gatehouse	1	19,312	0	0	0		0	19,699
Longview Reservoir and Gatehouse	1	12,875	0	0	0		0	13,132
Ridge Road Reservoir	1	2,352	0	0	0		0	2,399
Garden Hills Pump Station	1	1,030	0	0	0		0	1,051
Dean Estates Pump Station	1	1,287	0	0	0		0	1,313
Fruit Hill Pump Station	1	1,489	0	0	0		0	1,519
Bath Street Pump Station	0	103,000	0	0	0		0	105,060
Neutaconkanut Pump Station	0	103,000	0	0	0		0	105,060
Greenville Ave Pump Station	1	429	0	0	0		0	438
SUB-TOTAL		$260,225						$265,429
BUILDING AND SYSTEM SUPPORT								
Forestry Garage	1	1,734	0	0	0		0	1,769
Academy Ave Administration Building	0	31,212	0	0	0		0	31,836
SUB-TOTAL		$32,946						$33,605
Total		$13,344,099						$13,484,221

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Funding Allocation Detail by Facility Category

Section 5

Ending June 30,

Providence Water PRINCIPAL COMPONENTS BY CATEGORY	No. of Units Beg. Value 01-Jul-98	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
			FY - 6/30/19 98		Through 6/30/ 99			Escalated for Inflation @ Percen
RAW WATER SUPPLY								2.000%
Scituate Reservoir / Gainer Dam	1	25,005	(1)	0	1	174,850	1,154	26,682
Regulating Reservoir / Dam	1	1,813	(1)	0	1	26,900	266	2,121
Barden Reservoir / Dam	1	5,559	(1)	0	1	13,450	133	5,806
Moswansicut Reservoir / Dam	1	6,960	(1)	0	1	13,450	133	7,235
Ponaganset Reservoir / Dam	1	6,216	(1)	0	1	26,900	266	6,612
Westconnaug Reservoir / Dam	1	3,108	(1)	0	1	13,450	133	3,306
Reservoir Roads and Fences	1	35,836	(1)	0	1	459,000	15,300	52,159
Gainer Dam Gate House	1	587	0	0	0	0	0	599
60 inch Conduits	2	4,137	0	0	0		0	4,219
90 inch Steel Aqueduct	1	3,184	0	0	0	0	0	3,247
Raw Water Booster Pump Station	1	20,912	(1)	0	1	57,000	1,129	22,481
Electrical Supply System for Treatment Plant	1	90,316	(1)	0	1	482,000	19,087	111,591
SUB-TOTAL		$203,633						**$246,060**
TREATMENT PLANT FACILITIES								
Treatment Plant Building / Infrastructure	1	78,739	(1)	0	1	438,500	5,847	86,278
Influent Conduit / Structures	1	11,615	0	0	0	0	0	11,847
Aeration Basin	1	6,476	0	0	0		0	6,605
Sedimentation Basins	2	13,265	0	0	0	0	0	13,530
Filters	18	247,238	(5)	0	5	472,000	94,400	348,470
Venturi Tube Effluent Meters - 12 inch diameter	36	2,626	0	0	0	0	0	2,679
Clearwell	1	6,284	(1)	0	1	392,000	5,227	11,740

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Funding Allocation Detail by Facility Category

Section 5

Ending June 30,

Providence Water	No. of Units Beg. Value 01-Jul-98	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
PRINCIPAL COMPONENTS BY CATEGORY			FY - 6/30/19 98		Through 6/30/ 99			Escalated for Inflation @ Percen
Wash Water System	1	2,585	0	0	0	0	0	2,637
Service Water System	1	1,162	0	0	0		0	1,185
Ferric Storage/Transfer/Feed System	1	34,144	0	0	0		0	34,827
Lime Storage/Transfer/Feed System	1	34,569	0	0	0	0	0	35,260
Chlorine Storage/Transfer/Feed System	1	32,135	0	0	0	0	0	32,778
Fluoride Storage/Transfer/Feed System	1	3,152	0	0	0	0	0	3,215
Sludge Handling / Disposal System	1	76,208	(1)	0	1	747,000	24,651	102,876
Process Control / Data Acquisition System	1	295,712	0	0	0		0	301,626
SUB-TOTAL		$845,909						$995,554
TRANSMISSION SYSTEM								
90 Scituate Tunnel and Aqueduct	1	38,430	0	0	0	0	0	39,198
Supplemental Tunnel and Aqueduct	1	35,434	0	0	0	0	0	36,142
Transmission Mains (Units in inch-feet)	13,031,580	1,434,332	0	0	0	0	0	1,463,019
16								
20								
24								
30								
36								
42								
48								
60								
66								

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Funding Allocation Detail by Facility Category

Section 5

Ending June 30,

Providence Water PRINCIPAL COMPONENTS BY CATEGORY	No. of Units Beg. Value 01-Jul-98	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
			FY - 6/30/19 98		Through 6/30/ 99			Escalated for Inflation @ Percen
Transmission Valves	12,794	293,429	(842)	(18,751)	842.19	572.32	6,427	286,727
16								
20								
24								
30								
36								
42								
48								
60								
66								
SUB-TOTAL		$1,801,625						$1,825,086
DISTRIBUTION SYSTEM								
Distribution Mains (Units in inch-feet)	29,675,016	3,817,888	(56,777)	(6,884)	56,777	9.04	6,840	3,894,201
6								
8								
10								
12								
Distribution Valves	81,752	875,718	(1,400)	(14,327)	1400	367.14	6,853	885,610
6								
8								
10								
12								

Exhibit - 6

Funding Allocation Detail by Facility Category

Section 5

Ending June 30,

Providence Water PRINCIPAL COMPONENTS BY CATEGORY	No. of Units Beg. Value 01-Jul-98	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY
			FY - 6/30/19 98		Through 6/30/ 99			Escalated for Inflation @ Percen
Services	68,573	4,332,611	(600)	(36,000)	600	1,926.67	15,413	4,398,265
Hydrants	5,264	488,421	(30)	(2,640)	30	2,833.33	1,700	497,231
Meters	68,573	819,380	(4,500)	(84,600)	4500	92.89	27,867	777,900
SUB-TOTAL		$10,334,019						$10,453,207
PUMPING AND STORAGE								
Aqueduct Reservoir and Gatehouse	1	15,759	0	0	0		0	16,074
Neutaconkanut Reservoir and Gatehouse	1	19,699	0	0	0		0	20,093
Longview Reservoir and Gatehouse	1	13,132	0	0	0		0	13,395
Ridge Road Reservoir	1	2,399	0	0	0		0	2,447
Garden Hills Pump Station	1	1,051	0	0	0		0	1,072
Dean Estates Pump Station	1	1,313	0	0	0		0	1,340
Fruit Hill Pump Station	1	1,519	0	0	0		0	1,550
Bath Street Pump Station	0	105,060	0	0	0		0	107,161
Neutaconkanut Pump Station	0	105,060	0	0	0		0	107,161
Greenville Ave Pump Station	1	438	0	0	0		0	447
SUB-TOTAL		$265,429						$270,738
BUILDING AND SYSTEM SUPPORT								
Forestry Garage	1	1,769	0	0	0		0	1,804
Academy Ave Administration Building	0	31,836	0	0	0		0	32,473
SUB-TOTAL		$33,605						$34,277
Total		$13,484,221						$13,824,922

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Funding Allocation Detail by Facility Category

Section 6

Ending June 30,

Providence Water	No. of Units Beg. Value 01-Jul-99	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY	0.000%
PRINCIPAL COMPONENTS BY CATEGORY			FY - 6/30/19 99		Through 6/30/20 00			Escalated for Inflation @ Perce	2001
RAW WATER SUPPLY								2.000%	
Scituate Reservoir / Gainer Dam	1	26,682	(1)	0	1	178,750	1,180	28,419	$28,419
Regulating Reservoir / Dam	1	2,121	(1)	0	1	27,500	272	2,442	2,442
Barden Reservoir / Dam	1	5,806	(1)	0	1	13,750	136	6,061	6,061
Moswansicut Reservoir / Dam	1	7,235	(1)	0	1	13,750	136	7,519	7,519
Ponaganset Reservoir / Dam	1	6,612	(1)	0	1	27,500	272	7,022	7,022
Westconnaug Reservoir / Dam	1	3,306	(1)	0	1	13,750	136	3,511	3,511
Reservoir Roads and Fences	1	52,159	(1)	0	1	480,000	16,000	69,522	69,522
Gainer Dam Gate House	1	599	0	0	0	0	0	611	611
60 inch Conduits	2	4,219	0	0	0		0	4,304	4,304
90 inch Steel Aqueduct	1	3,247	0	0	0	0	0	3,312	3,312
Raw Water Booster Pump Station	1	22,481	0	0	0	0	0	22,931	22,931
Electrical Supply System for Treatment Plant	1	111,591	0	0	0	0	0	113,823	113,823
SUB-TOTAL		$246,060						$269,477	$269,477
TREATMENT PLANT FACILITIES									
Treatment Plant Building / Infrastructure	1	86,278	(1)	0	1	1,984,000	26,453	114,986	$114,986
Influent Conduit / Structures	1	11,847	0	0	0	0	0	12,084	12,084
Aeration Basin	1	6,605	0	0	0		0	6,737	6,737
Sedimentation Basins	2	13,530	0	0	0	0	0	13,801	13,801
Filters	18	348,470	(1)	0	1	1,806,000	72,240	429,124	429,124
Venturi Tube Effluent Meters - 12 inch diameter	36	2,679	0	0	0	0	0	2,733	2,733
Clearwell	1	11,740	0	0	0	0	0	11,975	11,975

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Funding Allocation Detail by Facility Category

Section 6

Ending June 30,

Providence Water	No. of Units Beg. Value 01-Jul-99	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY	0.000%
PRINCIPAL COMPONENTS BY CATEGORY			FY - 6/30/19 99		Through 6/30/20 00			Escalated for Inflation @ Perce	2001
Wash Water System	1	2,637	(1)	0	1	67,000	1,658	4,381	4,381
Service Water System	1	1,185	0	0	0		0	1,208	1,208
Ferric Storage/Transfer/Feed System	1	34,827	0	0	0		0	35,524	35,524
Lime Storage/Transfer/Feed System	1	35,260	0	0	0	0	0	35,966	35,966
Chlorine Storage/Transfer/Feed System	1	32,778	0	0	0	0	0	33,433	33,433
Fluoride Storage/Transfer/Feed System	1	3,215	0	0	0	0	0	3,279	3,279
Sludge Handling / Disposal System	1	102,876	(1)	0	1	1,066,000	35,178	140,815	140,815
Process Control / Data Acquisition System	1	301,626	0	0	0		0	307,659	307,659
SUB-TOTAL		$995,554						$1,153,705	$1,153,705
TRANSMISSION SYSTEM									
90 Scituate Tunnel and Aqueduct	1	39,198	0	0	0	0	0	39,982	$39,982
Supplemental Tunnel and Aqueduct	1	36,142	0	0	0	0	0	36,865	36,865
Transmission Mains (Units in inch-feet)	13,031,580	1,463,019	0	0	0	0	0	1,492,279	1,492,279
16									
20									
24									
30									
36									
42									
48									
60									
66									

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Funding Allocation Detail by Facility Category

Section 6

Ending June 30,

Providence Water	No. of Units Beg. Value 01-Jul-99	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY	Deduct Previous FY eleted Earnings	No. of Units Added Current FY	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY	0.000%
PRINCIPAL COMPONENTS BY CATEGORY			FY - 6/30/19 99		Through 6/30/20 00			Escalated for Inflation @ Perce	2001
Transmission Valves	12,794	286,727	(956)	(21,285)	956	587.87	7,493	278,394	278,394
16									
20									
24									
30									
36									
42									
48									
60									
66									
SUB-TOTAL		$1,825,086						$1,847,521	$1,847,521
DISTRIBUTION SYSTEM									
Distribution Mains (Units in inch-feet)	29,675,016	3,894,201	(56,777)	(6,884)	56,777	9.21	6,973	3,972,176	$3,972,176
6									
8									
10									
12									
Distribution Valves	81,752	885,610	(1,400)	(14,327)	1400	374.29	6,987	895,835	895,835
6									
8									
10									
12									

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Funding Allocation Detail by Facility Category

Section 6

Ending June 30,

Providence Water PRINCIPAL COMPONENTS BY CATEGORY	No. of Units Beg. Value 01-Jul-99	Repl. Alloc. Earnings Exist. Facilitys End of Prev. FY	No. of Units Deleted Previous FY FY - 6/30/19 99	Deduct Previous FY eleted Earnings	No. of Units Added Current FY Through 6/30/20 00	Unit Cost of Added Facilities	Repl. Alloc. Earnings of Added Facilities for Current FY	Total Repl. Alloc. Earnings for Current FY Escalated for Inflation @ Perce	0.000% 2001
Services	68,573	4,398,265	(600)	(36,000)	600	1,965.00	15,720	4,465,545	4,465,545
Hydrants	5,264	497,231	(30)	(2,640)	30	2,866.67	1,720	506,237	506,237
Meters	68,573	777,900	(4,500)	(84,600)	4500	94.89	28,467	736,202	736,202
SUB-TOTAL		$10,453,207						$10,575,995	$10,575,995
PUMPING AND STORAGE									
Aqueduct Reservoir and Gatehouse	1	16,074	0	0	0		0	16,396	$16,396
Neutaconkanut Reservoir and Gatehouse	1	20,093	0	0	0		0	20,494	20,494
Longview Reservoir and Gatehouse	1	13,395	0	0	0		0	13,663	13,663
Ridge Road Reservoir	1	2,447	0	0	0		0	2,496	2,496
Garden Hills Pump Station	1	1,072	0	0	0		0	1,093	1,093
Dean Estates Pump Station	1	1,340	0	0	0		0	1,366	1,366
Fruit Hill Pump Station	1	1,550	0	0	0		0	1,581	1,581
Bath Street Pump Station	0	107,161	0	0	0		0	109,304	109,304
Neutaconkanut Pump Station	0	107,161	0	0	0		0	109,304	109,304
Greenville Ave Pump Station	1	447	0	0	0		0	455	455
SUB-TOTAL		$270,738						$276,153	$276,153
BUILDING AND SYSTEM SUPPORT									
Forestry Garage	1	1,804	0	0	0		0	1,840	$1,840
Academy Ave Administration Building	0	32,473	0	0	0		0	33,122	33,122
SUB-TOTAL		$34,277						$34,963	$34,963
Total		$13,824,922						$14,157,813	$14,157,813

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Funding Allocation Detail by Facility Category

Section 7

Ending June 30,														
Providence Water	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
PRINCIPAL COMPONENTS BY CATEGORY	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
RAW WATER SUPPLY														
Scituate Reservoir / Gainer Dam	$28,419	$28,419	$28,419	$28,419	$28,419	$28,419	$28,419	$28,419	$28,419	$28,419	$28,419	$28,419	$28,419	$28,419
Regulating Reservoir / Dam	2,442	2,442	2,442	2,442	2,442	2,442	2,442	2,442	2,442	2,442	2,442	2,442	2,442	2,442
Barden Reservoir / Dam	6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061	6,061
Moswansicut Reservoir / Dam	7,519	7,519	7,519	7,519	7,519	7,519	7,519	7,519	7,519	7,519	7,519	7,519	7,519	7,519
Ponaganset Reservoir / Dam	7,022	7,022	7,022	7,022	7,022	7,022	7,022	7,022	7,022	7,022	7,022	7,022	7,022	7,022
Westconnaug Reservoir / Dam	3,511	3,511	3,511	3,511	3,511	3,511	3,511	3,511	3,511	3,511	3,511	3,511	3,511	3,511
Reservoir Roads and Fences	69,522	69,522	69,522	69,522	69,522	69,522	69,522	69,522	69,522	69,522	69,522	69,522	69,522	69,522
Gainer Dam Gate House	611	611	611	611	611	611	611	611	611	611	611	611	611	611
60 inch Conduits	4,304	4,304	4,304	4,304	4,304	4,304	4,304	4,304	4,304	4,304	4,304	4,304	4,304	4,304
90 inch Steel Aqueduct	3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312	3,312
Raw Water Booster Pump Station	22,931	22,931	22,931	22,931	22,931	22,931	22,931	22,931	22,931	22,931	22,931	22,931	22,931	22,931
Electrical Supply System for Treatment Plant	113,823	113,823	113,823	113,823	113,823	113,823	113,823	113,823	113,823	113,823	113,823	113,823	113,823	113,823
SUB-TOTAL	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**	**$269,477**
TREATMENT PLANT FACILITIES														
Treatment Plant Building / Infrastructure	$114,986	$114,986	$114,986	$114,986	$114,986	$114,986	$114,986	$114,986	$114,986	$114,986	$114,986	$114,986	$114,986	$114,986
Influent Conduit / Structures	12,084	12,084	12,084	12,084	12,084	12,084	12,084	12,084	12,084	12,084	12,084	12,084	12,084	12,084
Aeration Basin	6,737	6,737	6,737	6,737	6,737	6,737	6,737	6,737	6,737	6,737	6,737	6,737	6,737	6,737
Sedimentation Basins	13,801	13,801	13,801	13,801	13,801	13,801	13,801	13,801	13,801	13,801	13,801	13,801	13,801	13,801
Filters	429,124	429,124	429,124	429,124	429,124	429,124	429,124	429,124	429,124	429,124	429,124	429,124	429,124	429,124
Venturi Tube Effluent Meters - 12 inch diameter	2,733	2,733	2,733	2,733	2,733	2,733	2,733	2,733	2,733	2,733	2,733	2,733	2,733	2,733
Clearwell	11,975	11,975	11,975	11,975	11,975	11,975	11,975	11,975	11,975	11,975	11,975	11,975	11,975	11,975

