

# **Capital Improvement Program**

*Fiscal Years 2002 - 2006*

The Narragansett Bay Commission  
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Vincent J. Meselella  
Chairman

Paul Pinault, P.E.  
Executive Director

Dear Friends:

I am pleased to present the Narragansett Bay Commission's (NBC) FY 2002-2006 Capital Improvement Program (CIP). This document serves to summarize the major projects that are in progress, will be initiated, or completed within NBC service area over the next five fiscal years.

The CIP is updated annually to reflect program changes, progress and changes in financing. This year's plan identifies a five-year capital financial need of \$293 million. In addition this plan outlines all project costs outside the 5-year window (before FY 2002 and after FY 2006) in order to capture total project costs. Along with these costs, the CIP summarizes all possible sources of financing for these projects as well as the financial impacts these projects will have on NBC's annual operating budget.

The NBC is committed to serving the needs of the community and its users by continuing to improve the water quality of Narragansett Bay and its tributary rivers. I believe this CIP demonstrates this commitment.

I would like to take this opportunity to thank the NBC Board of Commissioners, the Citizens Advisory Committee, members of my staff, and everyone who contributed to the development of this year's CIP.

A handwritten signature in black ink, appearing to read "Paul Pinault".

Paul Pinault, P.E.  
Executive Director

# **Acknowledgements**

*The fiscal year 2002 - 2006 Capital Improvement Program was prepared by William Bowers, Financial Analyst, Division of Administration and Finance, based upon input from staff from all sections and divisions of the Narragansett Bay Commission. This plan was completed with the assistance and supervision of Jackie Saul, Financial Analyst.*

*The development of the CIP also involved the cooperation, assistance and guidance of Paul Pinault, P.E., Executive Director, the Narragansett Bay Commission Board of Commissioners and its Construction, Engineering and Operations Subcommittee, as well as the Narragansett Bay Commission's Citizens Advisory Committee.*

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# **Project Listings**

## FY 2002 - 2006 CAPITAL IMPROVEMENT PROGRAM

### PROJECT LIST

#### WASTEWATER TREATMENT FACILITY IMPROVEMENTS 2002-2006

CONTRACT 102:FPWWTF DRY WEATHER AND CSO CHLORINATION/DECHLORINATION SYSTEM	\$	-	*
CONTRACT 103: SHORT TERM SOLIDS HANDLING IMPROVEMENTS	\$	633,000	
CONTRACT 104: SEPTAGE RECEIVING FACILITIES	\$	40,000	
CONTRACT 105: FPWWTF STORAGE BUILDING AND MISCELLANEOUS CSO AND OTHER IMPR.	\$	-	*
CONTRACT 109: FIELD'S POINT FACILITIES PLAN AMENDMENT	\$	11,477,000	
CONTRACT 807: BPWWTF IMPROVEMENTS	\$	57,534,000	
CONTRACT 807CD: BPWWTF IMPROVEMENTS - DECHLORINATION FACILITIES	\$	-	*
SITE SPECIFIC CRITERIA	\$	50,000	
FIELD'S POINT: ROYCE SLUDGE ANALYZERS FOR 9 CLARIFIERS	\$	-	*
FIELD'S POINT: REPLACEMENT OF GRAVITY THICKNER CATWALKS	\$	-	*
FIELD'S POINT: PAINTING AND REPLACEMENT BUCKET FOR ASH CRANE	\$	-	*
FIELD'S POINT: REPLACEMENT OF DUMPSTERS	\$	50,000	
SUBTOTAL	\$	69,784,000	

#### SEWER SYSTEM IMPROVEMENTS 2002-2006

CONTRACT 302.2: CSO REASSESSMENT	\$	-	*
CONTRACT 302.03: COMPREHENSIVE COMBINED SEWER OVERFLOW PROGRAM	\$	214,848,000	
CONTRACT 304: EVALUATION AND CLEANING OF CSO INTERCEPTORS	\$	440,000	
CONTRACT 304.2C: BRANCH AVENUE INTERCEPTOR REHABILITATION	\$	-	
CONTRACT: 304.03 SAYLESVILLE PS FORCE MAIN	\$	-	
CONTRACT 305: CSO 2B HEADWALL IMPROVEMENTS	\$	-	*
CONTRACT 504: IMPROVEMENTS TO NBC-OWNED INTERCEPTORS IN JOHNSTON	\$	-	*
CONTRACT 704P: INVESTIGATION AND REHAB. OF WASHINGTON HWY AND OMEGA PUMP STS	\$	4,227,000	
CONTRACT 903: GEOGRAPHIC INFORMATION SYSTEM IMPLEMENTATION	\$	1,416,000	
SUBTOTAL	\$	220,931,000	

#### BUILDINGS AND GROUNDS 2002-2006

CONTRACT 904: NBC CORPORATE OFFICE BUILDING	\$	2,000,000	
LABORATORY: ION CHROMATOGRAPH	\$	35,000	
LABORATORY: CYNAIDE FLOW INJECTION BY LIGIAND EXCHANGE	\$	35,000	
LABORATORY EQUIPMENT: ICP/MS	\$	200,000	
LABORATORY EQUIPMENT: MERCURY ANALYZER	\$	27,000	*
VEHICLE REPLACEMENTS	\$	655,000	
SUBTOTAL	\$	2,952,000	

**GRAND TOTAL \$ 293,667,000**

\*project costs through FY 2001 only.

**Section I**  
*CIP Overview*

## **FISCAL YEAR 2002 - 2006 CAPITAL IMPROVEMENT PROGRAM**

The Narragansett Bay Commission's (NBC) 2002-2006 Capital Improvement Program (CIP) identifies over \$293 million of capital improvement projects in progress, to be initiated or completed within the five fiscal years of 2002-2006. Also reflected are total expenditures of approximately \$376 million for the completion of all scheduled projects.

The CIP defines each capital project, as a capital expenditure greater than \$20,000, by functional area (wastewater treatment facilities, sewer systems, and buildings and grounds). Cash flow projections for each project are shown along with the functional area, funding sources and projected schedule. Project costs are also depicted by phase (planning, design, and construction).

There are many factors that can impact the Narragansett Bay Commission's (NBC) sources of capital. This CIP attempts to take into consideration the most significant of these factors such as the State of Rhode Island's capital budget, the maximum funding available under the State Revolving Loan Fund program (SRF) and pending federal legislation to accurately reflect the costs associated with the funding of this program and the resulting impact upon users within the service area.

It should also be noted that for the purpose of simplification, this CIP does not include the financing costs associated with new debt in the individual project description sheets. These costs are reflected in the debt service calculations.