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Funding Allocation Detail by Facility Category

Section 7

Ending June 30,

Providence Water														
	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
PRINCIPAL COMPONENTS BY CATEGORY	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Wash Water System	4,381	4,381	4,381	4,381	4,381	4,381	4,381	4,381	4,381	4,381	4,381	4,381	4,381	4,381
Service Water System	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208
Ferric Storage/Transfer/Feed System	35,524	35,524	35,524	35,524	35,524	35,524	35,524	35,524	35,524	35,524	35,524	35,524	35,524	35,524
Lime Storage/Transfer/Feed System	35,966	35,966	35,966	35,966	35,966	35,966	35,966	35,966	35,966	35,966	35,966	35,966	35,966	35,966
Chlorine Storage/Transfer/Feed System	33,433	33,433	33,433	33,433	33,433	33,433	33,433	33,433	33,433	33,433	33,433	33,433	33,433	33,433
Fluoride Storage/Transfer/Feed System	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279	3,279
Sludge Handling / Disposal System	140,815	140,815	140,815	140,815	140,815	140,815	140,815	140,815	140,815	140,815	140,815	140,815	140,815	140,815
Process Control / Data Acquisition System	307,659	307,659	307,659	307,659	307,659	307,659	307,659	307,659	307,659	307,659	307,659	307,659	307,659	307,659
SUB-TOTAL	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705	$1,153,705
TRANSMISSION SYSTEM														
90 Scituate Tunnel and Aqueduct	$39,982	$39,982	$39,982	$39,982	$39,982	$39,982	$39,982	$39,982	$39,982	$39,982	$39,982	$39,982	$39,982	$39,982
Supplemental Tunnel and Aqueduct	36,865	36,865	36,865	36,865	36,865	36,865	36,865	36,865	36,865	36,865	36,865	36,865	36,865	36,865
Transmission Mains (Units in inch-feet)	1,492,279	1,492,279	1,492,279	1,492,279	1,492,279	1,492,279	1,492,279	1,492,279	1,492,279	1,492,279	1,492,279	1,492,279	1,492,279	1,492,279
16														
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36														
42														
48														
60														
66														

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Funding Allocation Detail by Facility Category

Section 7

Ending June 30,														
Providence Water														
	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
PRINCIPAL COMPONENTS BY CATEGORY	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Transmission Valves	278,394	278,394	278,394	278,394	278,394	278,394	278,394	278,394	278,394	278,394	278,394	278,394	278,394	278,394
16														
20														
24														
30														
36														
42														
48														
60														
66														
SUB-TOTAL	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521	$1,847,521
DISTRIBUTION SYSTEM														
Distribution Mains (Units in inch-feet)	$3,972,176	$3,972,176	$3,972,176	$3,972,176	$3,972,176	$3,972,176	$3,972,176	$3,972,176	$3,972,176	$3,972,176	$3,972,176	$3,972,176	$3,972,176	$3,972,176
6														
8														
10														
12														
Distribution Valves	895,835	895,835	895,835	895,835	895,835	895,835	895,835	895,835	895,835	895,835	895,835	895,835	895,835	895,835
6														
8														
10														
12														

Exhibit - 6

Funding Allocation Detail by Facility Category

Section 7

Ending June 30,

Providence Water														
	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
PRINCIPAL COMPONENTS BY CATEGORY	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Services	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545	4,465,545
Hydrants	506,237	506,237	506,237	506,237	506,237	506,237	506,237	506,237	506,237	506,237	506,237	506,237	506,237	506,237
Meters	736,202	736,202	736,202	736,202	736,202	736,202	736,202	736,202	736,202	736,202	736,202	736,202	736,202	736,202
SUB-TOTAL	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995	$10,575,995
PUMPING AND STORAGE														
Aqueduct Reservoir and Gatehouse	$16,396	$16,396	$16,396	$16,396	$16,396	$16,396	$16,396	$16,396	$16,396	$16,396	$16,396	$16,396	$16,396	$16,396
Neutaconkanut Reservoir and Gatehouse	20,494	20,494	20,494	20,494	20,494	20,494	20,494	20,494	20,494	20,494	20,494	20,494	20,494	20,494
Longview Reservoir and Gatehouse	13,663	13,663	13,663	13,663	13,663	13,663	13,663	13,663	13,663	13,663	13,663	13,663	13,663	13,663
Ridge Road Reservoir	2,496	2,496	2,496	2,496	2,496	2,496	2,496	2,496	2,496	2,496	2,496	2,496	2,496	2,496
Garden Hills Pump Station	1,093	1,093	1,093	1,093	1,093	1,093	1,093	1,093	1,093	1,093	1,093	1,093	1,093	1,093
Dean Estates Pump Station	1,366	1,366	1,366	1,366	1,366	1,366	1,366	1,366	1,366	1,366	1,366	1,366	1,366	1,366
Fruit Hill Pump Station	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581
Bath Street Pump Station	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304
Neutaconkanut Pump Station	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304	109,304
Greenville Ave Pump Station	455	455	455	455	455	455	455	455	455	455	455	455	455	455
SUB-TOTAL	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153	$276,153
BUILDING AND SYSTEM SUPPORT														
Forestry Garage	$1,840	$1,840	$1,840	$1,840	$1,840	$1,840	$1,840	$1,840	$1,840	$1,840	$1,840	$1,840	$1,840	$1,840
Academy Ave Administration Building	33,122	33,122	33,122	33,122	33,122	33,122	33,122	33,122	33,122	33,122	33,122	33,122	33,122	33,122
SUB-TOTAL	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963	$34,963
Total	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813	$14,157,813

EXHIBIT - 7

Table of Economic Lives

EXHIBIT - 7 is a Table of Economic Lives as established by the Regulations developed under the Act and by Providence Water consistent with our examination and analysis. Generally we assign longer lives to the facilities than the Regulations, which in turn will generate fewer dollars for replacement because longer periods are required to accumulate the funds needed.

Providence Water's Remaining Practical Lives and, separately, Standard Economic Lives, are based on our best estimates and projections consistent with conditions as we know them now. We believe that using the shorter lives would require more funding than the rate payers can reasonably absorb now. At the same time, we believe that the program needs to be re-evaluated before the end of 1998.

EXHIBIT - 7
Table of Economic Lives

Providence Water
Infrastructure Replacement Plan

Ending June 30, 1995

Principal Components By Category	NARUC Code	DOH Reg.s Life Expectancy	Providence Water Practical Life Remaining	Providence Water Standard Life New Facilities
RAW WATER SUPPLY				
Scituate Reservoir / Gainer Dam	312	75	100	150
Regulating Reservoir / Dam	312	75	75	100
Barden Reservoir / Dam	312	75	75	100
Moswansicut Reservoir / Dam	312	75	75	100
Ponaganset Reservoir / Dam	312	75	75	100
Westconnaug Reservoir / Dam	312	75	75	100
Reservoir Roads and Fences	312	40	20	30
Gainer Dam Gate House	312	40	50	100
60 inch Conduits	316	75	50	100
90 inch Steel Aqueduct	316	75	50	100
Raw Water Booster Pump Station	321	25	30	50
Electrical Supply System for Treatment Plant	332	20	1	25
TREATMENT PLANT FACILITIES				
Treatment Plant Building / Infrastructure	331	40	25	75
Influent Conduit / Structures	316	40	30	75
Aeration Basin	332	40	5	75
Sedimentation Basins	332	40	20	75
Filters	332	40	5	25
Venturi Tube Effluent Meters - 12 inch diameter	332	30	10	30
Clearwell	332	40	50	75
Wash Water System	332	40	20	40
Service Water System	332	40	20	40
Ferric Storage/Transfer/Feed System	332	20	5	20
Lime Storage/Transfer/Feed System	332	20	5	20
Chlorine Storage/Transfer/Feed System	332	20	5	20
Fluoride Storage/Transfer/Feed System	332	20	5	20
Sludge Handling / Disposal System	332	50	10	30
Process Control / Data Acquisition System	332	15	1	15

EXHIBIT - 7

Table of Economic Lives

Providence Water
Infrastructure Replacement Plan

Ending June 30, 1995

Principal Components By Category	NARUC Code	DOH Reg.s Life Expectancy	Providence Water Practical Life Remaining	Providence Water Standard Life New Facilities
TRANSMISSION SYSTEM				
90 Scituate Tunnel and Aqueduct	316	50	50	100
Supplemental Tunnel and Aqueduct	316	50	50	100
Transmission Mains (Units in inch-feet)	343	75	50	100
Transmission Valves	343	75	25	75
DISTRIBUTION SYSTEM				
Distribution Mains (Units in inch-feet)	343	75	50	75
Distribution Valves	343	75	25	75
Services	345	50	25	75
Hydrants	348	50	25	50
Meters	346	15	5	15
PUMPING AND STORAGE				
Aqueduct Reservoir and Gatehouse	342	50	50	75
Neutaconkanut Reservoir and Gatehouse	342	50	40	75
Longview Reservoir and Gatehouse	342	50	40	75
Ridge Road Reservoir	342	50	40	50
Garden Hills Pump Station	321	25	20	30
Dean Estates Pump Station	321	25	20	30
Fruit Hill Pump Station	321	25	25	30
Bath Street Pump Station	321	25	1	30
Neutaconkanut Pump Station	321	25	1	30
Greenville Ave Pump Station	321	25	30	30
BUILDING AND SYSTEM SUPPORT				
Forestry Garage	311	40	30	75
Administration Building	390	40	10	50

EXHIBITS - 8, 9, 10, & 11

Facsimiles of Account Ledgers

EXHIBIT - 8, Facsimile of Account Ledger for Distribution Mains

EXHIBIT - 9, Facsimile of Account Ledger for Pumping Stations

EXHIBIT - 10, Facsimile of Account Ledger for Filters

EXHIBIT - 11, Facsimile of Account Ledger Summary

The EXHIBITS listed above are samples of Account Ledgers. EXHIBIT - 11 is the Summary of the aggregate of such Ledgers. Each Ledger depicts the approach by which infrastructure revenue allocation will be tracked in accordance with the Revenue Generation Module, how actual revenue will be recorded within each facility's Account Ledger, how funds will be tracked when expended and when loaned from one category to another, and finally when repaid to the respective facility category from which it was borrowed.

These Ledgers are not necessarily the final record but are samples to demonstrate how data will be kept and how equity will be controlled between categories and within each facility category. Our new Financial System and our new Work Order System will feed directly into our Asset System. Ledgers similar to these EXHIBITS will be used for all of our assets and will also track deletions and additions of units consistent with accepted accounting practices.

EXHIBIT - 8

Facsimile of Account Ledger - Disribution Mains

Infrastructure Replacement History - Mains 6"

(Example of Tabulation)

Year	Planned	Allocated	To other (-) From Other (+) Loaned	To other (-) From Other (+) Repaid	On Hand	Construction (-) Expended	Cum. Avail.	To other (-) From Other (+) Cum. Due	Notes
1994	200,000	180,000			180,000	(170,000)	10,000	0	Replaced x' 6", y' 8"
1995	202,266	190,000	(80,000)		110,000		120,000	80,000	Loaned to Filters
1996	202,266	203,000	(80,000)		123,000		243,000	160,000	Loaned to Filters
1997	202,266	203,000			203,000		446,000	160,000	
1998	202,266	203,000	(160,000)		43,000	(400,000)	89,000	320,000	Loaned to Filters & Replaced z' 12", w' 16"
1999	207,599	208,000			208,000	(290,000)	7,000	320,000	Replaced m' 12", n' 16"
2000					0		7,000	320,000	
2001					0		7,000	320,000	
2002					0		7,000	320,000	
2003					0		7,000	320,000	
2004							7,000	320,000	
(Note: Insert rows here)									
Cumul.. to Date	**$1,216,663**	**$1,187,000**	**($320,000)**	**$0**	**$867,000**	**($860,000)**			
Alloc'd vs Planned		*($29,663)*							
Repaid vs Loaned				*($320,000)*					
Exp'd vs. Allocated						*($327,000)*			
Exp'd vs. Planned						*($356,663)*			
By: ROR									

EXHIBIT - 9

Facsimile of Account Ledger - Pumping Stations

Infrastructure Replacement History - Pumping Stations

(Example of Tabulation)

Year	Planned	Allocated	To other (-) From Other (+) Loaned	To other (-) From Other (+) Repaid	On Hand	Construction (-) Expended	Cum. Avail.	To other (-) From Other (+) Cum. Due	Notes
1994	25,000	23,000			23,000		23,000	0	
1995	25,000	24,000	(30,000)		(6,000)		17,000	30,000	Loaned to Filters
1996	25,000	25,000			25,000		42,000	30,000	
1997	25,000	26,000			26,000		68,000	30,000	
1998	25,000	25,000			25,000	(90,000)	3,000	30,000	Replaced Pump No. p
1999	25,000	25,000			25,000		28,000	30,000	
2000					0		28,000	30,000	
2001					0		28,000	30,000	
2002					0		28,000	30,000	
2003					0		28,000	30,000	
2004							28,000	30,000	
(Note: Insert rows here)									
Cumul.. to Date	**$150,000**	**$148,000**	**($30,000)**	**$0**	**$118,000**	**($90,000)**			
Alloc'd vs Planned		*($2,000)*							
Repaid vs Loaned				*($30,000)*					
Exp'd vs. Allocated						*($58,000)*			
Exp'd vs. Planned						*($60,000)*			
By: ROR									

EXHIBIT - 10

Facsimile of Account Ledger - Filters

Infrastructure Replacement History - Filters

(Example of Tabulation)

1600

Year	Planned	Allocated	To other (-) From Other (+) Loaned	To other (-) From Other (+) Repaid	On Hand	Construction (-) Expended	Cum. Avail.	To other (-) From Other (+) Cum. Due	Notes
1994	25,000	22,000			22,000		22,000	0	
1995	26,600	27,000	110,000		137,000	(80,000)	79,000	(110,000)	Borrowed from Mains 80K +Pumps 30K & Replc'd Filter No. n
1996	28,200	28,000	80,000		108,000	(80,000)	107,000	(190,000)	Borrowed from Mains 80K & Replc'd Filter No. n+1
1997	28,200	28,000			28,000		135,000	(190,000)	
1998	31,400	32,000	160,000		192,000	(160,000)	167,000	(350,000)	Borrowed from Mains 160K & Replc'd Filter No. n+2,3
1999	31,400	30,000			30,000	(160,000)	37,000	(350,000)	Replacrd filters No. n+4,5
2000					0		37,000	(350,000)	
2001					0		37,000	(350,000)	
2002					0		37,000	(350,000)	
2003					0		37,000	(350,000)	
2004							37,000	(350,000)	
(Note: Ins									
Cumul.	**$170,800**	**$167,000**	**$350,000**	**$0**	**$517,000**	**($480,000)**			
Alloc'd		*($3,800)*							
Repaid				*$350,000*					
Exp'd v						*$313,000*			
Exp'd v						*$309,200*			
By: ROR									

EXHIBIT - 11

Facsimile of Category Account Ledger Summary

Infrastructure Replacement History - Summary

(Example of Tabulation)

Year	Planned	Allocated	To other (-) From Other (+) Loaned	To other (-) From Other (+) Repaid	On Hand	Construction (-) Expended	Cum. Avail.	To other (-) From Other (+) Cum. Due
1994	250,000	225,000	0	0	225,000	(170,000)	55,000	0
1995	253,866	241,000	0	0	241,000	(80,000)	216,000	0
1996	255,466	256,000	0	0	256,000	(80,000)	392,000	0
1997	255,466	257,000	0	0	257,000	0	649,000	0
1998	258,666	260,000	0	0	260,000	(650,000)	259,000	0
1999	263,999	263,000	0	0	263,000	(450,000)	72,000	0
2000	0	0	0	0	0	0	72,000	0
2001	0	0	0	0	0	0	72,000	0
2002	0	0	0	0	0	0	72,000	0
2003	0	0	0	0	0	0	72,000	0
2004	0	0	0	0	0	0	72,000	0
(Note: Insert rows here)								
Cumul.. to Date	**$1,537,463**	**$1,502,000**	**$0**	**$0**	**$1,502,000**	**($1,430,000)**		
Alloc'd vs Planned		*($35,463)*						
Repaid vs Loaned				*$0*				
Exp'd vs. Allocated						*($72,000)*		
Exp'd vs. Planned						*($107,463)*		
By: ROR								

Infrastructure Replacement Expenditure Plan

• Description of Expenditure Plan

The Providence Water system is the principal water supply system in the State of Rhode Island, providing water to approximately two-thirds of the State's population. The system dates back to the 1870s when water was first drawn from the Pawtuxet River at Pettaconsett in the City of Cranston and the first water service connection was opened on December 1, 1871. In order to meet the growing demands of the system, a new source of supply for the system was developed in the 1920s, consisting of the construction of the Scituate Reservoir and a treatment plant on the north branch of the Pawtuxet River. Since that time, the system has continued to expand where today it consists of almost 70,000 service connections serving almost two-thirds of the State of Rhode Island through a system of storage tanks, pumping stations, and 880 miles of transmission and distribution mains.

Subsequent to its original construction in the 1920s, Providence Water undertook expansion and capital improvement programs in the 1940s and again in the '60s and early '70s. In the context of replacement work, this consisted primarily of improvements to the treatment plant and pumping stations. Since that time, no significant replacement work has been done at these facilities. In the area of transmission and distribution, there has never been a formal program of infrastructure replacements since the system was originally created. A full 28% of all water mains and a substantial number of valves date all the way back to the 1800s.

Over the past five years, Providence water has worked on developing, and is in the process of implementing, a proactive infrastructure replacement program intended to reverse the trend of aging and deterioration. Providence Water has conducted a comprehensive facility needs assessment study of its system. This information has been utilized to develop the following long-term Infrastructure Replacement (IFR) plans that will begin the process of restoring the integrity of the water system.

Project needs have been established by Providence Water based on assessments by staff of the system's facilities' age and condition, along with data from various studies and evaluations conducted with the assistance of consulting firms over recent years. Project needs are based on the best information and assessments available at this point in time and will be adjusted and/or modified as changing needs, priorities, or regulatory requirements may necessitate.

Exhibit - 12 is a summary of planned IFR expenditures over the next 20 years aggregated according to major system categories. Exhibit - 13 is a detail of planned infrastructure improvements over the next five-year period covering the years 1996 to 2000 on a specific project-by-project basis. Exhibit - 14 is a summary of infrastructure replacement plans over the following 15-year period from 2001 to 2015, summarized according to the major components of the system. All expenditure estimates include a 2% annual inflationary cost adjustment.

The IFR plan has been trimmed back from what would be considered an ideal or theoretical replacement-needs scenario based on the normal expected lives of facilities. More aggressive replacements could be planned, especially in the area of the transmission and distribution system. The schedule for the expenditure of replacements has been made to fit projected revenues. A detailed description of the water supply system, including an overview map, process schematic, and list of major system components, can be found in the section entitled "Facilities Description."

❑

EXHIBIT - 12

20-Year IFR Expenditure Plan by 5-Year phases

EXHIBIT - 12 is a summary of infrastructure replacement expenditure forecasts for the next 20 years, aggregated by major system category into four separate 5-year plan increments. The first 5-year period summarizes the expenditure plan of the more detailed and specific 5-year program which follows as EXHIBIT - 13. The three remaining 5-year aggregations represent a summary of the latter 15 years of the IFR plan which is shown in EXHIBIT - 14. All expenditure estimates include a 2% annual inflationary cost adjustment.

EXHIBIT - 12

PROVIDENCE WATER

20 YEAR IFR EXPENDITURE PLAN BY 5 YEAR PHASES

Fiscal Years 1996 To 2015

PROJECT DESCRIPTION	TOTAL PROJECT COST	FY 1996 to FY 2000 Budget Amount	FY 2001 to FY 2005 Budget Amount	FY 2006 to FY 2010 Budget Amount	FY 2011 to FY 2015 Budget Amount
RAW WATER SUPPLY	$11,606,000	$2,706,000	$3,800,000	$2,400,000	$2,700,000
TREATMENT PLANT FACILITIES	$31,028,000	$20,598,000	$8,200,000	$1,230,000	$1,000,000
TRANSMISSION SYSTEM	$27,181,000	$1,381,000	$1,000,000	$11,800,000	$13,000,000
DISTRIBUTION SYSTEM	$119,051,000	$12,751,000	$31,200,000	$37,100,000	$38,000,000
PUMPING AND STORAGE	$7,628,000	$5,928,000	$300,000	$600,000	$800,000
SUPPORT SYSTEMS AND FACILITIES	$7,721,000	$921,000	$6,800,000		
TOTAL AMOUNT	$204,215,000	$44,285,000	$51,300,000	$53,130,000	$55,500,000

EXHIBIT - 13

5-Year IFR Expenditure Plan / Fiscal Years 1996 - 2000

EXHIBIT 13 is a detail of the planned infrastructure replacement program over the 5-year period from FY 1996 to FY 2000. The plan is detailed on a project- by-project basis with projects grouped according to functional categories within the system. Project needs are based on the best available information and assessments available at this point in time. The plan will be adjusted and/or modified as changing needs and priorities may require. All expenditure estimates include a 2% annual inflationary cost adjustment. The tabular project listing is followed by a brief narrative overview of the scope of each project.

EXHIBIT - 13

PROVIDENCE WATER

5 YEAR IFR EXPENDITURE PLAN

Fiscal Years 1996 To 2000

Project Description	5 Year Budget Estimate	FY 1996 Budget Amount	FY 1997 Budget Amount	FY 1998 Budget Amount	FY 1999 Budget Amount	FY 2000 Budget Amount
RAW WATER SUPPLY						
Study / evaluation of secondary dams	**$43,000**		$43,000			
Rehabilitate Burton Pond Dam	**$33,000**	$33,000				
Structural rehabilitation Tunk Hill fire tower	**$13,000**					$13,000
Rehab. access roads/fencing watershed area	**$793,000**				$393,000	$400,000
Improvements to large dams	**$1,824,000**	$16,000	$1,000,000	$264,000	$269,000	$275,000
Sub-total	**$2,706,000**	**$49,000**	**$1,043,000**	**$264,000**	**$662,000**	**$688,000**
TREATMENT PLANT FACILITIES						
Central control board replacement	**$2,390,000**	$200,000	$2,190,000			
Chlorine room modifications	**$460,000**	$60,000	$400,000			
Corrosion protection twin 60 inch mains	**$260,000**	$250,000	$10,000			
Emergency by-pass rehabilitation	**$165,000**			$165,000		
Auxilary wash and blower system for filters	**$314,000**	$46,000	$268,000			
Replace sand filters	**$6,960,000**	$70,000	$410,000	$2,314,000	$2,360,000	$1,806,000
Rehabilitate interior of clearwell	**$509,000**			$252,000	$257,000	
Concrete repairs effluent clearwell yard	**$267,000**			$132,000	$135,000	
Lime Silo - Replace dust bin, shaker, and motor	**$19,000**			$19,000		
Purification Plant lab space modifications	**$156,000**			$77,000	$79,000	
Replace effluent valve actuators	**$328,000**	$41,000	$142,000	$145,000		
Replace lime feed equipment	**$346,000**	$31,000	$315,000			
Replace ferric feed system	**$530,000**	$530,000				
Replace electronic process monitoring equipment	**$62,000**			$62,000		
Upgrade Service Water / Wash Water System Controls	**$20,000**			$20,000		
Sludge handling / disposal	**$2,976,000**		$431,000	$732,000	$747,000	$1,066,000

EXHIBIT - 13

PROVIDENCE WATER

5 YEAR IFR EXPENDITURE PLAN

Fiscal Years 1996 To 2000

Project Description	5 Year Budget Estimate	FY 1996 Budget Amount	FY 1997 Budget Amount	FY 1998 Budget Amount	FY 1999 Budget Amount	FY 2000 Budget Amount
Hydr. rehab. influent aerator - nozzles and valves	**$47,000**			$47,000		
Structural rehabilitation wash water tank	**$67,000**					$67,000
Treatment Plant heating system upgrade	**$506,000**					$506,000
Treatment Plant replace windows	**$327,000**					$327,000
Treatment plant - Replace exterior panels	**$813,000**					$813,000
Treatment Plant roof/insulation	**$808,000**		$808,000			
Treatment Plant - Replace boilers & water heaters	**$147,000**	$147,000				
Upgr. Electrical Supply System to Treatment Plant	**$903,000**	$707,000	$196,000			
Influent Structure - replace valve stems	**$38,000**		$38,000			
Treatment Plant - Replace Emergency Generator	**$482,000**				$482,000	
Wash Water Tank - replace check valves	**$29,000**		$29,000			
Convert secondary voltage from 550V to 480V	**$669,000**				$331,000	$338,000
Sub-total	**$20,598,000**	**$2,082,000**	**$5,237,000**	**$3,965,000**	**$4,391,000**	**$4,923,000**
TRANSMISSION SYSTEM						
Replace 16 inch & larger valves (1871-1900)	**$1,381,000**			$337,000	$482,000	$562,000
Sub-total	**$1,381,000**	**$0**	**$0**	**$337,000**	**$482,000**	**$562,000**
DISTRIBUTION SYSTEM						
Replace / upgrade water mains	**$1,899,000**		$394,000	$469,000	$513,000	$523,000
Replace distribution valves	**$1,779,000**	$242,000	$247,000	$252,000	$514,000	$524,000
Replace fire hydrants	**$415,000**	$80,000	$81,000	$83,000	$85,000	$86,000
Replace lead services	**$4,074,000**	$236,000	$370,000	$1,133,000	$1,156,000	$1,179,000
Replace water meters	**$4,584,000**	$284,000	$1,738,000	$1,717,000	$418,000	$427,000
Sub-total	**$12,751,000**	**$842,000**	**$2,830,000**	**$3,654,000**	**$2,686,000**	**$2,739,000**

EXHIBIT - 13

PROVIDENCE WATER

5 YEAR IFR EXPENDITURE PLAN

Fiscal Years 1996 To 2000

Project Description	5 Year Budget Estimate	FY 1996 Budget Amount	FY 1997 Budget Amount	FY 1998 Budget Amount	FY 1999 Budget Amount	FY 2000 Budget Amount
PUMPING AND STORAGE						
Neutaconkanut reservoir - inspect / rehabilitation	**$895,000**				$443,000	$452,000
Aqueduct reservoir - inspect / rehabilitation	**$143,000**		$143,000			
Various Pump Stations - Electronic equipment upgrades	**$79,000**			$79,000		
Neutaconkanut Gate House - replace roof	**$4,000**		$4,000			
Garden Hills P. S. - replace roof	**$4,000**		$4,000			
Aqueduct Siphon Chamber - replace roof	**$4,000**		$4,000			
Raw Water BPS Generator - upgrade generator	**$184,000**	$120,000	$64,000			
Raw Water BPS rehabilitation - replace valves	**$453,000**			$453,000		
Rehab. roads/fencing pump stations / trans. lines	**$218,000**	$21,000	$21,000	$43,000	$66,000	$67,000
Longview reservoir - structural rehabilitation	**$311,000**		$311,000			
Upgrade Bath St. pump station	**$1,961,000**	$249,000	$1,712,000			
Upgrade Neutaconkanut pump station	**$1,672,000**	$199,000	$1,473,000			
Sub-total	**$5,928,000**	**$589,000**	**$3,736,000**	**$575,000**	**$509,000**	**$519,000**
SUPPORT SYSTEMS AND FACILITIES						
Academy Ave heating system	**$120,000**					$120,000
Academy Ave roof / insulation	**$60,000**	$60,000				
Academy Ave. ventilation improvements	**$272,000**					$272,000
Forestry garage roof / insulation	**$142,000**					$142,000
Remove / replace underground storage tanks	**$327,000**		$101,000	$112,000	$114,000	
Sub-total	**$921,000**	**$60,000**	**$101,000**	**$112,000**	**$114,000**	**$534,000**
Total IFR Project Cost	**$44,285,000**	**$3,622,000**	**$12,947,000**	**$8,907,000**	**$8,844,000**	**$9,965,000**

5 - Year IFR Expenditure Plan

Project Overview Fiscal Years 1996 - 2000

RAW WATER SUPPLY

Study / Evaluation of Secondary Dams

A study is planned to evaluate the condition of the secondary dams and to develop a scope of work and a priority of needed improvements for the rehabilitation of the dams.

Rehabilitate Burton Pond Dam

This earth/masonry secondary dam has breached in one location. This breached area needs to be reconditioned. Rip-rap slope protection needs to be installed along the top upstream face of the dam to provide continued protection.

Structural Rehabilitation Tunk Hill Fire Tower

Rehabilitative work is needed on the fire tower to include correcting surface corrosion on the structural steel, replacing the concrete footings where cracks and spalling are present, and replacing all broken treads and safety screening.

Rehabilitate Access Roads and Fencing

Consists of rehabilitating a portion of the approximate 40 linear miles of existing fencing and 60 miles of access roads and lanes that exist within the watershed and Providence Water-owned property. The fences and access roads date back to their original construction in the 1920's and are generally in poor condition.

Improvements to Large Dams

Various structural and hydraulic upgrade work is needed on the principal dams in the watershed including the main Gainer Dam and the five tributary reservoir dams. The 400-foot long Gainer Dam concrete spillway needs complete rehabilitation. Structural rehabilitation is needed to correct undermining of the Regulation Dam spillway structure footing. General concrete restoration and slope protection improvements are needed at the tributary dams.

TREATMENT PLANT FACILITIES

Process Control / Data Acquisition System

The existing central control board which monitors and controls the operation of the treatment plant and remote facilities dates back to the 1960s and is obsolete. A new modern state of the art computerized plant and facility process control and SCADA system needs to be installed.

Chlorine Room Rehabilitation

Modifications to the chlorination system are needed to replace obsolete chlorine feed equipment and storage equipment. The chlorine storage room needs to be enlarged and provided with outside access only to address safety concerns. A new emergency ventilation system is needed.

Corrosion Protection Twin 60-inch Mains

The twin 60-inch steel mains running under Gainer Dam which feed the treatment plant are visibly undergoing corrosion in a number of areas. The mains need to be rehabilitated and recoated. Buried portions of the main need to be exposed and evaluated for subterranean corrosion.

Emergency Bypass - Rehabilitation

The treatment plant's concrete emergency bypass conduit needs work, including rehabilitation of the sluice gates and access ladders. Some concrete restoration work is also anticipated.

Auxiliary Wash and Blower System for Filters

The filters at the treatment plant are scheduled for replacement. The existing mono-media sand filters are being replaced with multimedia filters and new underdrain systems which will require air scour backwashing An air delivery system needs to be installed to provide for the backwashing process.

Upgrade Sand Filters

The filter media in the plant filters dates back to the 1960s and parts of the underdrain system date back to the plant's original construction in the 1920s. Two of the filters have failed and are presently out of service. Plans are to replace the mono-media sand system with multimedia filters and to install new filter underdrain systems. The new filter media will increase the filtration capacity of the filters. Plans are to upgrade 12 of the 18 filters over the five-year period.

Rehabilitate Interior of Clearwell

The interior of the clearwell has never been inspected due to difficulty of access. A new access hatch has recently been installed. An interior inspection of the clearwell is planned to determine the scope of any needed rehabilitative work. At this point, the scope of concrete rehabilitative

work is being estimated based on the extent of necessary concrete rehabilitative work that was required and recently completed in the adjacent pipe gallery wall.

Concrete Repairs Effluent Clearwell Yard

The concrete surface of the effluent clearwell yard is spalling, cracking and deteriorating. Complete rehabilitation of the concrete surface is necessary.

Lime Silo - Replace Dust Bin, Shaker, and Motor

Various components of the lime silo equipment are in poor condition and/or no longer operable, including the dust bin, shaker and motor assemblies. These need to be replaced.

Purification Plant Lab Space Modifications

The laboratory is in need of improvements and upgrading as was identified in the O'Brien & Gere Facility Needs Assessment Study (1989). These are primarily related to safety concerns and include improvements to the ventilation system, provision of adequate bench space and adequate facilities for the proper storage of chemicals.

Replace Effluent Valve Actuators

The 36 effluent valve actuators which control the plant effluent are old and need to be replaced with new actuators to provide reliable control of plant effluent rates. Twelve (12) of these have just been replaced. The remaining 24 need to be replaced.

Replace Lime Feed Equipment

The existing lime feeders date back to the 1960s and are obsolete and need to be replaced. Additionally, the lime feed process needs to be modified to provide the corrosion control measures necessary as a result of the lead and copper rule. Improvements consist of replacing the lime feeders and modifying the ejection piping to provide for an additional lime injection point prior to raw water aeration.

Replace Ferric Feed Equipment

The existing dry chemical feeders date back to the 1960s and are obsolete. The handling and feeding of granular chemical have also proved to be problematical through the years. Plans are to convert to a more reliable liquid ferric feed system. The existing dry feed system is being

replaced with a liquid feed system consisting of new chemical storage tanks, new feeder pumps, controls and piping.

Replace Electronic Process Monitoring Equipment

Consists of replacing the in-plant chlorine residual monitors and filter elevation monitor with new more reliable equipment.

Upgrade Service Water / Wash Water System Controls

Consists of upgrading the motor controls and wiring for both the service water and washwater pumping and storage equipment.