### **SIGNIFICANT CAPITAL PROJECTS**

#### ***Contract 302.03: Phase I Combined Sewer Overflow (CSO) Facilities***

Providence, Pawtucket and Central Falls have combined sewers that overflow at approximately 70 locations during significant wet weather events. NBC's Combined Sewer Overflow (CSO) Program will mitigate the impact of these overflows through the construction of wet weather control facilities. The planned program consists of two tunnels, the Main Spine tunnel (16,000 ft. long) and the Pawtucket tunnel (13,000 ft. long), two tunnel pump stations, five CSO interceptors and twelve sewer separation projects. The CSO program represents 73% of the total costs outlined in this plan. It remains the most significant project underway at the NBC.

On April 17, 1998 the NBC submitted the CSO plan embodied in a Concept Design Report Amendment to the Rhode Island Department of Environmental Management (RIDEM). This plan was approved by RIDEM on July 12, 1999. In accordance with the terms of the 1992 Consent Agreement, the NBC was required to submit preliminary design plans for Phase I within nine (9) months (by April 12, 2000). The preliminary design plans for the main spine tunnel were submitted to RIDEM on November 15, 1999 and were approved by RIDEM on April 11, 2000. The preliminary design plans for the tunnel pump station were submitted to RIDEM on February 16, 2000. These plans were approved by RIDEM on June 26, 2000.

In accordance with the Consent Agreement, NBC will have fifteen (15) months from July 26, 2000 to submit the final plans for all of the Phase I CSO facilities. According to the Consent Agreement, CSO facilities must then be constructed in accordance with the schedule submitted with the final plans. Currently the NBC is working on the following items: 1) final design for the tunnel and tunnel pump station; 2) land takings and easements to support construction of Phase I; 3) permitting; 4) fire and safety requirements during construction; and 5) Construction administration procedures.

Since last year's CIP there has been some cost modifications for the CSO Program. The primary reasons for the modifications are the indexing of costs and the inclusion of "soft costs". Ultimately however, project costs will not be known until the project is bid and will depend upon the construction bidding climate at that time.

NBC's lead design manager, the Louis Berger Group, Inc. (Berger), developed the original cost estimate for this program as part of the stakeholders process in 1997. At that time, the cost for Phase I was estimated at \$165 million. That cost, which was used in the CDRA was based on an Engineering News Record Construction Cost Index (ENRCCI) of 5500 for August 1995. The ENRCCI is an independent cost index that reflects the impacts of labor costs, materials costs, and the marketplace on the cost of construction. Berger has since used the ENRCCI to project the CSO Abatement Program's cost through the mid-point of Phase I construction in January 2004 (estimated to be 6832). This indexing results in a 24 percent increase of total estimated project costs ( $6832/5500 = 1.24$ ). This indexing is applicable to each of the final alternatives that were considered as part of the stakeholders process. In addition, the original cost estimates did not include the "soft costs" of construction. Soft-Costs include construction management, project labor administration, security, engineering during construction and a public information program.

The description, schedule, and costs reflected in the detailed portion of project listings in this document are for the first phase only. At the end of this phase, the NBC is committed to a two-year re-evaluation period to evaluate the water quality improvements and reassess the technologies to determine if future phases of the plan should be modified. The NBC has fully explored all available alternatives for satisfying the Federal Clean Water Act mandate to eliminate or mitigate the CSO's in its service area. The stakeholder process, along with the assistance of Berger, has resulted in a program that will impose the least cost burden on NBC's ratepayers while meeting regulatory requirements.

Because of the cost associated with the CSO project, the NBC has been, and continues to actively pursue financial assistance from both state and federal sources. On the state level, the Governor's proposed fiscal year 2001 budget included a \$30 million referendum to issue state funded general obligation bonds on behalf of the NBC to help defray the associated costs of the CSO program. During the legislative session, the budget was amended to include a \$60 million referendum to issue state funded general obligation bonds on behalf of the Rhode Island Clean Water Finance Agency (RICWFA), the administrators of the State Revolving Loan Fund (SRF). In turn, the RICWFA would

leverage the bonds with state and federal capitalization grants to provide loans at a subsidized interest rate of zero percent to qualifying organizations for water pollution abatement projects. The legislation requires that “not less than \$70,000,000 in leveraged funds will be allocated for loans at a subsidized rate of zero percent to the Narragansett Bay Commission to fund costs associated with combined sewage overflow projects.” If the referendum receives voter approval in November 2000, then bond issuance and loan approval are still necessary before the NBC has access to these funds.

On the federal level, the entire Congressional delegation of Rhode Island continues to work in Washington, D.C. in a non-partisan manner to secure some funding for Phase I of the NBC's CSO project. Throughout 1998, 1999, and 2000, Representatives Patrick Kennedy and Bob Weygand and Senators John Chafee, Lincoln Chafee and Jack Reed have consistently requested \$10 million in annual appropriations from the House and Senate Committees on VA, HUD and Independent Agencies (which oversee the budget for the EPA). In August 1999, due to the efforts of the late Senator John Chafee, the Water Resources Development Act (WRDA) of 1999 increased the authorization for the NBC's CSO construction project from \$30 million to \$60 million. However, no appropriation has yet resulted from the WRDA authorization, and to date the federal government has made no appropriation of any kind to the NBC for the CSO project.

#### ***Contract 807: Bucklin Point Wastewater Treatment Facility Improvements***

Contract 807, the second largest project underway at the NBC will completely modernize the Bucklin Point Wastewater Treatment Facility. The last major improvements to the plant occurred in 1973 when it was upgraded to secondary treatment. The planned improvements include: increasing wet weather capacity to 116 MGD (Million gallons/day), a new influent pumping station, new screening and grit handling facilities, new dry weather primary settling tanks, conversion of the existing primary tanks to wet weather treatment, conversion to a fine bubble aeration system, new ultra-violet disinfection facilities, new effluent pumping station for dry weather flows, and a new plant instrumentation and control system.

### **PROGRAM CHANGES**

#### ***Wastewater Treatment Facilities (WWTF)***

Contract 103: Short Term Solids Handling Improvements: This project has been modified as a result of negotiations with the Rhode Island Resource Recovery Corporation (RIRRC). The NBC has successfully negotiated an agreement with the RIRRC for beneficial reuse of Field's Point and Bucklin Point biosolids. This will substantially reduce costs associated with this project. The agreement proposes that liquid biosolids from both facilities will be sent for processing at a new regional biosolids facility located on Field's Point Drive in Providence. Once RIRRC's facility is constructed and operational, the NBC will implement its original plan of demolition of the existing Filter Building, Interim Solids Handling Building and the abandoned sludge incinerator.