Sludge Handling/Disposal

Lagoon #1 is virtually full and there is limited storage available in Lagoon #2. Accumulated residuals in Lagoon #1 need to be removed to provide for replacement of the lost storage capacity. Plans are to hydraulically dredge, de-water and properly dispose of the accumulated residuals in this lagoon over a four-year period.

Hydraulic Rehabilitation Influent Aerator - Nozzles and Valves

Consists of replacing three (3) 12-inch valves and replacement of the approximately 370 worn aerator nozzles.

Structural Rehabilitation Wash Water Tank

Consists of rehabilitating the interior of the concrete washwater storage tank and the deteriorated brickwork surrounding the 48-inch diameter inlet/outlet pipe.

Treatment Plant Heating System Upgrade

Upgrades are needed to the heating system at the treatment plant to include replacing unit heaters, piping, circulating pumps, and temperature control system.

Treatment Plant - Replace Windows

The existing windows are old, poorly functioning and are not energy efficient. Plans are to replace the windows in the Filter Gallery and the Chemical and Control Building with new energy efficient units.

Treatment Plant - Replace Exterior Panels

The exterior metal panels of the treatment plant building are faded and deteriorating. They need to be replaced with new panels.

Treatment Plant Roof/Insulation

The entire roof at the treatment plant needs to be replaced. The existing roof dates back to the 1960s. Problems include poor drainage, ponding and leakage.

Treatment Plant - Replace Boilers and Water Heaters

The water heaters and boilers at the plant are old and failing and need to be replaced. The water heaters and boilers provide heat for the building, and hot water for domestic use and for the treatment process.

Upgrade Electrical Supply System to Treatment Plant

The electrical transmission equipment and substation feeding the treatment plant date back to their original installation in the 1920s and are obsolete, unsafe and unreliable. The project consists of A) the replacement and relocation of the existing substation; B) rehabilitation of the existing high voltage sub-transmission line from the Hope substation to the new substation; C) replacement of the existing underground electrical feeders to the treatment plant with new aboveground feeders, and; D) provision of a 480-volt transformer and feed line into the plant.

Influent Structure - Replace Valve Stems

Consists of replacing the valve stems for the control valves at the influent structure at the treatment plant.

Treatment Plant - Replace Emergency Generator

The existing 175 kW emergency generator at the plant needs to be replaced with a higher capacity unit. Additional plant loads, including the installation of the air delivery system for filter backwashing will require additional backup generation capacity.

Washwater Tank - Replace Check Valves

The two 18-inch check valves on the washwater pump suction lines no longer function properly and need to be replaced. Two new check valves need to be installed.

Treatment Plant - Upgrade Electrical System - 550V to 480V

The existing electrical system at the treatment plant is old and is a nonstandard 550-volt system. Electrical components for this system are more expensive and difficult to obtain. The system needs to be updated and modernized and converted to a standard 480-volt system.

TRANSMISSION SYSTEM

Replace 16-inch and Larger Valves

Because of their size, the ability to successfully operate these valves when needed is critical in an emergency shutdown. Plans are to begin replacing these valves, beginning with the oldest first. Initially targeted in the first five years is the replacement of all transmission valves installed prior to 1900. This involves the replacement of 105 valves ranging in size from 16 to 42 inches.

DISTRIBUTION SYSTEM

Replace / Upgrade Water Mains

The Providence Water system consists of approximately 785 miles of pipe ranging in size from 6 to 12 inches. Of these mains, a full 28% were installed prior to the turn of the century and will be candidates for upgrading or replacement. The first order of priority in the first five years will be to target the 70 individual dead-end mains in the system that have been identified as "bleeder mains." Generally, these are mains where years ago a continuously running small diameter bleeder pipe had been installed at the end of the main in order to alleviate rusty water complaints resulting from the dead-ended condition of the unlined cast iron pipes. In most cases, the only solution is to replace the entire main.

Replace Distribution Valves

Of the approximately 12,000 valves in the system, 1,740 have been identified as 6-inch, 8-inch, and 12-inch diameter valves having been installed prior to the year 1900. Initial plans during the first five years are to replace approximately 40% of these pre-1900 valves. Valve replacements will generally be prioritized by age. In accordance with current practice, emphasis will continue to be given to replacements in areas of local and state road resurfacing projects.

Replace Fire Hydrants

As part of Providence Water's improvement program, essentially all pre-1950 hydrants in the system have been replaced over the last few years. At this point, hydrant replacements over the next few years are expected to remain at current levels of approximately 30 hydrants per year, as a result of hydrants being damaged or becoming defective.

Replace Services

As a result of lead testing within the system and under the current requirements of the Lead and Copper Rule, it is not required that Providence Water replace lead services. Providence Water is currently replacing lead services however, with concentration on replacing lead services in conjunction with street resurfacing projects, customer requests and/or sites being identified by the Department of Health as having lead contamination problems, even though primarily from sources other than water. Plans are to replace approximately 2,000 services over the next five years.

Replace Water Meters

Plans are to essentially replace all older non-encoded customer water meters which have outlived their standard useful life with new meters over the next five years. Work funded through the replacement program will be limited to the replacement of the meters only and will not include the funding of new encoder or AMR equipment. The objective will thereafter be to replace meters every 15 years. Meters will be replaced at the approximate rate of 4,500 per year.

PUMPING AND STORAGE

Neutaconkanut Reservoir - Inspection / Rehabilitation

Plans are to inspect the interior of the Neutaconkanut distribution storage reservoir in order to assess its condition and determine the scope of any needed improvements. At this point cost of needed upgrading is being estimated based in proportion to the findings of a recent evaluation of the smaller Longview reservoir which is of similar age and construction.

Aqueduct Reservoir - Inspection/ Rehabilitation

Consists of structural upgrading in accordance with the findings and recommendations resulting from an inspection of the Aqueduct distribution storage reservoir in 1989 in conjunction with a facilities needs assessment study.

Various Pump Stations - Electronic Equipment Upgrades
Consists of modernizing and replacing electronic instrumentation equipment at the Ridge Road storage tank and at the Garden Hills and Dean Estates pump stations.

Neutaconkanut Gate House - Replace Roof
The asphalt shingle roof on the Neutaconkanut Reservoir gate house is in poor condition and needs to be replaced.

Garden Hills Pump Station - Replace Roof
The asphalt shingle roof on the Garden Hills Pump Station is in poor condition and needs to be replaced.

Aqueduct Siphon Chamber - Replace Roof
The asphalt shingle roof on the Aqueduct Siphon Chamber structure is in poor condition and needs to be replaced.

Raw Water Booster Pump Station - Upgrade Generator
Consists of upgrades to the electrical system and the fuel delivery system for the generator at the Raw Water Booster Pump Station, and safety improvements for fuel leak detection and prevention.

Raw Water Booster Pump Station - Replace Valves
The four 60-inch valves that control flow to the Raw Water Booster Pump Station do not operate properly and need to be rehabilitated or replaced.

Rehabilitate Roads/Fencing Pump Stations and Transmission Lines
Approximately 39,000 feet of security fencing and 3,800 feet of access roads associated with pump station and transmission line properties have been identified as needing improvements. Plans over the first five years are to replace/upgrade approximately 20% of these facilities.

Upgrade Bath Street Pump Station
Consists of major upgrading of the pumping station including increased pumping capacity, additional suction line capacity, improved valving, an upgrade of the electrical and

instrumentation systems, architectural and structural improvements, and installation of an emergency power generator.

Longview Reservoir - Rehabilitation

A number of needed structural improvements to the Longview Reservoir structure have been identified. These consist primarily of concrete rehabilitative work.

Upgrade Neutaconkanut Pump Station

Consists of major upgrading of the pumping station including increased pumping capacity, additional suction line capacity, improved valving, an upgrade of the electrical and instrumentation systems, and architectural and structural improvements.

SUPPORT SYSTEMS AND FACILITIES

Academy Avenue Administration Building - Heating System

Improvements are needed to the antiquated heating system of this building, including the installation of steam heating coils in the air-conditioning units, replacement of zone valves and damaged perimeter heaters, replacement of insulation in damaged areas, and the addition of reheat zones to the air-conditioning system. These improvements are being deferred as long as possible pending the disposition of consideration of a new Administration Building.

Academy Avenue Administration Building - Roof/Insulation

The roof at the Academy Avenue Administration Building leaks and is in need of replacement.

Academy Avenue Administration Building - Ventilation Improvements

Ventilation improvements are needed at this facility consisting of the installation of a mechanical ventilation system and upgrading of the boiler system. These improvements are being deferred as long as possible pending the disposition of consideration of a new Administration Building.

Forestry Garage Roof / Insulation

The roof at the Forestry Garage building is old and in poor condition and needs replacement.

Remove/Replace Underground Storage Tanks

Consists of the removal and replacement of five (5) underground fuel storage tanks and the installation of leak monitors at various facilities. ❑

EXHIBIT - 14

15-Year IFR Expenditure Plan / Fiscal Years 2001 - 2015

EXHIBIT - 14 is a summary of the Infrastructure Replacement Plan over the 15- year period from FY 2001 to FY 2015. Projects and estimated expenditures over this time-frame are less detailed than those of the initial 5-year plan. They are summarized according to major system components and aggregated into three individual 5-year time increments. Project needs are based on the best available information and assessments available at this point in time and will be adjusted and/or modified as changing needs and priorities may dictate. All expenditure estimates include a 2% annual inflation cost adjustment. The tabular project listing is followed by a brief narrative explanation of the scope of anticipated replacement work associated with each major component of the system.

EXHIBIT - 14

PROVIDENCE WATER

15 YEAR IFR EXPENDITURE PLAN

Fiscal Years 2001 To 2015

Project Description	Project Cost 2001 to 2015	FY 2001 to FY 2005 Budget Amount	FY 2006 to FY 2010 Budget Amount	FY 2011 to FY 2015 Budget Amount
RAW WATER SUPPLY				
Watershed facilities and structures	**$1,700,000**	$1,500,000	$100,000	$100,000
Watershed Area - rehab. fencing and roads	**$7,000,000**	$2,100,000	$2,300,000	$2,600,000
Gainer Dam Gate House - Arch. & Struct. Rehab.	**$200,000**	$200,000		
Sub-total	**$8,900,000**	**$3,800,000**	**$2,400,000**	**$2,700,000**
TREATMENT PLANT FACILITIES				
Aeration Basin - Structural Rehabilitation	**$200,000**	$200,000		
Aeration Basin - Replace piping	**$300,000**	$300,000		
Sedimentation Basins - Structural Rehabilitation	**$2,300,000**	$2,300,000		
Replace sand filters	**$3,800,000**	$3,800,000		
Venturi Tube Effluent Meters - 12 inch diameter	**$500,000**	$500,000		
Wash Water System - Replace Pumps	**$200,000**		$200,000	
Service Water System - Replace Pumps	**$30,000**		$30,000	
Lime Transfer System	**$200,000**	$200,000		
Fluoride Transfer System	**$100,000**		$100,000	
Process Control / Data Aquisition System	**$2,800,000**	$900,000	$900,000	$1,000,000
Sub-total	**$10,430,000**	**$8,200,000**	**$1,230,000**	**$1,000,000**
TRANSMISSION SYSTEM				
Transmission Mains	**$22,500,000**		$10,700,000	$11,800,000
Transmission Valves	**$3,300,000**	$1,000,000	$1,100,000	$1,200,000
Sub-total	**$25,800,000**	**$1,000,000**	**$11,800,000**	**$13,000,000**

EXHIBIT - 14

PROVIDENCE WATER

15 YEAR IFR EXPENDITURE PLAN

Fiscal Years 2001 To 2015

Project Description	Project Cost 2001 to 2015	FY 2001 to FY 2005 Budget Amount	FY 2006 to FY 2010 Budget Amount	FY 2011 to FY 2015 Budget Amount
DISTRIBUTION SYSTEM				
Distribution Mains	**$47,400,000**	$14,300,000	$15,700,000	$17,400,000
Distribution Valves	**$10,100,000**	$3,000,000	$3,400,000	$3,700,000
Services	**$29,300,000**	$8,800,000	$9,700,000	$10,800,000
Hydrants	**$5,300,000**	$1,600,000	$1,800,000	$1,900,000
Meters	**$14,200,000**	$3,500,000	$6,500,000	$4,200,000
Sub-total	**$106,300,000**	**$31,200,000**	**$37,100,000**	**$38,000,000**
PUMPING AND STORAGE				
Pump Sta's. / Trans. Lines - rehab fencing/roads	**$1,100,000**	$300,000	$400,000	$400,000
Garden Hills Pump Station - Upgrades	**$200,000**		$200,000	
Dean Estates Pump Station - Upgrades	**$400,000**			$400,000
Sub-total	**$1,700,000**	**$300,000**	**$600,000**	**$800,000**
SUPPORT SYSTEMS AND FACILITIES				
Administration Building and Facilities	**$6,800,000**	$6,800,000		
Sub-total	**$6,800,000**	**$6,800,000**		
TOTAL	**$159,930,000**	**$51,300,000**	**$53,130,000**	**$55,500,000**

15 - Year IFR Expenditure Plan

Project overview / Fiscal Years 2001 - 2015

RAW WATER SUPPLY

Watershed Facilities and Structures

Plans are to continue with the rehabilitative work to the dams and structures during the first five years of the fifteen-year period including concrete restoration work and slope protection improvements. An allowance in the remaining years of the plan will address improvements at the dams and structures in order to continue to preserve their useful life.

Watershed - Rehabilitate Fencing and Access Roads

Plans are to continue with the program of rehabilitating the approximately 40 miles of fencing and 60 miles of access roads and lanes that exist within the watershed and Providence Water- owned property. The fences and access roads date back to their original construction in the 1920s and are generally in poor condition.

Gainer Dam Gate House - Architectural / Structural Rehabilitation

Consists of the general reconditioning and upgrading of the structure, including rehabilitation of the concrete surfaces of the building, structural rehabilitation of the support columns and walls, and corrosion protection of metal surfaces.

TREATMENT PLANT FACILITIES

Structural Rehabilitation Influent Aerator

The concrete slabs and associated concrete structures of the influent aerator are exhibiting signs of displacement and deterioration. Needed improvements consist of rehabilitating/ replacing the displaced slabs and the exposed reinforcement and resurfacing of concrete surfaces.

Aeration Basin - Replace Piping

The influent aerator piping dates back to its original construction in the 1920s. The piping will need to be targeted for future replacement.

Sedimentation Basin - Structural Rehabilitation

The concrete slabs and baffle walls of the sedimentation basins have undergone deterioration. Needed improvements consist of replacing the heaved and broken slabs, sealing existing cracks and joints, and rehabilitating of the baffle walls and walkways.

Venturi Tube Effluent Meters - Replace

Project consists of replacing all (36) 12-inch effluent meters for the treatment plant.

Wash Water System - Replace Pumps

The existing wash water pumps date back to the early 1960s. These pumps will need to be targeted for replacement.

Service Water System - Replace Pumps

The existing service water pumps date back to the early 1960s. These pumps will need to be targeted for replacement.

Lime Transfer System

The existing pneumatic lime transfer system was installed in the early 1960s and will need to be replaced or upgraded.

Fluoride Transfer System

The existing pneumatic fluoride transfer system dates back to its original installation in the early 1960s and will need to be replaced or upgraded.

Process Control / Data Acquisition System

Providence Water is currently in the process of installing a new computerized control and monitoring system at the treatment plant. In order to keep up with rapid changes in technology and to keep the system up-to-date, hardware and software upgrades to the system need to continue to keep pace with technological advances.

TRANSMISSION SYSTEM

Transmission Mains

The need for replacement of transmission mains will have to be further evaluated through detailed investigation, testing and hydraulic analysis. At this point, in the absence of more specific data, the plan is being formulated under the assumption of having to replace all transmission mains installed prior to the year 1900. Nearly 27 miles of mains, ranging from 16-inches to 36-inches in size, have been identified as having been installed during this period.

Transmission Valves

All transmission valves installed between 1901 and 1940 are being targeted for replacement over the 15-year period. Two hundred fifteen (215) valves, ranging in size from 16-inches to 48-inches, have been identified as having been installed over this time period.

DISTRIBUTION SYSTEM

Distribution Mains

The need for replacing specific distribution mains will require detailed study and evaluation. Generally, older unlined cast iron mains will need to receive first priority. At this point, until further detailed analyses can be conducted, the plan is being formulated under the assumption of having to replace 50% of distribution mains installed prior to the year 1900. This would involve the replacement of approximately 110 miles of distribution mains.

Distribution Valves

Distribution valves will generally need to be replaced on an oldest-first basis. Approximately 3,280 valves within the system, ranging in size from 6-inches to 12-inches, have been identified as being more than 75 years old. Plans for the 15-year period will be to continue with valve replacements on an age priority basis. Approximately 3,000 valves will be replaced over this time period. Emphasis will be given to replacements in areas of local and State road resurfacing projects.

Services

As a result of lead testing within the system and under the current requirements of the Lead and Copper Rule, it is not required that Providence Water replace lead services. Providence Water is currently replacing lead services however, with concentration on replacing lead services in conjunction with street resurfacing projects, customer requests and/or sites being identified by the Department of Health as having lead contamination problems, even though primarily from sources other than water. Lead services will continue to be replaced in this manner as well as part of the main replacement program. Plans are to replace approximately 12,000 services over the fifteen-year period.

Hydrants

As part of Providence Water's improvement program, all hydrants 50 years and older have been replaced. The objective of the hydrant replacement program will be to ensure that no hydrants in the system will be more than 50 years old. Hydrant replacements are expected to continue at an average rate of 30 hydrants per year.

Meters

The objective of meter replacements will be to replace meters every 15 years. Meters will be replaced at the approximate rate of 4,500 per year.

PUMPING AND STORAGE

Pumping Stations / Transmission Lines - Rehabilitate Fencing / Roads

Approximately 39,000 feet of security fencing and 3,800 feet of access roads associated with pump station and transmission line properties have been identified as needing improvements. Plans over the 15-year period are to complete the remaining 80% of the overall work to replace fencing and rehabilitate access roads for the pump stations and transmission lines.

Garden Hills Pump Station Upgrades

The Garden Hills pumping station was constructed in 1960. The pumps and hydro-pneumatic tank date back to the original construction. These will need to be targeted for replacement.

Dean Estates Pump Station Upgrades

The Dean Estates pumping station was constructed in the 1980s. The pumps and hydro-pneumatic tanks will need to be considered for replacement.

SUPPORT SYSTEMS AND FACILITIES

Administration Building and Facilities

The Academy Avenue Administration building does not provide adequate office space and is in poor condition. A new facility is needed to house the administrative offices and construction crews and equipment. ❑

Facilities Description

• Water Supply System Description

WATER SUPPLY SOURCES

The sole source of water used by Providence Water is the Scituate Reservoir Complex. The Scituate Reservoir complex consists of six reservoirs: the main (Scituate) reservoir and five smaller reservoirs which are tributary to the main reservoir.

Scituate Reservoir

Water in the Scituate Reservoir is impounded behind the Gainer Dam, a large zoned earth structure at the southeast end of the Reservoir which is traversed along its 3,200-foot length by Rhode Island Route 12. Elevation of the crest of the dam is 299.0 Mean High Water Datum (MHW).

The total storage capacity of the Scituate Reservoir is 37.011 billion gallons (BG). Dead storage is 400 million gallons (MG), resulting in a net storage volume of 36.611 BG. The reservoir has a water surface area of 5.30 square miles, and a watershed area of 92.8 square miles.

The spillway is located to the right of the right abutment of the main embankment and is an uncontrolled, reinforced concrete structure 440.0 feet long. The weir is an ogee section with provisions for stop-log (removable timber) flashboards. Crest elevation is 284.01 (MHW). The flow discharges through a natural rock channel to the Pawtuxet River below the dam.

Three intakes at the center of the dam provide for withdrawal of water to the treatment works.

Manually and electrically-controlled gates and stop shutters provide for regulation of intake flow through the gatehouse through twin 60-inch aqueducts in a tunnel in the main embankment.

Regulating Reservoir

The dam impounding the waters in the Regulating Reservoir is an approximately 220-foot long structure with masonry overfall. It is located at the southern limit of the Reservoir, on the north side of Danielson Pike. Wing walls connect the structure to the Danielson Pike Bridge. Elevation of the crest of the overflow is 285.50 (MHW).

Regulating Reservoir has a total storage capacity of 428 MG, of which 7 MG is dead storage. The drainage area of this reservoir is 22.3 square miles, while the water surface area is 0.38 square miles.

Barden Reservoir

The total storage in Barden Reservoir is 853 MG. Dead storage is zero, due to the arrangement of the outlets. Water surface area is 0.38 square miles. The watershed area is 33.0 square miles.

The Barden Reservoir Dam is located on the northeast end of the Barden Reservoir. It is an earth embankment structure with a concrete corewall. The length including the spillway is approximately 612 feet long. The crest of the dam is at elevation 352.2 (MHW).

Discharges from the dam are over the spillway and through two outlet works. The 81.5-foot long uncontrolled spillway is a stone masonry arched overflow weir located at the right abutment of the dam. Elevation of the crest of the spillway is 345.1 (MHW).

One of the outlet works is a gated (manually operated) 30-inch diameter cast iron pipe conduit located at the left abutment of the spillway. The other outlet work structure is a double-barreled masonry box culvert, with a manually-operated sluice gate at the upstream slope of the dam.

Moswansicut Reservoir

The dam forming Moswansicut Reservoir is a 450-foot long embankment structure located on Moswansicut Brook at the western terminus of the reservoir. There are two spillways as follows:

1. An overflow spillway consisting of an uncontrolled reinforced concrete circular (12-foot diameter) drop discharging to a 5-foot 6-inch wide by 8-foot high arched conduit which flows through the embankment to the downstream discharge.

2. An emergency spillway, located about 1,500 feet north of the embankment and consisting of a 42-inch diameter concrete culvert.

Elevation of the overflow spillway crest is 301.90 (MHW); elevation of the emergency spillway crest is 303.4 (MHW).

The outlet works for the Reservoir is incorporated into the overflow spillway structure and is a rectangular opening, controlled by stop logs placed in guide channels in the sidewalls. Discharges flow through the spillway conduit to the downstream channel.

Moswansicut Reservoir covers a surface area of about 0.44 square miles. It has a total storage capacity of 1.781 BG and dead storage of 1.066 BG, for a net storage of 715 MG. The drainage area of this reservoir is about 3.9 square miles.

Ponaganset Reservoir

Ponaganset Reservoir has a watershed area of 2.1 square miles, and a water surface area of 0.36 square miles. Total storage in the reservoir is 742 MG, while dead storage is 49 MG. Net storage capacity is 693 MG.

The dam impounding the Ponaganset Reservoir is an approximately 635-foot long earth embankment structure which is traversed by George Allen Road. Crest of the dam is elevation 641.4 (MHW).

The spillway consists of an uncontrolled double-barreled reinforced concrete culvert under George Allen Road. Spillway crest elevation is 633.05 (MHW).

The regulating outlet consists of a 24-inch diameter cast iron pipe through the dam, located near the left side of the embankment; control is by a manually operated sluice gate in a protective steel enclosure on a concrete pier. Invert of the outlet is at elevation 613.6 (MHW).

Westconnaug Reservoir

Westconnaug Reservoir has a total storage capacity of 453 MG with no dead storage. Its surface area covers about 0.27 square miles. It has a drainage area of 4 square miles.

The dam is located at the north end of the Westconnaug Reservoir, on the Westconnaug Brook. It is an earth embankment structure approximately 320-feet long, with a crest elevation of 457.2 (MHW).

A concrete spillway, 16-feet wide, is located right of center of the dam and is bounded by two vertical masonry training walls about 3-feet high. Spillway crest elevation is 454.17 (MHW).

An outlet (invert elevation 440.95 MHW) consisting of a 16-inch diameter cast iron pipe passes through the dam to the right of the spillway. The outlet control structure consists of a gate chamber with a grated inlet and a reinforced concrete structure. A key is used to manually operate a 16-inch butterfly valve on the pipe.

Both the spillway and the outlet conduit discharge into Westconnaug Brook.

TREATMENT FACILITIES

Providence Water operates one water treatment plant to purify the Scituate Reservoir water. The water quality received from Scituate Reservoir is typical of surface water supplies in the New England region. It is a low pH, low alkaline, low turbidity water with seasonal overturn events resulting in elevated coliform, and iron and manganese concentrations.

The plant is located approximately 4,400 feet from the Gainer Dam in Scituate and operates as a conventional treatment process. The hydraulics of the plant allow it to be normally operated under gravity flow conditions. A raw water pumping station is available for pumping water to the plant under extremely low reservoir conditions. The treatment process consists of aeration, mixing, coagulation-flocculation, sedimentation, rapid sand filtration, disinfection and fluoridation.

Flow Description

Water is withdrawn from the Scituate Reservoir through a concrete structure (gate house) near the middle of Gainer Dam. The gate house has three separate intakes located at elevations 253.0, 235.0 and 213.0 feet above MHW. The water then enters twin 60-inch transmission mains that deliver water to the junction chamber and flows by gravity through a 90-inch diameter steel aqueduct from the junction chamber to the treatment works. If insufficient head exists in Scituate Reservoir to meet demand, a raw water booster pump station may be utilized. The raw water pump station is located upstream of the junction chamber approximately 1,000 feet from the gate house and is connected to the 60-inch water transmission mains.

Influent Control Chamber

The main chamber is a reinforced concrete structure which is split into two separate sub-chambers by a two-foot thick wall. The 90-inch diameter influent pipe enters the north subchamber. This chamber contains four 36-inch diameter pipes which feed the aerator. Each pipe has a 36-inch gate valve and a 36-inch butterfly valve. There is a circular concrete manhole at one corner of the chamber. This manhole accesses a 4-foot by 7-foot concrete drain which leads to the lagoons. There is a pit in the western end of this subchamber where the ferric sulfate is added to the raw water by feeder pipes that are connected directly to the 90-inch diameter influent pipe. The south subchamber houses four 36-inch gate valves used to divert the raw water toward the venturi meters, mixer, and coagulation basins. Below the gate valves are three 36-inch square sluice gates used to drain the subchamber. At the east end of this subchamber are two 72-inch diameter concrete pipe openings which lead to the venturi meters and then converge to one rectangular concrete conduit which leads to the mixer. There is a sluice gate on the north pipe. On the north wall at the east end of the chamber is a 9-foot diameter opening. This is the effluent conduit from the influent aerator.

Aeration Basin

Water flows through four 48-inch diameter pipes from the influent chamber to the aeration basin. Under normal operating conditions, the aeration process consists of three rectangular loops of steel pipe which have spray ports every 24 inches. There is also a fourth, circular multi-port nozzle assembly in the center of the basin. The aeration system works under gravity pressure and sprays water into the air in a fountain style. This treatment step removes volatile organics and gases. The aerated water travels through a 108-inch diameter pipe from the center of the aerator back to the influent control chamber.

Basin Influent Conduit

The aerated water travels from the influent control chamber into two 6-foot by 3-foot diameter venturi tubes which measure the influent flow. Water then travels from the venturi meters through an 8.5-foot wide, 10-foot high conduit to the tangential mixer.

Coagulation/Flocculation

Quicklime is added in the basin influent tunnel between the influent control chamber and the tangential mixer and reacts with the ferric sulfate in the formation of ferric hydroxide floc. The

floc is then encouraged to form through the use of a tangential mixer. The water enters the mixer through a 4-foot wide by 3-foot high opening at the bottom of the mixing chamber, tangent to the edge of the chamber. The mixer works under gravity feed and imparts a slow cyclical motion to the water. The cyclical motion aids in the destabilization of colloidal material and the formation of floc. These steps are commonly known as coagulation and flocculation. The next step is the removal of the flocculated colloidal material through sedimentation. The treatment plant has two large sedimentation basins; the north basin (43 million gallon capacity) and the south basin (111 million gallon capacity). They are both open, concrete structures enclosed by concrete-lined earthen dams. Here, the flocculated material is allowed to settle on the bottom of the basins. The resulting ferric sludge must be removed by draining and flushing the basins manually.

Filtration

Settled water travels from the open basins through a 10-foot wide by 11-foot high conduit to the sand filters. There are eighteen (18) single media rapid sand filters which remove non-settleable floc and impurities remaining following the coagulation, flocculation, and sedimentation stages. Each filter is operated over a flow range of 5 to 8 million gallons per day. The number of filters on-line concurrently is dependent upon water demand. Each filter has two 12-inch effluent lines that discharge into the clearwell. The average filter run is approximately 72 hours and is initiated when head loss through the filter reaches approximately 8 feet of water. The backwash water is supplied by gravity via a 400,000 gallon wash water tank and is discharged to waste lagoons.

Emergency Provisions

Emergency provisions at the plant include standby power and an emergency bypass process. The treatment plant processes can be bypassed by closing the gates in the tangential mixer and opening the gates between the basin influent chamber and the effluent chamber located downstream of the clearwell.

The plant currently uses approximately 320 kWH per day to power its treatment operation. This power is used by chemical feed equipment, backwash pumps, metering equipment, air conditioning, lighting, etc. The emergency power for the plant is provided by a 1750-kW diesel generator located at the raw water pumping station. This generator provides ample power to operate the pump station as well as the treatment works. In an emergency, the generator needs

to be manually started and manually brought on-line. The treatment plant also has its own 175 kW generator located in the transformer house adjacent to the plant.

Chemical Feed System

Ferric Sulfate

The plant uses ferric sulfate as a coagulant. Ferric sulfate arrives at the plant in granular form and is stored in a 180-ton silo, 16-feet in diameter by 54-feet high. Gravimetric feeders are located below the secondary storage bins and feed ferric into a 150-gallon mixing tank. Ferric sulfate solution then flows into a 30-gallon float tank and is pumped into the raw water.

A design for a liquid chemical feed system has been completed and construction of the system is underway. The liquid system will completely replace the granular chemical system. Since January 1995, a temporary liquid feed system has been in operation and on-line in conjunction with the bulk system.

Quicklime

Quicklime is added to aerated water for pH adjustment and is stored in a 180-ton silo located adjacent to the ferric sulfate silo. The pneumatic transfer system for lime is the same as for the ferric system. Secondary storage hoppers, gravimetric feeders, slakers, float tanks, and pumps are utilized to add lime to the aerated water.

Chlorine

Chlorine is added to the open basins and to the settled water for disinfection. Chlorine is delivered to the Purification Works in one-ton containers. The containers are transported to a storage room by overhead monorail. The storage room is equipped with a ventilation system that turns on and exhausts air to the outdoors when a chlorine leak is detected.

Sodium Silicofluoride

Sodium silicofluoride is added to filtered water. The fluoride feed system is similar to that of the ferric and lime feed systems. Fluoride is delivered in 400-pound drums prior to being stored in the chemical and control building. The transfer snorkel transports fluoride from the storage room to the hopper/filter units.

Gravimetric feeders similar to the ferric and lime system feed the fluoride to dissolving tanks which feed fluoride by gravity to the injection point downstream of the filters.

Solids Handling and Disposal

The treatment plant produces ferric hydroxide sludge from both the sedimentation and filtration processes which require handling and disposal.

The cleaning of the basins is initiated by draining the basin. The exposed sludge is manually scoured using high pressure water. Collection of the scoured material and existing sludge is facilitated through the use of a drain system which consists of a central drainage port and drainage troughs located in the bottom of the basins. The sludge is directed through the drain chamber and conduit to a series of sludge lagoons located between Route 116 and the Pawtuxet River west of the plant.

The volume of backwash water which needs to be handled and disposed of is dependent upon the demand of the facility as well as the efficiency of the coagulation/sedimentation process. The backwash water is also sent to the sludge lagoons.

Lagoon Description

Ferric sludge from the two coagulation basins and from the backwash water is collected in a settling lagoon system. The lagoon system consists of three settling lagoons, three overflow structures and outfalls, and one conduit connecting Lagoons No. 2 and No. 3. Water flows from Lagoon No. 1 through a small connecting stream to Lagoon No. 2. Presently, no water enters Lagoon No. 3. Lagoon No. 3 has never been utilized. Discharge limits are presently met with only Lagoons No. 1 and No. 2 in service.

STORAGE FACILITIES

Providence Water operates four storage facilities throughout the distribution system. Water is also collected in a 34,000 gallon clearwell at the plant before being delivered to the distribution system. These facilities are used to optimize operating efficiencies by equalizing demands, improving and stabilizing system flows and pressures, and providing reserve supplies for fire fighting.

Aqueduct Reservoir

The Aqueduct Reservoir has a storage capacity of 43.4 MG and is located on Scituate Avenue in the Town of Cranston. The reservoir is a 390-foot by 590-foot enclosed concrete structure with a water depth of approximately 25 feet and an overflow elevation of 231 feet mean high water (MHW). The facility provides operational storage for the low-service area and operates by gravity feed. Water is supplied to the reservoir through a 60-inch diameter prestressed reinforced concrete cylinder pipe conduit which connects the reservoir with the 60-inch diameter Neutaconkanut Conduit.

Neutaconkanut Reservoir

The Neutaconkanut Reservoir has a storage capacity of 42.09 MG and is located near the intersection of Central Avenue and Plainfield Pike in Johnston. The reservoir is an enclosed concrete structure with a water depth of approximately 25 feet and an overflow elevation of 227 MHW. The facility feeds the Neutaconkanut Pumping Station and operates by gravity feed. Water is supplied to the reservoir through the 60-inch diameter Neutaconkanut Conduit.

Longview Reservoir

The Longview Reservoir has a storage capacity of 24.8 MG and is located at the intersection of Mineral Spring Avenue and Smithfield Road in North Providence. The original below grade concrete structure was put on line in 1928 and has an overflow elevation of 306 MHW. A 200-foot by 323-foot by 29-foot deep cast in place concrete underground structure was constructed immediately adjacent to the existing reservoir and was put on line in 1990. This doubled the capacity of the reservoir. The reservoirs are connected by a sluice gate in the common wall of the two reservoirs. The facility provides operational storage to the high-service area. Water is pumped to the reservoir by the Neutaconkanut and Bath Street Pump Stations.