Costs included in the CIP are for structural problems with the brickwork on the existing incinerator building which have recently been investigated and safety concerns have warranted immediate repair work to this building. Future plans include demolition of this damaged portion of the building and construction of a new wall on the south side of the building to enclose the existing incinerator. The existing operable sludge incinerator will be maintained as a back-up means of sludge disposal if the situation in the future necessitates an alternate means of disposal.

The following contracts have been removed from this years Capital Improvement Program: Contract 101: Final Clarifiers and Control System: This project was declared complete on February 14, 1997 however retainage remained until FY 2000. Contract 108: Y2K Compliance Program: this project involved the replacement, update and implementation of non-compliant NBC computer software, hardware, and embedded systems. Contract 809: Bucklin Point North Landfill Closure: has been completed.

All Laboratory equipment, which has been shown under Wastewater Treatment Facility improvements in previous CIP's, has been moved to the Buildings and Grounds portion of the document.

### ***Sewer System***

Contract 701: Replacement of the Lincoln (Saylesville) Pump Station and Contract 702: Infiltration/Inflow Study Louisquissett Pike Area were both completed during FY 2000 and were removed from this year's CIP. Contract 304.03: Evaluation and Cleaning of CSO interceptors: Has been added to the program.

### ***Buildings and Grounds***

The purchase of two additional pieces of laboratory equipment has been added this year. The Ion Chromatograph which will offer better sensitivity and less matrix interference when analyzing Hexavalent Chrome and a Cyanide Flow Injection which will be a new method required by RIDEM for detecting cyanide in plant samples.

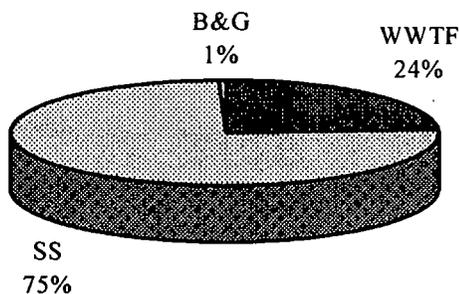
### **COSTS BY FUNCTIONAL AREA**

The capital projects have been assigned to functional area as follows:

Field's Point and Bucklin Point Wastewater Treatment Facility (WWTF) improvements include the contracts related to facility improvements, laboratory, septage receiving and various facility maintenance projects. Sewer System (SS) improvements include the Combined Sewer Overflow project, interceptor rehabilitation, sewer construction, and pumping station improvements. Buildings and Grounds (BG) projects include building repair and equipment purchases to support NBC staff.

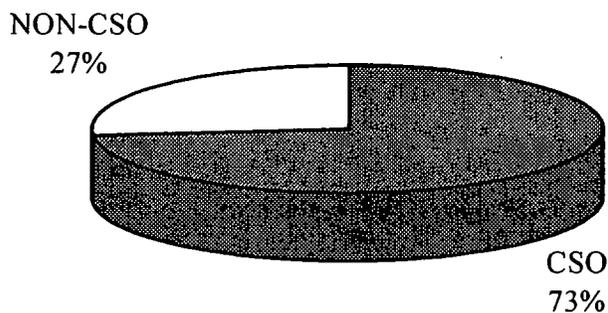
Of the \$293 million in capital improvements scheduled over the five year period, 75% or \$221 million of the total costs are in the sewer system category; 24% or \$70.08 million are for wastewater treatment facility improvements; and 1% or \$2 million are for building and grounds projects. These costs are depicted in the chart below.

### COST BY FUNCTIONAL AREA



To readily view the magnitude of the CSO program, the chart below shows that the CSO program related costs account for \$214 million or 73% of the total five-year capital program.

### CSO vs. NON-CSO



### FISCAL IMPACT

The CIP is a planning document and the costs and schedules it reflects are based on the best available information. Experience has shown that as projects proceed from planning

to construction, costs generally increase. There are several funding sources for scheduled CIP projects and many projects will have funding from more than one source. The funding options available are described in the following paragraphs.

### *Grants*

In the past, Federal grants were provided by the United States Environmental Protection Agency under the Construction Grants Program. Grants were between 55% and 75% of the total eligible project cost. In addition, RIDEM provided a federal grant match with a grant of 15% of the total eligible project cost. The Construction Grants Program has been phased out and replaced with the State Revolving Loan Fund.

### *BVDC Bonds*

The NBC merged with the former Blackstone Valley District Commission (BVDC) on January 1, 1992. The former BVDC had the use of state general obligation (g.o.) bonds issued on their behalf. A statewide voter referendum approved in 1971 authorized \$3.3 million in g.o. bonds for site specific uses such as the planning, construction and equipping of interceptor sewer extension for the Washington Highway Interceptor. In 1986, a statewide voter referendum was passed by the voters authorizing the use of \$17.2 million for upgrades and improvements to the Bucklin Point facility and its interceptor system.

Prior to the merger, debt service was recovered through billings to each of the municipalities served by the Bucklin Point facility. Debt service was allocated based on the proportion of the community's flow to the total flow. As a result of NBC's prior rate filing, all debt service is now billed directly to the users.

### *Bay Bonds*

In 1980, an \$87.7 million bond issue was passed by the voters to finance improvements to the NBC sewer system that would result in improved water quality. Of the \$87.7 million in Bay Bonds, \$15 million of the authorization was transferred to the former Blackstone Valley District Commission (\$6 million) and the Pawtuxet River Authority (\$9 million) during the 1990 session of the Rhode Island General Assembly. A \$15 million NBC bond issue was passed in the 1992 general election to replace these funds. As a result, voters have authorized a total of \$93.7 million in Bay Bonds for NBC. A total of \$84 million has been issued to date.

Of the \$93.7 million authorized, R.I. General Law 46-25 requires that NBC users be responsible for the debt service on \$14.059 million. To date, user charges are financing the debt service on \$13.485 million of this amount. The remaining amount will become an obligation of the State.

The State Budget Office is responsible for the issuance of Bay Bonds on behalf of NBC. The projected availability of Bay Bonds noted in the CIP is consistent with the State of

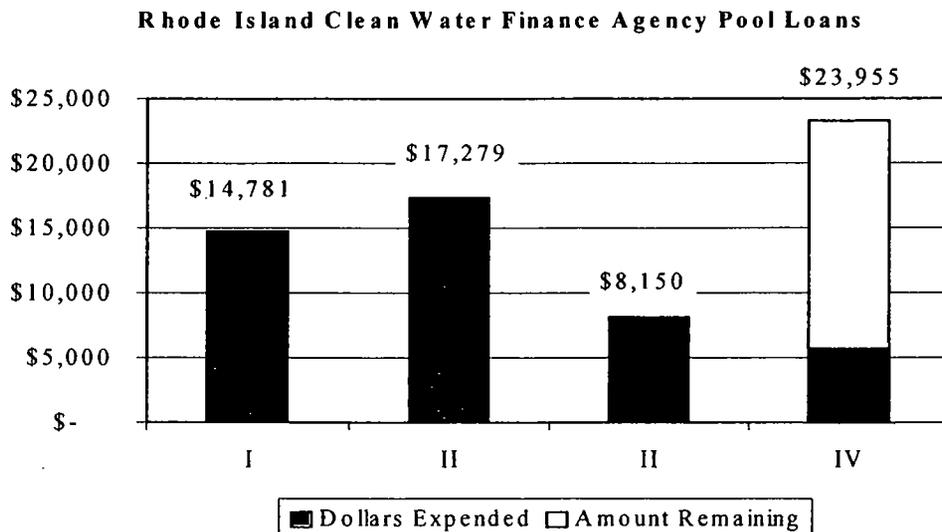
Rhode Island's Capital Budget. It should be noted, however, that the State occasionally modifies the bond issuance schedule from that set forth in the State Capital Budget.

*State Revolving Fund (SRF)*

When the Construction Grants Program was phased out as a result of the 1987 reauthorization of the Federal Clean Water Act it was replaced with the SRF program. The SRF finances water quality improvement projects through a low interest loan program. The amount that will be available for borrowing is dependent upon congressional action and the borrowings of other Rhode Island communities.

The Rhode Island Clean Water Finance Agency (RICWFA) administers the SRF program. As a public corporation of the State, the agency receives its funding through capitalization grants from the EPA and state bond issues and by selling its own tax-exempt revenue bonds supported by these capitalization grants. The agency loans funds to municipalities, sewer commissions, and wastewater management districts for water pollution abatement projects upon approval by RIDEM. Loans are at a rate one-third below the borrowers' market cost of borrowing. The Agency's operating expenses are funded solely by loan fees and investment income generated from administering the SRF.

The NBC has received seven different loans from the RICWFA. Three of these loans were to fund projects in North Providence, Washington Park, and the Reservoir Avenue Pump Station repairs. The remaining four loans are pooled loans and are used to finance numerous NBC capital projects. The chart below shows the total of each pool loan, total funds expended to date, and the remaining balance available.



If the \$60 million referendum passes in November, NBC could start receiving 0% loans in summer of 2001.

The financing costs associated with the SRF program are reflected in the debt service calculations.

#### *Revenue Bonds*

This category includes those projects that are to be funded via Revenue Bonds and all debt service will be paid from user charges. In general, revenue bonds will be used only to finance those projects that are not eligible for SRF funding or once all SRF funds are exhausted. The financing costs associated with the issuance of revenue bonds are reflected in the debt service calculations. This year's CIP does not propose to fund any projects with revenue bonds since it is the NBC's most expensive means of financing capital improvements.

#### *Replacement Reserve*

The NBC has established a replacement reserve to fund the replacement of vehicles and equipment at the end of their useful life. This account is funded by user charges via a restricted account.

#### *Operating Budget*

The operating budget is financed by sewer user charges. It funds the purchase of non-replacement capital equipment and facilities and may also reflect the annual operating expense associated with short term financing.

Funding source and cash flows by functional area are shown in Table 1 on the following page.

**Table 1**  
**(Cash Flow Basis in Thousand \$'s)**  
**Wastewater Treatment Facility Improvements**

Funding Source	FY 02	FY 03	FY 04	FY 05	FY 06	Total
Grant	-	-	-	-	-	-
BVDC Bonds	-	-	-	-	-	-
Bay Bonds	-	-	-	-	-	-
SRF	12,885	20,674	20,041	16,134	-	69,734
Revenue Bonds	-	-	-	-	-	-
Rep. Reserve	-	50	-	-	-	50
Op. Budget	-	-	-	-	-	-
<b>Total</b>	<b>12,885</b>	<b>20,724</b>	<b>20,041</b>	<b>16,134</b>	<b>-</b>	<b>69,784</b>

**Sewer System Improvements**

Funding Source	FY 02	FY 03	FY 04	FY 05	FY 06	Total
Grant	-	-	-	-	-	-
BVDC Bonds	-	-	-	-	-	-
Bay Bonds	9,161	-	-	-	-	9,161
SRF	20,431	51,735	53,322	45,906	40,376	211,770
Revenue Bonds	-	-	-	-	-	-
Rep. Reserve	-	-	-	-	-	-
Op. Budget	-	-	-	-	-	-
<b>Total</b>	<b>29,592</b>	<b>51,735</b>	<b>53,322</b>	<b>45,906</b>	<b>40,376</b>	<b>220,931</b>

**Buildings and Grounds Improvements**

Funding Source	FY 02	FY 03	FY 04	FY 05	FY 06	Total
Grant	-	-	-	-	-	-
BVDC Bonds	-	-	-	-	-	-
Bay Bonds	-	-	-	-	-	-
SRF	2,000	-	-	-	-	2,000
Revenue Bonds	-	-	-	-	-	-
Rep. Reserve	387	110	285	40	130	952
Op. Budget	-	-	-	-	-	-
<b>Total</b>	<b>2,387</b>	<b>110</b>	<b>285</b>	<b>40</b>	<b>130</b>	<b>2,952</b>

The estimated cost of the projects identified in this year's capital program is approximately \$293 million between FY 2002 – FY 2006. Table 2 summarizes the projected cash flows from each of the funding sources.

Table 2  
(In Thousand \$'s)  
Total Funding Costs

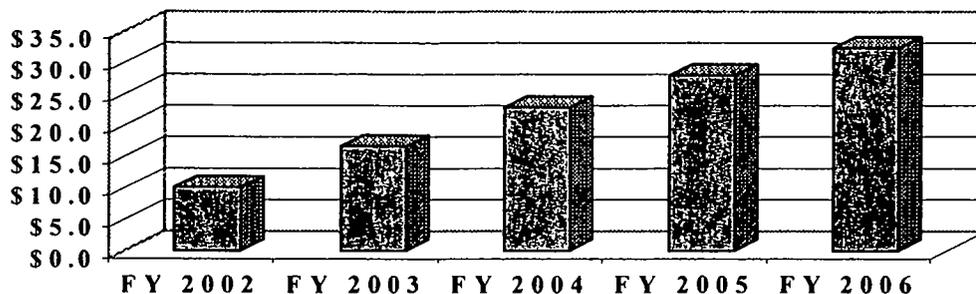
Funding Source	FY 02	FY 03	FY 04	FY 05	FY 06	Total
Grant	-	-	-	-	-	-
BVDC Bonds	-	-	-	-	-	-
Bay Bonds	9,161	-	-	-	-	9,161
SRF	35,316	72,409	75,363	62,040	40,376	283,504
Revenue Bonds	-	-	-	-	-	-
Rep. Reserve	387	160	285	40	130	1,002
Op. Budget	-	-	-	-	-	-
<b>Total</b>	<b>44,864</b>	<b>72,569</b>	<b>75,648</b>	<b>62,080</b>	<b>40,506</b>	<b>293,667</b>

Based on the State's current capital budget, existing bond authorizations, and projected rates of expenditure, it appears that the Bay Bonds will be exhausted by fiscal year 2002. NBC will also be funding the CSO through SRF funds as the least costly alternative and will utilize the SRF program, as its primary source of funding for NBC's other capital projects. Approximately \$233 million in SRF funds are anticipated to be expended between FY 2002 through FY 2006.