Ridge Road Reservoir

The Ridge Road Reservoir has a capacity of 3.5 MG and is located off Ridge Road in Smithfield. The facility provides operational and fire storage for the extra-high service area. Water is pumped to the reservoir by the Fruit Hill Pumping Station. The structure is an above-ground prestressed concrete tank with a water depth of 40 feet and an overflow elevation of 398 MHW.

PUMP STATIONS

In order to maintain an adequate supply of potable water at a sufficient pressure, Providence Water owns and operates six potable water pump stations in the distribution system and one raw water pump station. A description of the pump stations follows:

Raw Water Pumping Station

The Raw Water Booster Pumping Station (RWBPS) contains four pumps, two with a pumping capacity of 50 MGD and two with a pumping capacity of 30 MGD, and is located near the base of the Gainer Dam. The station is used to supplement head to the plant under low reservoir, high demand periods.

The RWBPS is equipped with emergency power supplied by a 1750-kW diesel generator. This generator also supplies the emergency power to the plant.

Garden Hills Pump Station

The Garden Hills Pump Station is located on Rockcrest Drive in the City of Cranston. The pump station contains two 400 GPM primary pumps and one natural gas driven 400 GPM pump used for emergency response. The station is used to maintain adequate pressures at the higher elevations of the Garden Hills subdivision in Cranston. The station contains an underground 7,200 gallon hydro-pneumatic storage tank (6-foot dia. x 30-foot long).

Dean Estates Pump Station

The Dean Estates Pump Station is located on Melody Lane in Cranston and serves the higher elevations in the Dean Estates subdivision. The pump station contains two 1,200 GPM primary pumps and one 1,200 GPM natural gas driven emergency pump. The facility utilizes two 10,000-gallon hydro-pneumatic storage tanks.

Greenville Ave. Pump Station

The Greenville Ave. Pump Station is located on Greenville Ave in the Town of Johnston. The station contains three 320 GPM pumps and one 750 GPM pump. Two of the three 320 GPM pumps are used as lead pumps supplying two 8000-gallon hydro-pneumatic storage tanks with the third pump as back up. The 750 GPM pump is used for fire service or other demand emergencies. Emergency power is supplied by a 180-kW diesel generator.

Fruit Hill Pump Station

The Fruit Hill pump station is located on Smith Street in the Fruit Hill section of North Providence. The station contains two 1,500 GPM pumps and provides water to the extra-high service area. Emergency power is provided by a 125-kW natural gas generator.

Bath Street Pump Station

The Bath Street Pump Station is located on Bath Street in the City of Providence. The pump station contains three pumps, two with a pumping capacity of 2,500 GPM and one with a pumping capacity of 5,000 GPM. The 5,000 GPM natural gas pump is presently out of service. The station provides water to the high-service area as well as the high-pressure fire zone in downtown Providence.

Neutaconkanut Pump Station

The Neutaconkanut Pump Station is located off Ashby Street in the Town of Johnston. It draws water from the Neutaconkanut Reservoir and supplies water to the high-service area. The pump station contains four pumps, three with a pumping capacity of 7,000 GPM and one with a pumping capacity of 3,800 GPM. One of the 7,000 GPM pumps is equipped with a gasoline-driven engine which was used for emergency response. The gasoline-driven pump is no longer utilized for backup purposes. The station is equipped with a 1,000 kW diesel engine backup power generator.

TRANSMISSION SYSTEM

Two 60-inch diameter raw water transmission lines converging into one 90-inch line transfer water from the dam intakes to the treatment plant. Water flows from the intakes to the transmission lines by gravity and then directly to the treatment plant.

Finished water is transmitted from the clearwell to the distribution system through two major transmission conduits, the 90-inch diameter Scituate Tunnel and Aqueduct (ScTA) and the 78-inch diameter Supplemental Tunnel and Aqueduct (STA). These two conduits have an approximate capacity of 100 MGD and 77 MGD, respectively.

The treated water from the plant exits the clearwell and flows under gravity to structure "A" (the point of connection of the 90-inch and 78-inch aqueducts) via two 72-inch diameter conduits. At a flow rate of 70 MGD, the flow splits in structure "A" with approximately 65% of the water entering the ScTA and 35% flowing to the STA. As the flow rate increases, the distribution between the two aqueducts evens out with a 50%/50% distribution being realized at 136 MGD.

The 90-inch diameter concrete-lined tunnel portion of the ScTA begins at the West Portal and finishes at the East Portal, covering a distance of approximately 3.4 miles. At the East Portal, the topography requires the ScTA to become an aboveground aqueduct. This aqueduct is a 90-inch concrete pipe which carries the water approximately 0.95 miles to the Siphon Chamber. From the Siphon Chamber, the transmission line splits into two lines, a 60-inch diameter concrete conduit and a 66-inch diameter steel pipeline. The 60-inch conduit continues to feed the Neutaconkanut and Bath Street Pumping Stations and the Neutaconkanut Reservoir. The 66-inch pipeline continues to the general area of Budlong Road in Cranston from where further distribution begins.

The STA begins at Structure "B" located at the plant. Structure "B" is a 76-foot deep shaft that accesses a 78-inch diameter concrete-lined tunnel which travels underneath the South Basin of the treatment works. At this point, the tunnel enters Structure "C" which is another 78-inch diameter shaft which carries the water upward for 68 feet. The water exits this structure and travels in a 78-inch diameter aqueduct for 3.8 miles until it reaches Structure "D." Structure "D" is a 36-foot deep by 78-inch diameter shaft which accesses a 78-inch concrete lined tunnel. The tunnel continues for approximately 0.5 miles until it reaches Structure "E." Here, the water rises up 65 feet in a 120-inch shaft and enters the 102-inch diameter aqueduct portion of the STA. Structure "E" is also a possible point of entry for the proposed Big River Reservoir supply line. The 102-inch diameter aqueduct carries the water for approximately 4.1 miles to its termination in the general area of Budlong Road in Cranston where further distribution begins.

Providence Water currently operates approximately 4 miles of concrete-lined tunnel, 10 miles of concrete aqueduct, 94 miles of various transmission piping (16-inches to 66-inches) and 780 miles of distribution piping (6-inches to 12-inches).

SERVICE AREA

The Scituate Reservoir Complex is utilized by Providence Water as an active source which supplies approximately 500,000 people in the State of Rhode Island with potable water through both its retail and wholesale operations in Providence and in the surrounding communities.

The retail service area consists of portions of North Providence, Cranston, and Johnston, and all of Providence.

Providence Water provides wholesale water to eight water utilities in the Providence area. These utilities include the Cranston Sewer and Water Maintenance Department (CSWMD), East Providence Water Division (EPWD), Greenville Water District (GWD), Kent County Water Authority (KCWA), Lincoln Water Commission (LWC), Smithfield Water Department (SWD), Warwick Water Department (WWD) and the East Smithfield Water District (ESWD).

The Wholesale Interconnections

The WWD has two interconnections. One of the interconnections is a 30-inch diameter line located on Pettaconsett Avenue just over the Pawtuxet River in Cranston. The other interconnection is a 42-inch diameter line located on Natick Road near Wakefield Street and the Midville Country Club in West Warwick.

The KCWA also has two interconnections with the Providence Water system. One of the interconnections is a 12-inch diameter line located on Oaklawn Avenue south of Brayton Road in Cranston. The other interconnection is a 30-inch diameter line located on Clinton Avenue in Scituate.

The EPWD has a single 42-inch diameter interconnection with the system. The interconnection is located at the corner of Budlong Road and Aqueduct Road in Cranston.

The CSWMD has a single 24-inch diameter interconnection with the system. The interconnection location is near the Aqueduct Reservoir in Cranston.

The LWC has two interconnections with the system. One of the interconnections is a 16-inch diameter line located at the corner of Mineral Spring Avenue and Woodward Road in North

Providence. The other interconnection is a 12-inch diameter line located on Charles Street in North Providence and serves as an emergency connection.

The SWD has a single 12-inch diameter interconnection. The interconnection is located near the Longview Reservoir in North Providence.

The GWD has a single 8-inch diameter interconnection with the system. The interconnection is located at the corner of George Waterman Road, Taunton Ave and the Putnam Pike in Johnston.

The ESWD currently has two interconnections with the system. One interconnection is an 8-inch diameter main located on Dean Street at the Smithfield/Johnston town line. The other connection is a 12-inch diameter main located on Waterman Avenue in North Providence.

The Retail Area

The Providence Water retail area currently has 68,573 service connections. These connections include residential, industrial, commercial, and fire service connections.

The retail service area is divided into three separate pressure zones; the low-service, high-service and extra-high service areas. Providence Water also maintains a high pressure fire system within the downtown area of Providence.

The low-service area is the largest, encompassing 71.5% of the retail area and serves portions of Cranston, Johnston and the southern portions of Providence. The low-service area is generally defined as the area with elevations from zero to 140 feet above Mean High Water (MHW). The pressure in the low-service area is maintained by the levels at the Neutaconkanut and Aqueduct Reservoirs which are maintained at approximately elevations 226 and 230 MHW respectively. The low-service area is supplied with water from a combination of the 60-inch line which supplies Neutaconkanut Reservoir, the 66-inch line that terminates at Budlong Road, and the 102-inch STA which also terminates in the Budlong Road area.

The high-service area is the second largest, encompassing 28.5% of the retail area and serves the northern and higher elevation sections of North Providence, Providence and Johnston. The high-service area is generally defined as the area with elevations from 140 to 220 feet above MHW.

The pressure in the high-service area is maintained by the operating level at the Longview Reservoir which is maintained when full at 305 feet MHW. Water for the high-service area is supplied by water pumped from the Neutaconkanut Reservoir by the Neutaconkanut and Bath Street Pumping Stations.

The extra-high service area serves a small portion of the retail area in the Fruit Hill section of North Providence. The extra-high service area is generally defined as the area with elevations from 220 feet to 315 feet above MHW. The water for this service area is drawn from the high-service system and pumped from the Fruit Hill Pumping Station to the Ridge Road Reservoir where water level is maintained at elevation 392 MHW.

Service area mains range in size from 6 inches to 48 inches in diameter and are constructed of a variety of materials including cast iron, ductile iron, concrete, steel, and asbestos cement. Service connections range from 5/8-inch to 12-inches and are sized based upon the customer's demand. Service connections are constructed of lead, copper, galvanized steel, cast iron, or ductile iron. All services are metered.

SYSTEM METERING

Providence Water meters water produced at the treatment plant and meters 100% of its service connections. Raw water flowing into the plant is measured by two 72-inch by 36-inch diameter venturi meters. These venturi meters measure the flow of raw water from the influent control chamber to the sedimentation basins.

The flow of effluent discharged from the plant to the distribution system is measured by 36 master plant effluent meters. These meters are 12-inch venturi tube meters located on the effluent lines of the rapid sand filters at the treatment plant. The venturi meters were installed as part of the original plant construction in the 1920's and additions to the plant in the 1940s and 1960s.

In addition to metering water produced by the treatment facility, Providence Water meters its entire distribution system. Distribution system metering includes meters at interconnections to wholesale customers as well as normal metering of all service connections.

The retail service area contains a variety of water consumers including large industrial and manufacturing accounts, commercial accounts, and residential users. Meters installed and/or replaced after February 18, 1993 are the property of Providence Water. Meters installed prior to this date are owned by the property-owner. Meters in the retail area range in size from ½-inch to 42-inches.

A primary source of information was obtained and edited from the Water Supply Management Plan, prepared by the Providence Water Supply Board with the assistance of Fay, Spofford & Thorndike Inc., December 1993. ❑

EXHIBIT - 15

System Map

Exhibit - 15 is a general overview map of the Providence Water Supply Board system showing the locations of the reservoir, treatment plant, distribution reservoirs, major pumping stations and the aqueducts and transmission piping feeding the system. Pipelines shown in green represent the gravity-fed portion of the system with those in red representing the pumped service area.

EXHIBIT - 15

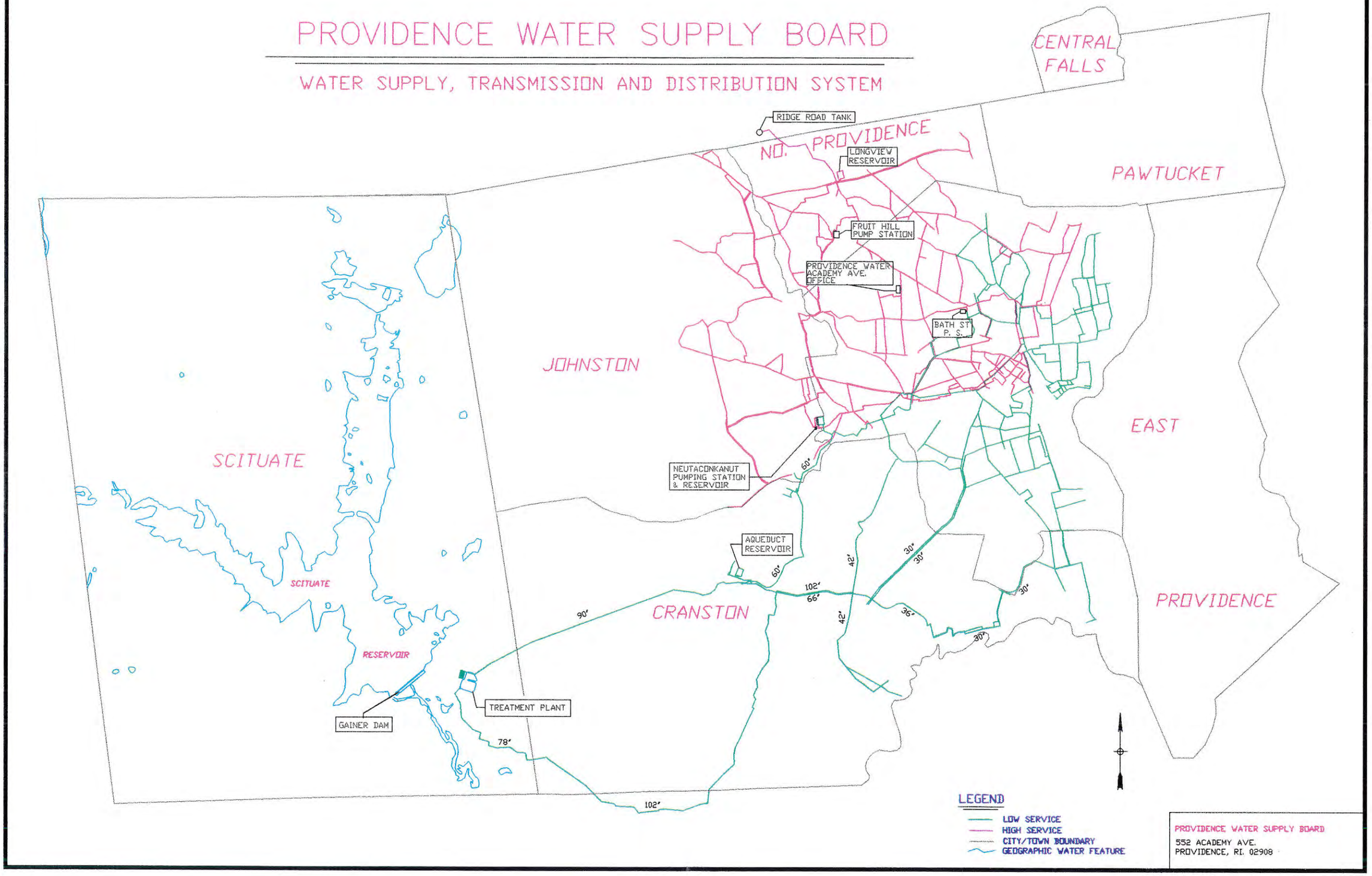
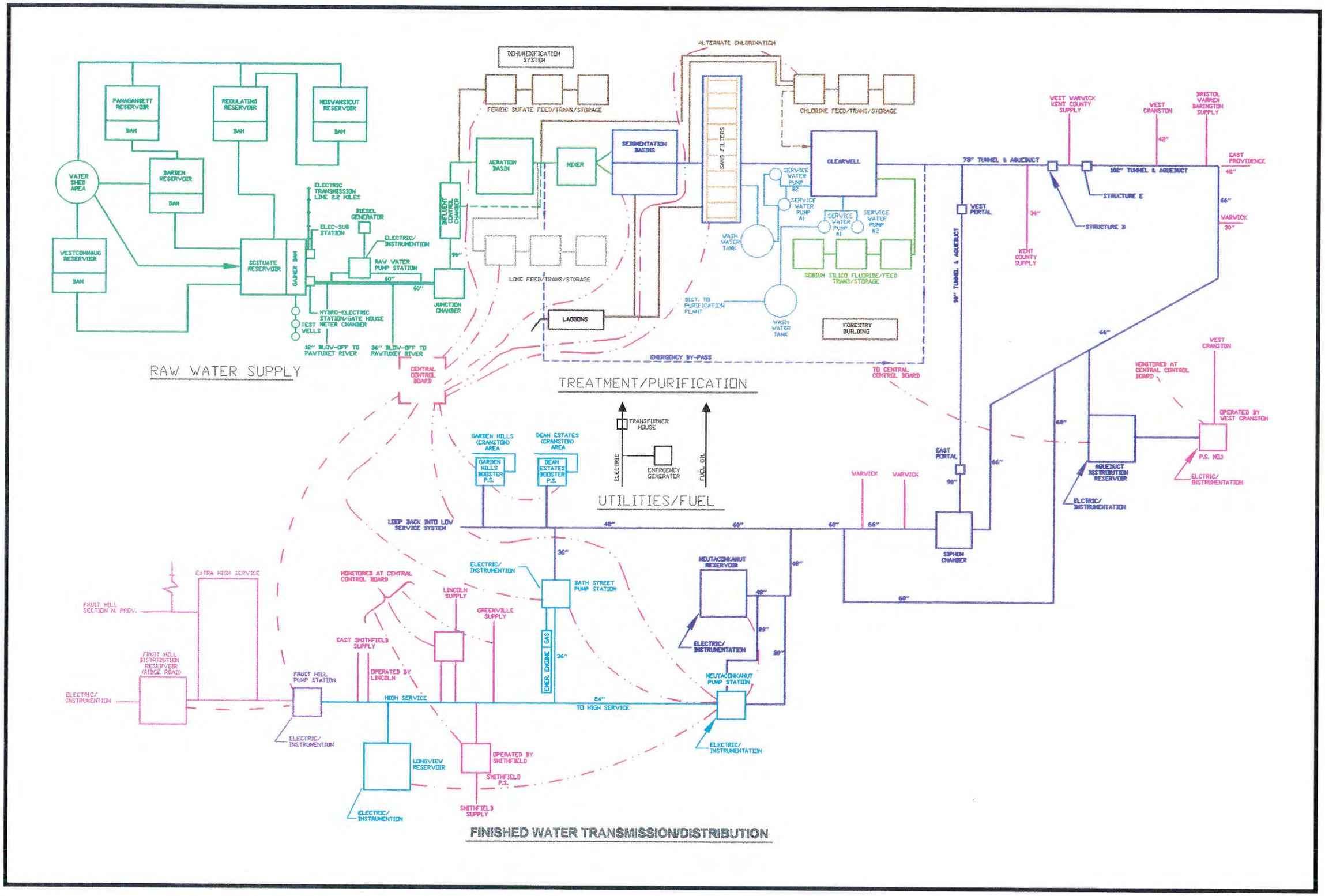