**IMPACT ON TOTAL ANNUAL REVENUE REQUIREMENTS  
AND SEWER USER FEES**

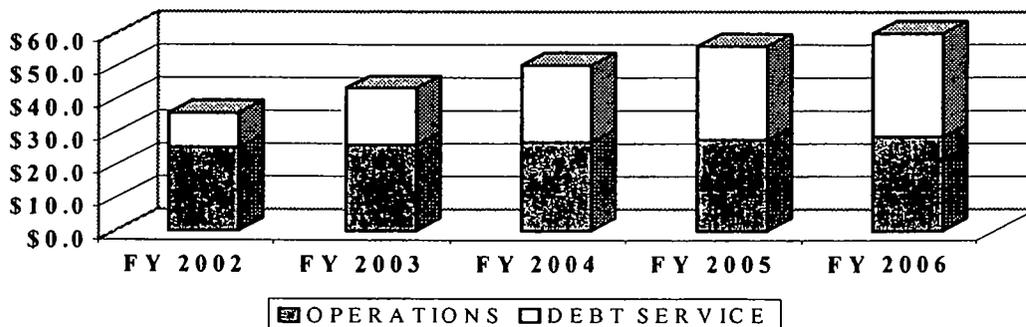
As the NBC proceeds with the construction phase of the CSO abatement project and financing resources become more costly, the impact of the capital program on NBC's budget and ultimately its users becomes more significant. In order to assess the fiscal impact of the improvements, debt service payments have been estimated from the cash flow projections. As shown graphically on the following page, annual debt service increases from \$9.6 million in fiscal year 2002 to \$33 million in fiscal year 2006.

**ANNUAL DEBT SERVICE**  
(In Million \$'s)



Assuming a reasonable increase of 3% per year to the operating budget (less debt service) and beginning in fiscal year 2002, NBC's total revenue requirement will increase from \$35.1 million in FY 2002 to approximately \$61.6 million in fiscal year 2006. Of this amount, debt service would account for 28% of the total annual budget in FY 2002 and approximately 54% of the total annual budget in FY 2006 as shown in the following graph.

**ANNUAL REVENUE REQUIREMENT**  
(In Million \$'s)



**SEWER USER FEES**

The Public Utilities Commission (PUC) regulates the NBC. Any modifications to NBC user fees are subject to a lengthy review and approval process by the PUC. NBC's approved revenue requirement as of July 1, 2000 is \$30.4 million. Included in this revenue requirement is an allowance of \$7.2 million for debt service and debt service coverage on SRF loans. This capital program will require rate relief to fund debt service.

On June 29, 2000 the NBC filed an application with the PUC for a rate increase that would raise revenues by \$10,089,441 to support a total operating revenue requirement of

\$39,638,496. This represents an overall increase in revenues of 34.1%. Of the \$10 million needed, 64% will be for debt service to fund the CSO. New rates will not take effect until the PUC has conducted a full investigation and hearing on the proposed rate increase.

Below is a comparison of NBC's current residential sewer rates with other Rhode Island Communities.

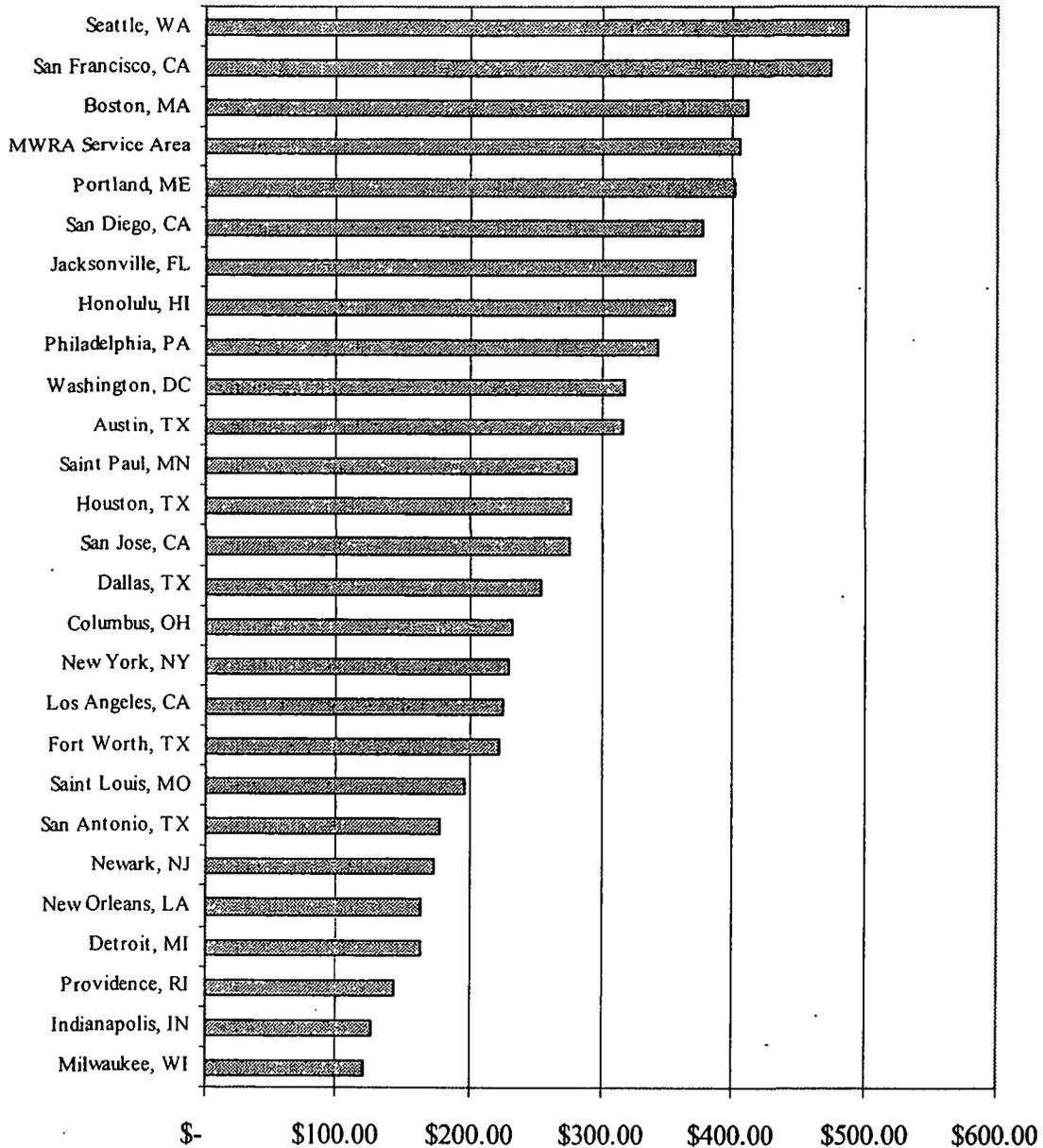
### Narragansett Bay Commission 1999 User Fee Survey