PROVIDENCE WATER SUPPLY BOARD
WATER SUPPLY, TRANSMISSION AND DISTRIBUTION SYSTEM
CENTRAL FALLS
RIDGE ROAD TANK
NO. PROVIDENCE
LONGVIEW RESERVOIR
PAWTUCKET
FRUIT HILL PUMP STATION
PROVIDENCE WATER ACADEMY AVE. OFFICE
BATH ST P. S.
JOHNSTON
EAST
SCITUATE
NEUTACONKANUT PUMPING STATION & RESERVOIR
60"
AQUEDUCT RESERVOIR
60"
42"
30"
30"
102"
66"
30"
SCITUATE
RESERVOIR
90"
CRANSTON
42"
36"
30"
PROVIDENCE
TREATMENT PLANT
GAINER DAM
78"
102"
LEGEND
LOW SERVICE
HIGH SERVICE
CITY/TOWN BOUNDARY
GEOGRAPHIC WATER FEATURE
PROVIDENCE WATER SUPPLY BOARD
552 ACADEMY AVE.
PROVIDENCE, RI. 02908

EXHIBIT - 16

Process Diagram

Exhibit - 16 is a process diagram of the Providence Water Supply Board system. It shows in schematic form the sequence and inter-relation of the various water treatment and delivery processes.

EXHIBIT - 16


RAW WATER SUPPLY
PANAGANSETT RESERVOIR
DAM
REGULATING RESERVOIR
DAM
MOSWANSICUT RESERVOIR
DAM
WATER SHED AREA
BARDEN RESERVOIR
DAM
WESTCONNAUG RESERVOIR
DAM
SCITUATE RESERVOIR
GARNER DAM
ELECTRIC TRANSMISSION LINE 2.2 MILES
DIESEL GENERATOR
ELEC-SUB STATION
ELECTRIC/ INSTRUMENTION
RAW WATER PUMP STATION
96"
60"
60"
JUNCTION CHAMBER
HYDRO-ELECTRIC STATION/GATE HOUSE
TEST WELLS
42" BLOW-OFF TO PAWTUXET RIVER
36" BLOW-OFF TO PAWTUXET RIVER
CENTRAL CONTROL BOARD
TREATMENT/PURIFICATION
DEHUMIDIFICATION SYSTEM
FERRIC SULFATE FEED/TRANS/STORAGE
ALTERNATE CHLORINATION
CHLORINE FEED/TRANS/STORAGE
INFLUENT CONTROL CHAMBER
AERATION BASIN
MIXER
SEDIMENTATION BASINS
SAND FILTERS
CLEARWELL
SERVICE WATER PUMP #2
SERVICE WATER PUMP #1
SERVICE WATER PUMP #1
SERVICE WATER PUMP #2
WASH WATER TANK
LIME FEED/TRANS/STORAGE
SODIUM SILICO FLUORIDE/FEED TRANS/STORAGE
DIST. TO PURIFICATION PLANT
WASH WATER TANK
LAGOONS
FORESTRY BUILDING
EMERGENCY BY-PASS
TO CENTRAL CONTROL BOARD
TRANSFORMER HOUSE
ELECTRIC
EMERGENCY GENERATER
FUEL OIL
UTILITIES/FUEL
GARDEN HILLS (CRANSTON) AREA
GARDEN HILLS BOOSTER P.S.
DEAN ESTATES (CRANSTON) AREA
DEAN ESTATES BOOSTER P.S.
LOOP BACK INTO LDV SERVICE SYSTEM
48"
48"
60"
66"
WARVICK
WARVICK
78" TUNNEL & AQUEDUCT
WEST WARWICK KENT COUNTY SUPPLY
WEST CRANSTON
42"
BRISTOL WARREN BARRINGTON SUPPLY
108" TUNNEL & AQUEDUCT
STRUCTURE E
STRUCTURE B
EAST PROVIDENCE
48"
66"
WARVICK
30"
WEST PORTAL
34"
KENT COUNTY SUPPLY
96" TUNNEL & AQUEDUCT
66"
WEST CRANSTON
MONITORED AT CENTRAL CONTROL BOARD
OPERATED BY WEST CRANSTON
P.S. NO.1
ELCTRIC/ INSTRUMENTATION
AQUEDUCT DISTRIBUTION RESERVOIR
ELCTRIC/ INSTRUMENTATION
EAST PORTAL
90"
66"
SIPHON CHAMBER
36"
ELECTRIC/ INSTRUMENTION
BATH STREET PUMP STATION
MONITORED AT CENTRAL CONTROL BOARD
LINCOLN SUPPLY
GREENVILLE SUPPLY
EMER. ENGINE
GAS
36"
NEUTACONKANUT RESERVOIR
48"
ELECTRIC/ INSTRUMENTATION
NEUTACONKANUT PUMP STATION
84" TO HIGH SERVICE
ELECTRIC/ INSTRUMENTATION
EAST SMITHFIELD SUPPLY
OPERATED BY LINCOLN
FRUIT HILL PUMP STATION
HIGH SERVICE
EXTRA HIGH SERVICE
FRUIT HILL SECTION N. PROV.
FRUIT HILL DISTRIBUTION RESERVOIR (RIDGE ROAD)
ELECTRIC/ INSTRUMENTION
ELECTRIC/ INSTRUMENTION
LONGVIEW RESERVOIR
OPERATED BY SMITHFIELD
SMITHFIELD P.S.
ELECTRIC/ INSTRUMENTION
SMITHFIELD SUPPLY
FINISHED WATER TRANSMISSION/DISTRIBUTION

Facilities Assessment

• Description of Facility Needs Assessment Update

In 1989, Providence Water engaged in a comprehensive Facility Needs Assessment Study of its entire system. The study examined and evaluated the condition of virtually all of the agency's facilities and operating systems and provided specific recommendations and cost estimates concerning needed improvements to the system. The study was conducted with the assistance of the consulting firm of O'Brien & Gere.

The study identified the need for massive improvements to the aged system. The study results were used to formulate a first-phase plan of needed improvements, and in November of 1989, a $30 million five-year capital improvement plan was prepared. The plan consisted in large measure of what is now termed infrastructure replacement work. Utilizing the funding that was available, approximately $8.9 million in improvements have been completed since then. In 1993, the firm of O'Brien & Gere was again engaged to reassess the study for the purpose of updating their 1989 cost estimates.

In addition to the Facility Needs Assessment Study, various other studies have also been conducted by Providence Water as part of its long-term objective of restoring the system. The results of these studies, as well as information from other sources, have all been utilized as a basis for the development of Providence Water's improvement plans. Some of these sources include:

- Chemical Handling Study, 1984
- System Analysis, Evaluation, and Engineering Study of the Neutaconkanut Pump Station, 1989
- Phase II Dam Investigation, 1990
- Evaluation of the hydraulics of the High-Service Portion of the PWSB Transmission and Distribution System, 1993
- Evaluation and Requirements Need Analysis - Distributed Computer Process Control, Instrumentation and Data Acquisition system

- Leak detection survey of the entire 900-mile distribution system.
- Contact Time Study
- Corrosion Control Optimization Study
- Evaluation of Alternate Filter media and of ozonation including pilot testing
- EPA and RIDOH Sanitary Surveys

The Infrastructure Replacement Program is based on the best information and assessments available at this time. The system's needs have been and will continue to be reevaluated by Providence Water staff on an ongoing basis. The plan is considered to be a living document and will be updated as additional information becomes available, as changing conditions may warrant, or as may be required as a result of changing regulatory requirements. ❑

EXHIBIT - 17

Summary of the System's Principal Components by Facility Category

Exhibit - 17 is a tabular listing of the various major components of the Providence Water Supply Board system. Provided is a brief narrative description of the general condition of the facility, its approximate average age, and an estimate of its approximate remaining life.

EXHIBIT - 17

PROVIDENCE WATER

SUMMARY OF THE SYSTEM'S PRINCIPAL COMPONENTS BY FACILITY CATEGORY

PRINCIPAL COMPONENTS BY CATEGORY	Average Approx. Age of Component	Approx. Practical Remaining Life (years)	Condition
RAW WATER SUPPLY			
Principal Reservoirs and Dams	68	100	Various geotechnical, hydraulic and concrete rehabilitative work is needed as recommended in the Phase II Dam Study and as identified by PWSB staff.
Reservoir Watershed Area	55	50	Various rehabilitative work is needed to fencing, gates, maintenance and access roads.
Gainer Dam Gate House	68	50	The gatehouse dates back to its original construction in the 1920s. It is in need of architectural and structural rehabilitation.
60 inch Conduits	69	50	Dates back to 1920s. Visible exterior corrosion has occurred on the surfaces of the steel pipe located inside the meter chamber.
90 inch Steel Aqueduct	69	50	Dates back to original plant construction. Structure is in relatively good condition.
Raw Water Booster Pump Station	29	30	The emergency diesel backup power generator needs some electrical upgrading. The 60" control valves to the station do not operate properly and need to be rehabilitated or replaced.
Electrical Supply System - Treatment Plant	69	1	The electrical supply system dates back to its original construction in the 1920s. Numerous splices exist on the subtransmission line, feeder lines are old and unreliable, and the Gainer Dam substation equipment is obsolete and in poor condition. The transformers at the substation for the plant are of insufficient capacity and the secondary voltage for the plant is 550V instead of the standard 480V. The system needs to be replaced.
TREATMENT PLANT FACILITIES			
Treatment Plant Structure / Infrastructure	50	25	The last significant improvements to the treatment plant were done in the 1960s. The plant building is in need of various architectural, structural, mechanical, and electrical upgrading.
Aeration Basin	69	5	Basin dates back to the 1920s. The concrete surfaces of the structure have deteriorated and need to be rehabilitated. Hydraulic improvements need to be made.
Sedimentation Basins	56	20	The concrete surfaces of both north and south basins and baffles are deteriorated and need to be rehabilitated.
Filters	45	5	The mono-media filters are old and have outlived their useful life. The filters need to be replaced.
Venturi Tube Effluent Meters	55	10	The plant's 36 venturi effluent meters are old and will need future replacement.
Clearwell	55	50	The interior of the clearwell needs to be inspected. Concrete rehabilitative work is anticipated.

EXHIBIT - 17

PROVIDENCE WATER

SUMMARY OF THE SYSTEM'S PRINCIPAL COMPONENTS BY FACILITY CATEGORY

PRINCIPAL COMPONENTS BY CATEGORY	Average Approx. Age of Component	Approx. Practical Remaining Life (years)	Condition
Wash Water System	35	20	The pumps and control equipment are over 30 years old and will need replacement. Washwater tank needs concrete rehabilitative work.
Service Water System	35	20	The pumps and control equipment are over 30 years old and will need replacing.
Ferric Storage/Transfer/Feed System	35	5	The bulk chemical system is over 30 years old and has been problematical. Conversion is in process to a new liquid ferric feed system.
Lime Storage/Transfer/Feed System	35	5	The existing lime feeders are over 30 years and are obsolete and need to be replaced. The pneumatic lime transfer system needs upgrading.
Chlorine Storage/Transfer/Feed System	35	5	The storage and feed equipment is over 30 years old and needs to be replaced. Safety improvements need to be made to the storage and feeder rooms.
Fluoride Storage/Transfer/Feed System	35	5	The chemical transfer system is over 30 years old and components of the system will need to be upgraded.
Sludge Handling / Disposal System	69	10	The sludge lagoons are nearing their capacity. Sludge removal will be necessary.
Process Control / Data Aquisition System	28	1	The existing process control system is over 25 years old , is obsolete, and needs to be replaced.
TRANSMISSION SYSTEM			
90-inch Scituate Tunnel and Aqueduct	70	50	Dates back to its original construction in the 1920s. No problems with the structure have been identified.
Supplemental Tunnel and Aqueduct	25	50	Dates back to its original construction in the 1970s. No problems with the structure have been identified.
Transmission Mains (16" to 66")	65	50	Some of the mains are older than 100 years and will eventually need to be replaced.
Transmission Valves (16" to 66")	55	25	Many of the valves are over 100 years old. The older valves in the system need to be replaced.
DISTRIBUTION SYSTEM			
Distribution Mains (6" to 12")	55	50	Approximately 28% of mains consist of unlined cast iron pipe installed prior to 1900. Main replacements will be necessary.
Distribution Valves (6" to 12")	45	25	Almost 30% of valves in the system are more than 75 years old with 15% installed prior to 1900. Valve repalcements are necessary.
Services	55	25	Many of the services in the system are over 100 years old. Approximately 1/2 are lead. The older services in the system need to be replaced with priority placed on lead services.
Hydrants	25	25	Hydrant replacement program has resulted in no hydrants in the system being older than 50 years. Hydrants will be replaced as they reach 50 year age.
Meters	45	5	More than half of all customer meters are old and of the unencoded variety and need to be replaced.

EXHIBIT - 17

PROVIDENCE WATER

SUMMARY OF THE SYSTEM'S PRINCIPAL COMPONENTS BY FACILITY CATEGORY

PRINCIPAL COMPONENTS BY CATEGORY	Average Approx. Age of Component	Approx. Practical Remaining Life (years)	Condition
PUMPING AND STORAGE			
Aqueduct Reservoir and Gatehouse	33	50	Dates back to the early 1960s. The roof of the gatehouse is in poor condition and needs replacement. The reservoir is in need of some concrete rehabilitation.
Neutaconkanut Reservoir and Gatehouse	67	40	Dates back to the 1920s. The roof of the gatehouse needs to be replaced. The interior of the reservoir needs to be inspected. The need for some concrete rehabilitative work is anticipated.
Longview Reservoir and Gatehouse	35	40	The older original section of the reservoir dates back to the 1920s. It is in need of some concrete rehabilitative work.
Ridge Road Reservoir	6	40	The storage tank is relatively new and in good condition.
Garden Hills Pump Station	36	20	The pump station dates back to 1960 but is in relatively good condition. The pumps and hydropneumatic tank are old and will need to be targetted for future replacement.
Dean Estates Pump Station	13	20	The pump station dates back to the 1980s and is in relatively good condition. The pumps and hydropneumatic tanks and will need to be considered for future replacement.
Fruit Hill Pump Station	6	25	Pump station is relatively new and in good condition.
Bath Street Pump Station	45	1	The pump station is old and deteriorated and is in need of major rehabilitation work.
Neutaconkanut Pump Station	45	1	The pump station is old and deteriorated and is in need of major rehabilitation work.
Greenville Ave Pump Station	1	30	The pump station is brand new and in excellent condition.
SUPPORT SYSTEMS & FACILITIES			
Forestry Garage	33	30	The building is over 30 years old and in need of some structural and architectural rehabilitation.
Academy Ave Administration Building	41	10	The building is over 40 years old, is of inadequate size and needs structural, architectural, and mechanical rehabilitation. A new administration building is needed.