MUNICIPALITY / WASTEWATER TREATMENT FACILITY	ANNUAL SEWER USER FEE	BASED ON 200 GPD or 97.6 HCF
WOONSOCKET	Flat Rate \$91.58	\$91.58
NBC FIELD'S POINT*	\$44.23 Plus \$.85/hcf	\$127.19
EAST PROVIDENCE	\$10.00 Plus \$1.90/hcf over 35 hcf	\$128.94
NBC BUCKLIN POINT*	\$44.23 Plus \$.99/hcf	\$140.85
SOUTH KINGSTOWN	Flat Rate: \$147 Plus \$1.83/hcf over 100 hcf	\$147.00
WESTERLY	Flat Rate \$148.00	\$148.00
EAST GREENWICH	\$1.90/hcf for 85% of Water Usage	\$157.62
NORTH SMITHFIELD	Flat Rate \$180	\$180.00
BRISTOL	Flat Rate \$190.00	\$190.00
SMITHFIELD	Flat Rate \$180.00 plus \$10 for Industrial Pretreatment Program	\$190.00
WARWICK	\$45.42 Plus \$1.91/hcf For 85% of Water Usage	\$203.85
BARRINGTON	\$2.15/hcf	\$209.84
BURRILLVILLE	Flat Rate \$222.00	\$222.00
CRANSTON	Flat Rate \$245.00	\$245.00
WEST WARWICK	\$73.27, Plus \$2.44/hcf For 80% of Water Usage	\$263.76
MIDDLETOWN	\$3.22/hcf	\$314.27
NARRAGANSETT	Flat Rate \$345.00 Plus \$2.75/hcf for 101-200 hcf; \$3.25/hcf for 201-300 hcf; Over 301 hcf - \$2.75/hcf	\$345.00
JAMESTOWN	\$3.57/hcf	\$348.43
NEWPORT	\$3.68/hcf	\$359.17
WARREN	Ad-Valorem Taxes	N/A
<b>AVERAGE</b>	<b>EXISTING RATE:</b>	<b>\$211.18</b>

\*Rates include transportation and treatment costs only. Additional fees associated with the operation and maintenance of all municipally-owned collection sewer lines are borne by the users through local taxes.

A survey shown below compares annual residential sewer charges for major U.S. Cities conducted by the Massachusetts Water Resource Authority (MWRA) in 1998 showed that Providence ranked 3<sup>rd</sup> lowest in the country.

### Annual Residential Sewer Charges for Major U.S. Cities



Source: 1998 MWRA Water & Sewer Retail Rate Survey

# **Wastewater Treatment Facility Improvements**

**WASTEWATER  
TREATMENT FACILITY PROJECTS  
...A LISTING**

The following is a listing of the 12 Wastewater Treatment Facility Projects which  
have been included in the Capital Improvement Program.  
An explanation and cost breakdown of each of these projects  
is included in this section. The total costs of these  
projects during this five year period is  
\$69,784,000

<b>PROPOSED PROJECT</b>	<b>2002-2006</b>
CONTRACT 102:FPWWTF DRY WEATHER AND CSO CHLORINATION/DECHLORINATION SYSTEM	\$ - *
CONTRACT 103: SHORT TERM SOLIDS HANDLING IMPROVEMENTS	\$ 633,000
CONTRACT 104: SEPTAGE RECEIVING FACILITIES	\$ 40,000
CONTRACT 105: FPWWTF STORAGE BUILDING AND MISCELLANEOUS CSO AND OTHER IMPR.	\$ - *
CONTRACT 109: FIELD'S POINT PLAN AMENDMENT	\$ 11,477,000
CONTRACT 807: BPWWTF IMPROVEMENTS	\$ 57,534,000
CONTRACT 807CD: BPWWTF IMPROVEMENTS - DECHLORINATION FACILITIES	\$ -
SITE SPECIFIC CRITERIA	\$ 50,000
FIELD'S POINT: ROYCE SLUDGE ANALYZERS FOR 9 CLARIFIERS	\$ - *
FIELD'S POINT: REPLACEMENT OF GRAVITY THICKENER CATWALKS	\$ - *
FIELD'S POINT: PAINTING AND REPLACEMENT BUCKET FOR ASH CRANE	\$ - *
FIELD'S POINT: REPLACEMENT OF DUMPSTERS	\$ 50,000
SUBTOTAL	\$ 69,784,000

\*project costs through FY 2001 only.

**PROJECT DESCRIPTION**

**CONTRACT 102:**

**FPWWTF DRY WEATHER AND CSO  
 CHLORINATION/  
 DECHLORINATION SYSTEM**

This design and construction project implemented the recommendation for the Field's Point portion of the Facilities Plan Amendment for disinfection alternatives at the Field's Point and Bucklin Point WWTF's. At Field's Point it was recommended that sodium hypochlorite be used for disinfection and sodium bisulfite for dechlorination. The recommendation for the Bucklin Point WWTF will be implemented separately under Contract 807 (Bucklin Point WWTF Improvements). Substantial completion was declared on March 1, 1999.

**PROJECT FINANCING & EXPENDITURES  
 (Cash Flow Basis in Thousand \$)**

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS	3,653	160						0		3,813
SRF	290							0		290
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>3,943</b>	<b>160</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,103</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	Completed as part of 102P	\$253
DESIGN	From 3/96 to 11/96 (9 months)	\$290
CONSTRUCTION	From 7/97 to 3/99 (20 months)	\$3,560
<b>TOTAL</b>		<b>\$4,103</b>

**CONTRACT 103:**

**SHORT TERM SOLIDS HANDLING  
 IMPROVEMENTS**

**PROJECT DESCRIPTION**

Design of proposed dewatering and incineration improvements is complete however, the construction of the two phase project to upgrade Field's Point's facilities may not be implemented. The NBC has successfully negotiated an agreement with the Rhode Island Resource Recovery Corporation for reuse of Field's Point and Bucklin Point biosolids. The agreement proposes that liquid sludge from both facilities will be sent for processing at a new regional facility located on Field's Point Drive in Providence. Once RIRRC's processing facility is constructed and operational, the NBC will implement its original plan of demolition of the existing Filter Building, Interim Solids Handling Building and abandoned incinerator. In addition, structural problems with the brickwork on the existing incinerator building have recently been investigated and safety concerns have warranted immediate repair work to this building. Future plans include demolition of this damaged portion of the building and construction of a new wall on the south side of the building to enclose the existing incinerator. The existing incinerator will be maintained as a back-up means of sludge disposal if the situation in the future necessitates an alternate means of processing.

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF	1,391	113		633				633		2,137
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>1,391</b>	<b>113</b>	<b>0</b>	<b>633</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>633</b>	<b>0</b>	<b>2,137</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 2/96 to 7/97 (18 months)	\$239
DESIGN	From 10/97 to 3/01 (41 months)	\$1,233
CONSTRUCTION	From 12/00 to 5/04 (40 months)	\$665
<b>TOTAL</b>		<b>\$2,137</b>

\* Costs could change if the agreement with RIRRC is not implemented for any reason.

**PROJECT DESCRIPTION**

**CONTRACT 104:**  
  
**SEPTAGE RECEIVING FACILITY**

The facilities planning study and marketing survey for septage receiving concluded that there are sufficient septage receiving facilities within the State of Rhode Island to handle the septage generated. However, certain aspects of the Lincoln Septage Receiving Facility need upgrading to address the operational inefficiencies. The identified areas of need are: more efficient method of grit removal; odor control to meet existing and additional needs resulting from the new grit removal system; construction of bathroom and sampling areas, and an evaluation of existing HVAC system and capacities.

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS	144							0		144
BAY BONDS								0		0
SRF	130	1,349	40					40		1,519
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>274</b>	<b>1,349</b>	<b>40</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>0</b>	<b>1,663</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 3/95 to 2/97 (24 months)	\$97
DESIGN	From 4/97 to 7/99 (27 months)	\$116
CONSTRUCTION	From 3/00 to 3/01 (12 months)	\$1,450
<b>TOTAL</b>		<b>\$1,663</b>

**PROJECT DESCRIPTION**

**CONTRACT 105:**

**FPWWTF STORAGE BUILDING  
AND MISCELLANEOUS CSO AND  
OTHER IMPROVEMENTS**

This design and construction project will meet the storage needs at the FPWWTF and other necessary improvements. The facilities plan amendment recommends the construction of a new building to the southeast of the grit facilities. This building provides one location to store archived files, maintenance equipment and supplies. Space within the building is allocated to provide indoor parking for the scum truck during the winter months. Other improvements made at the FPWWTF include replacement of return activated sludge pipe support brackets, filling in of subterranean channels north of aeration tanks, installation of security cameras and improvements to the CSO wet weather facilities. This Project has been declared substantial complete.

**PROJECT FINANCING & EXPENDITURES**  
(Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF	2,445	75						0		2,520
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>2,445</b>	<b>75</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,520</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	Completed as part of 101D	
DESIGN	Completed as part of 101C	
CONSTRUCTION	From 4/98 to 12/99 (20 months)	<b>\$2,520</b>
<b>TOTAL</b>		<b>\$2,520</b>

**PROJECT DESCRIPTION**

**CONTRACT 109:**

**FIELD'S POINT WWTF FACILITY  
 PLAN AMENDMENT FOR  
 NITROGEN REMOVAL FACILITIES  
 AND OTHER IMPROVEMENTS**

It is anticipated that future revisions to the Field's Point Wastewater Treatment Facility permit will require the attainment of new effluent discharge standards for nitrogen and ammonia. The facilities plan amendment will determine how to achieve these standards and also addresses other miscellaneous improvements for odor control and for the operation of the grit collection facilities.

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF		425	1,059	4,775	4,775	868		11,477		11,902
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>0</b>	<b>425</b>	<b>1,059</b>	<b>4,775</b>	<b>4,775</b>	<b>868</b>	<b>0</b>	<b>11,477</b>	<b>0</b>	<b>11,902</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 11/00 to 7/01 (8 months)	\$503
DESIGN	From 10/01 to 6/02 (8 months)	\$981
CONSTRUCTION	From 8/02 to 7/04 (24 months)	\$10,418
<b>TOTAL</b>		<b>\$11,902</b>

**PROJECT DESCRIPTION**

**CONTRACT 807:**

**BUCKLIN POINT WASTEWATER  
TREATMENT FACILITY  
IMPROVEMENTS PHASE II**

A Facilities Plan Amendment (FPA) was prepared to evaluate improvements needed at the Bucklin Point WWTF to provide wet weather capacity of 116 MGD during storms and secondary capacity of 46 MGD over sustained periods of time. Improvements currently proposed in design are: new influent pumping station, new screening and grit handling facilities, new dry weather primary settling tanks, conversion of the existing primary tanks to wet weather treatment, conversion to a fine bubble aeration system, new UV disinfection facilities, new effluent pumping station for dry weather flows, new plant instrumentation and control system.

**PROJECT FINANCING & EXPENDITURES  
(Cash Flow Basis in Thousand \$)**

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS	1,128							0		1,128
SRF	2,631	599	11,736	15,266	15,266	15,266		57,534	3,530	64,294
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>3,759</b>	<b>599</b>	<b>11,736</b>	<b>15,266</b>	<b>15,266</b>	<b>15,266</b>	<b>0</b>	<b>57,534</b>	<b>3,530</b>	<b>65,422</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 12/95 to 10/98 (34 months)	\$495
DESIGN	From 2/98 to 3/01 (37 months)	\$3,864
CONSTRUCTION	From 10/01 to 11/05 (48 months)	\$61,063
<b>TOTAL</b>		<b>\$65,422</b>

**PROJECT DESCRIPTION**

CONTRACT 807CD:

**BPWWTF IMPROVEMENTS  
 DECHLORINATION FACILITY**

The dechlorination facility provided by this project was part of the overall Bucklin Point Improvements, but has been placed into a separate project for construction to expedite the completion in accordance with Compliance Order RIO-052, which requires that the chlorine residual be removed from the Bucklin Point WWTF effluent within one year of RIDEM approval of the dechlorination design plans and specifications. The cost projections below are for the construction phase only as the planning and design phases of this project are included in the Bucklin Point Improvement project. This project has been declared substantially complete.