Appendix

EXHIBIT - 18

Request for Extension

ARMANDO PARILLO
Chairman

JOEL D. LANDRY, II, ESQ.
Vice Chairman

JAMES LOMBARDI
Secretary

FERNANDO S. CUNHA, ESQ.
Legal Advisor

BOYCE SPINELLI
Ex-Officio

Providence Water

VINCENT A. CIANCI, JR.
Mayor

RICHARD O. RAFANOVIC, P.E.
General Mgr./Chief Engr.

JOSEPHINE DI RUZZO
City Councilwoman

EVELYN V. FARGNOLI
City Councilwoman

MARY A. NOCERA
Member

JOYCE TESSERIS
Member

November 29, 1995

Dr. Patricia A. Nolan, MD, MPH
Director of Health
R. I. Department of Health
3 Capital Hill
Providence, Rhode Island 02908

Attention: Dr. Walter S. Combs

Re: Providence Water - Infrastructure Replacement Plan

Dear Dr. Nolan:

Please accept this letter and enclosures as our initial submittal of our Infrastructure Replacement Plan.

Please be advised that Providence Water has $10.2 million of improvements in process to restore and replace aging facilities during FY 95-96. These projects are funded from a $12 million bond issue and a State Water Resources Board bond issue which were authorized and sold previously. Additionally, we are projecting $6.6 million worth of improvements for FY 96-97. Portions of this second year are still unfunded. Funding for the balance of FY 95-96 and for subsequent years' projects has been included as part of our revenue request, Docket 2304, filed with the Rhode Island Public Utilities Commission in March of 1995. We have requested $4 million annually and included our forecast for additional revenue requirements for this program in future years. Once PUC authorization is secured, we will be able to tie down the first 5 years of our IFR program with more certainty.

Providence Water will therefore, within 3 months from December 1, 1995, submit a 5-year construction plan and an additional 15-year construction and funding allocation plan as part of its Infrastructure Replacement Plan. Our construction program and our long-term funding projections are, of course, contingent upon receiving the necessary revenue increases to implement the program. Our submittal will also include all required documentation and will list our policies, objectives, methodologies and definitions supporting this plan.

Under current funding authorizations, we have the proceeds from both bond issues available . It is anticipated that the Public Utilities Commission will render its final decision before the end of December of this year.

Please be advised that we intend to update our plan by posting actual costs and expenditures after the closing of each fiscal year, extend our 5-year expenditure schedule by 1 year, and simultaneously extend the 20-year plan by 1 year correspondingly. We will also periodically submit updates of our Infrastructure Replacement Plan to reflect changing demands on our infrastructure and to reflect changes in authorized revenues. These updates will be submitted from time to time, but in any event, every 5 years.

Respectfully submitted,
PROVIDENCE WATER SUPPLY BOARD

Richard O. Rafanovic, P.E.
General Manager and Chief Engineer

2289
Enclosures
cc - Chairman and Members of Board, PWSB
June Swallow, RIDOH
Paul Gadoury, Director of Engineering
Director of Planning

INFRASTRUCTURE REPLACEMENT PLAN

FISCAL YEARS 1996 AND 1997

Project Description	FY 1996 Budget Amount	FY 1997 Budget Amount
RAW WATER SUPPLY		
Study / evaluation of secondary dams		$61,000
Rehabilitate Burton Pond Dam	$49,000	
Improvements to large dams	$316,000	$987,000
Sub-total	**$365,000**	**$1,048,000**
TREATMENT PLANT FACILITIES		
Central control board replacement	$1,350,000	$1,378,000
Chlorine room modifications	$221,000	$98,000
Corrosion protection twin 60 inch mains	$311,000	
Auxilary wash and blower system for filters	$309,000	
Replace sand filters	$372,000	$1,240,000
Replace effluent valve actuators		$132,000
Replace lime feed equipment	$403,000	$419,000
Replace ferric feed system	$496,000	
Treatment Plant - Replace boilers & water heaters	$212,000	
Upgr. Electrical Supply System to Treatment Plant	$996,000	
Influent Structure - replace valve actuator shafts		$38,000
Wash Water Tank - replace check valves		$17,000
Sub-total	**$4,670,000**	**$3,322,000**
DISTRIBUTION SYSTEM		
Replace / upgrade water mains		$455,000
Replace distribution valves	$700,000	$728,000

INFRASTRUCTURE REPLACEMENT PLAN

FISCAL YEARS 1996 AND 1997

Project Description	FY 1996 Budget Amount	FY 1997 Budget Amount
Replace lead services	$345,000	$358,000
Sub-total	**$1,045,000**	**$1,541,000**
PUMPING AND STORAGE		
Aqueduct reservoir - inspect / rehabilitation		$146,000
Neutaconkanut Gate House - replace roof		$5,000
Garden Hills P. S. - replace roof		$5,000
Aqueduct Siphon Chamber - replace roof		$5,000
Raw Water BPS Generator - fuel system upgrade	$16,000	
Raw Water BPS Generator - electrical upgrade	$124,000	
Rehab. roads/fencing pump stations / trans. lines	$27,000	$28,000
Longview reservoir - structural rehabilitation		$334,000
Upgrade Bath St. pump station	$2,111,000	
Upgrade Neutaconkanut pump station	$1,872,000	
Sub-total	**$4,150,000**	**$523,000**
SUPPORT SYSTEMS AND FACILITIES		
Remove / replace underground storage tanks		$132,000
Sub-total		**$132,000**
Total IFR Costs By Fiscal Year	**$10,230,000**	**$6,566,000**
Total Cost		**$16,796,000**

EXHIBIT - 19

The Comprehensive Clean Water Infrastructure Replacement Act of 1993

CHAPTER 15.6
CLEAN WATER INFRASTRUCTURE

SECTION.		SECTION.	
46-15.6-1.	Short title.	46-15.6-6.	Financing infrastructure replacement.
46-15.6-2.	Legislative findings, intent, and objectives.	46-15.6-7.	Rules governing content of programs, components, review, evaluation, funding, and implementation.
46-15.6-3.	Infrastructure replacement program.	46-15.6-8.	Severability.
46-15.6-4.	Content of infrastructure replacement component.	46-15.6-9.	Excluding requirement of state mandated cost.
46-15.6-5.	Completion, filing, approval and implementation of infrastructure component.		

46-15.6-1. Short title. — This chapter shall be referred to as the "Comprehensive Clean Water Infrastructure Act of 1993".

History of Section.
P.L. 1993, ch. 312, § 1; P.L. 1993, ch. 438, § 1.

Compiler's Notes. P.L. 1993, ch. 312, § 1, and P.L. 1993, ch. 438, § 1 enacted identical versions of this section.

46-15.6-2. Legislative findings, intent, and objectives. — The general assembly hereby recognizes and declares that:

(a) Water is vital to life and comprises an invaluable natural resource which is not to be abused by any segment of the state's population or its economy. It is the policy of this state to restore, enhance, and maintain the chemical, physical, and biological integrity of its waters to protect health;

(b) The waters of this state are a critical renewable resource which must be protected to insure the availability of safe and potable drinking water for present and future needs.

(c) It is a paramount policy of the state to protect the purity of present and future drinking water supplies by protecting the infrastructure of potable water, including treatment plants, pipes, valves, pumping stations, storage facilities, interconnections, and water mains.

(d) It is imperative to provide a uniform and valid mechanism to base assistance for the construction, repair, protection, and/or improvement of potable water infrastructure replacement.

(e) The decay of infrastructure and related construction due to deterioration or functional obsolescence can threaten the quality of supplies and, therefore, can endanger public health; thus it is necessary to take immediate and continuing steps to repair and replace the infrastructure used to deliver water supplies in order to restore water system facilities.

(f) Failure to replace the infrastructure used to deliver water supplies may cause and probably will continue to degrade the quality of public drinking water.

(g) Protection of water quality is necessary from the collection source through the point of delivery to the ultimate consumer.

(h) The potable threat to public health caused by unsafe drinking water far outweighs the economic costs for the construction of the potable water infrastructure replacement.

(i) That the objectives of this chapter are:

(1) To establish a funding mechanism to insure that infrastructure replacement programs are carried out by each municipality and by each municipal department, agency, district, authority, or other entity engaged in or authorized to engage in the supply, treatment, transmission, or distribution of drinking water, and

(2) That the said plans and their execution achieve and insure that the investment of the public in such facilities is not eroded.

History of Section.
P.L. 1993, ch. 312, § 1; P.L. 1993, ch. 438, § 1.

Compiler's Notes. P.L. 1993, ch. 312, § 1, and P.L. 1993, ch. 438, § 1 enacted identical versions of this section.

46-15.6-3. Infrastructure replacement program. — All municipalities, municipal departments and agencies, districts, authorities or other entities engaged in or authorized to engage in the supply, transmission, distribution of drinking water on a wholesale or retail basis, and which obtain, transport, purchase, or sell more than fifty million (50,000,000) gallons of water per year, shall be referred to as "Water Suppliers" for the purpose of this chapter. All water suppliers shall prepare, maintain, and carry out an infrastructure replacement program as described in this chapter.

History of Section.
P.L. 1993, ch. 312, § 1; P.L. 1993, ch. 438, § 1.

Compiler's Notes. P.L. 1993, ch. 312, § 1, and P.L. 1993, ch. 438, § 1 enacted identical versions of this section.

46-15.6-4. Content of infrastructure replacement component. — The infrastructure replacement component [hereinafter referred to as component] shall include without limitation:

(A)(1) A detailed financial forecast of facility replacement improvement requirements for the next twenty (20) years including but not limited to the principal components of the water system such as reservoirs, dams, treatment plants, pipes, valves, fire hydrants, pumping stations, storage facilities, pumping and well equipment, interconnections and water mains. Each financial forecast shall analyze the condition and life expectancy of the existing facilities, prioritize needed repairs and replacements and amortize such improvement requirements on an annual basis over the next twenty (20) years in accordance with rules and regulations promulgated herein. Water suppliers which have in effect infrastructure improvement or rehabilitation programs and mechanisms for funding approved by their appropriate governing bodies may submit their existing programs for complete or partial compliance with the provisions of this section.

(2) A method that establishes and maintains fiscal controls and accounting depreciation standards sufficient to ensure proper accounting for evaluation of facility requirements necessitated by this chapter in accordance with rules and regulations promulgated herein.

(B) Components shall be consistent with applicable local comprehensive plans in which the service areas is or is planned to be located.

(C) Proceeds from the watershed protection fund shall be usable for reimbursement of water suppliers for preparation of their infrastructure replacement components as described in this chapter up to fifty percent (50%) of the cost of the component.

History of Section.
P.L. 1993, ch. 312, § 1; P.L. 1993, ch. 438, § 1.

Compiler's Notes. P.L. 1993, ch. 312, § 1, and P.L. 1993, ch. 438, § 1 enacted identical versions of this section.

46-15.6-5. Completion, filing, approval and implementation of infrastructure component. — Each water supplier required by this chapter to prepare and maintain an infrastructure replacement component shall complete and adopt a component one (1) year subsequent to the date each party's water supply management plan per § 46-15.4-4 is due.

(a) Water suppliers subject to the requirements of § 46-15.6-3 shall file a copy of all components, only to the extent the components differ from plans filed under § 46-15.4-3 thereto with the following: the division of drinking water quality of the department of health (hereinafter referred to as "the department").

(b) A water supplier subject to § 46-15.6-3 shall review their components at least once every five (5) years and shall modify or replace their components as necessary.

(c) The department shall coordinate expeditious review of components prepared by water suppliers subject to this chapter. Upon receipt of components prepared by water suppliers under this chapter the department of environmental management's water supply management division, or its successor, the department of administration's division of planning and the public utilities commission (for those water suppliers within its jurisdiction) shall have one hundred and twenty (120) days to review the components and submit comments thereon to the department. Upon consideration of written comments by all agencies designated herein the department shall determine whether the component complies with the requirements of this chapter. This determination shall be made within eight (8) months of the initial submission. A thirty (30) day public comment period shall be included in this eight (8) month review period. Failure by the department to notify water suppliers of its determination within the prescribed time limit shall constitute approval.

(d) Each water supplier shall implement the requirements of its infrastructure replacement program and component, including its infrastructure replacement fund, as mandated by this chapter in accordance to rules and regulations promulgated per § 46-15.6-7.

History of Section.
P.L. 1993, ch. 312, § 1; P.L. 1993, ch. 438, § 1.

Compiler's Notes. P.L. 1993, ch. 312, § 1, and P.L. 1993, ch. 438, § 1 enacted identical versions of this section.

46-15.6-6. Financing infrastructure replacement. — The cost of infrastructure replacement programs and indemnification as required by this chapter shall be financed as follows:

(a) The cost of programs to implement infrastructure replacement shall be paid by the water users at a rate directly proportionate to the users' water consumption. Such charges shall be limited to those necessary and reasonable to undertake the actions required by this chapter. These charges shall be based upon the annual funding requirements of the facility improvements necessitated over each successive twenty (20) year period. Interest earned on moneys in this

infrastructure replacement fund shall be credited to this infrastructure replacement fund.

(b) Each water supplier designated in § 46-15.6-3 shall establish a special account designated as the infrastructure replacement fund to be held as a restricted receipt account and to be administered by the water supplier solely to implement and carry out the replacement of infrastructure as required by this chapter.

(c) Any moneys which may accumulate in the infrastructure replacement fund in excess of that needed to implement the annual infrastructure replacement program or in excess of that exclusively pledged to repayment of outstanding bonds or notes or loan repayments to implement the infrastructure replacement program shall revert to the rate payers of that particular system on a biannual basis.

(d) Each water supplier designated in § 46-15.6-3 may, as a complete or partial alternative to direct funding of its infrastructure replacement program, finance its infrastructure replacement program through bonding. The annual debt service of each bond or bonds shall be applied and credited towards the annual requirement of the infrastructure replacement program's annual funding requirements.

(e) The Rhode Island public utilities commission, as to water suppliers within its jurisdiction, shall permit an increase for just and reasonable infrastructure replacement in the portion of the water suppliers' rate structure to comply with this chapter and shall allow the water supplier to add this required funding to its rate base in accordance with this chapter.

History of Section.
P.L. 1993, ch. 312, § 1; P.L. 1993, ch. 438, § 1.

Compiler's Notes. P.L. 1993, ch. 312, § 1, and P.L. 1993, ch. 438, § 1 enacted identical versions of this section.

As enacted by P.L. 1993, ch. 312, § 1, and P.L. 1993, ch. 438, § 1, the introductory language contained a reference to "this act". The reference is to P.L. 1993, ch. 312, § 1, and P.L. 1993, ch. 438, § 1. The apparent reference is to "this chapter", and "this chapter" was substituted for "this act" by the compiler.

46-15.6-7. Rules governing content of programs, components, review, evaluation, funding, and implementation. — The department with the concurrence of the department of environmental management's water supply management division or its successor, the department of administration's division of planning, and the Rhode Island public utilities commission, as to water suppliers within its jurisdiction, shall forthwith promulgate rules and regulations for the review of components as pertains to financial forecasts of facility replacement, improvement requirements and fiscal controls and accounting depreciation standards per § 46-15.6-4(A)(1) and (A)(2). The department with the concurrence of the department of environmental management's water supply management division or its successor, the department of administration's division of planning, and the Rhode Island public utilities commission, as to water

suppliers within its jurisdiction, shall promulgate the criteria or standards which it will use to evaluate the implementation of approved components, programs and funding mechanisms.

History of Section.
P.L. 1993, ch. 312, § 1; P.L. 1993, ch. 438, § 1.

Compiler's Notes. P.L. 1993, ch. 312, § 1, and P.L. 1993, ch. 438, § 1 enacted identical versions of this section.

46-15.6-8. Severability. — If any provision of this chapter or of any rule, regulation or determination made thereunder, or the application thereof to any person, agency or circumstances, is held invalid by a court of competent jurisdiction, the remainder of the chapter, rule, regulation, or determination and the application of such provisions to other persons, agencies, or circumstances shall not be affected thereby. The invalidity of any section or sections of this chapter shall not affect the validity of the remainder of this chapter.

History of Section.
P.L. 1993, ch. 312, § 1; P.L. 1993, ch. 438, § 1.

Compiler's Notes. P.L. 1993, ch. 312, § 1, and P.L. 1993, ch. 438, § 1 enacted identical versions of this section.

46-15.6-9. Excluding requirement of state mandated cost. — The provisions of §§ 45-13-7 — 45-13-10 inclusive shall not apply to §§ 46-15.6-1 — 46-15.6-8 inclusive.

History of Section.
P.L. 1993, ch. 312, § 1; P.L. 1993, ch. 438, § 1.

Compiler's Notes. P.L. 1993, ch. 312, § 1, and P.L. 1993, ch. 438, § 1 enacted identical versions of this section.