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS	955	57						0		1,012
SRF								0		0
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>955</b>	<b>57</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,012</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 12/95 to 11/97 (24 months)	
DESIGN	From 11/97 to 7/98 (12 months)	
CONSTRUCTION	From 7/98 to 7/99 (12 months)	<b>\$1,012</b>
<b>TOTAL</b>		<b>\$1,012</b>

**PROJECT DESCRIPTION**

EMDA:

This study is required by RIDEM as part of the Field's Point Consent Agreement (RIA-029). NBC is required to complete the study by late 2001. Sampling will be completed once during each season to 1). Characterize the level of dissolved trace metals in the receiving waters of the Field's Point and Bucklin Point WWTF and 2). Determine a metals translator. NBC will conduct the sampling. The Analysis of the samples will be conducted by NBC staff as well as an outside contractor (for parameters where NBC can not reach necessary detection limits).

**SITE SPECIFIC CRITERIA**

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF		200	50					50		250
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>0</b>	<b>200</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>0</b>	<b>250</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
STUDY	From 7/00 to 6/01 (12 Months)	\$250
<b>TOTAL</b>		<b>\$250</b>

**PROJECT DESCRIPTION**

FIELD'S POINT WWTF

Royce sludge analyzers have been installed and tested on 2 clarifier tanks at Field's Point. They are used to monitor sludge blankets in tanks and have transmitted accurate information.

ROYCE SLUDGE ANALYZERS FOR  
9 CLARIFIERS

**PROJECT FINANCING & EXPENDITURES**  
(Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF								0		0
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET		35						0		35
<b>TOTAL</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>35</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 3/00 to 4/00 (2 months)	\$2
DESIGN	From 4/00 to 6/00 (3 months)	\$2
CONSTRUCTION	From 7/00 to 9/00 (3 months)	\$31
<b>TOTAL</b>		<b>\$35</b>

**PROJECT DESCRIPTION**

FIELD'S POINT WWTF

Dumpsters at Field's Point WWTF are getting worn. This project would investigate an alternate plan to replace dumpsters with an enclosed container and an extending conveyor.

REPLACEMENT OF DUMPSTERS  
 AT ERNEST ST. PUMP STATION OR  
 CONVEYOR EXTENDED INTO  
 CONTAINER

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF								0		0
REVENUE BONDS								0		0
REP. RESERVE				50				50		50
OP. BUDGET								0		0
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>0</b>	<b>50</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 1/02 to 7/02 (6 months)	\$3
DESIGN	From 7/02 to 12/02 (6 months)	\$3
CONSTRUCTION	From 1/03 to 6/03 (6 months)	\$44
<b>TOTAL</b>		<b>\$50</b>

**PROJECT DESCRIPTION**

**FIELD'S POINT WWTF**

Replace 4 catwalks in Gravity Thickeners at Field's Point WWTF. Old catwalks are rusting and falling apart.

**REPLACEMENT OF GRAVITY THICKNER CATWALKS**

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF								0		0
REVENUE BONDS								0		0
REP. RESERVE		85						0		85
OP. BUDGET								0		0
<b>TOTAL</b>	<b>0</b>	<b>85</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>85</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 1/00 to 2/00 (2 months)	\$2
DESIGN	From 3/00 to 2/00 (2 months)	\$2
CONSTRUCTION	From 7/00 to 9/00 (3 months)	\$81
<b>TOTAL</b>		<b>\$85</b>

**PROJECT DESCRIPTION**

FIELD'S POINT WWTF

Painting is needed to protect metal from rusting on ash crane. Ernest Street Pump Station and Grit Basement paint is peeling off walls and exposing the concrete to the environment.

**PAINING OF ASH CRANE, GRIT BASEMENT AND ERNEST STREET PUMP STATION BASEMENT**

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF								0		0
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET		80						0		80
<b>TOTAL</b>	<b>0</b>	<b>80</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>80</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 8/00 to 12/00 (5 months)	\$2
DESIGN	From 1/01 to 5/01 (5 months)	\$2
CONSTRUCTION	From 5/01 to 6/01 (2 months)	\$76
<b>TOTAL</b>		<b>\$80</b>

# **Sewer System Improvements**

**SEWER SYSTEM IMPROVEMENTS  
& MAINTENANCE PROJECTS  
...A LISTING**

The following is a listing of the 9 Sewer System & Maintenance Projects which  
have been included in the Capital Improvement Program.  
An explanation and cost breakdown of each of these projects  
is included in this section. The total cost of these  
projects during this five year period is  
\$220,931,000

<b>PROPOSED PROJECT</b>	<b>2002-2006</b>
CONTRACT 302.2: CSO REASSESSMENT	\$ - *
CONTRACT 302.03: PHASE I COMBINED SEWER OVERFLOW (CSO) FACILITIES	\$ 214,848,000
CONTRACT 304.04: EVALUATION AND CLEANING OF CSO INTERCEPTORS	\$ 440,000
CONTRACT 304.2C: BRANCH AVENUE INTERCEPTOR REHABILITATION	\$ -
CONTRACT 304.03: SAYLESVILLE PS FORCE MAIN	\$ -
CONTRACT 305: CSO 2B HEADWALL IMPROVEMENTS	\$ - *
CONTRACT 504: IMPROVEMENTS TO NBC-OWNED INTERCEPTORS IN JOHNSTON	\$ - *
CONTRACT 704: INVESTIGATION AND REHAB. OF WASHINGTON HWY AND OMEGA PUMP STS	\$ 4,227,000
CONTRACT 903: GEOGRAPHIC INFORMATION SYSTEM IMPLEMENTATION	\$ 1,416,000
SUBTOTAL	\$ 220,931,000

\*project costs through FY 2001 only.

**PROJECT DESCRIPTION**

CONTRACT 302.2:

COMPRHENSIVE COMBINED  
 SEWER OVERFLOW (CSO)  
 PROGRAM

REASSESSMENT

Because of the rate impact that the CSO program will have on NBC users and changes that have occurred in the national CSO policy since the 1994 approval of the CSO Abatement Plan, the Commission convened a stakeholders group in early 1996 to review the proposed plan. This reassessment has resulted in a modified CSO control plan that is approximately \$170 million less than the originally proposed plan in 1993. The stakeholders' group also recommended that the commission investigate revising its rate structure to include a stormwater user fee and investigate alternatives to prevent stormwater runoff from reaching the combined sewers. These are the only tasks that remain to be completed under this contract.

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS	1,655	5						0		1,660
SRF								0		0
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>1,655</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,660</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 1/96 to 12/99 (48 months)	\$1,660
<b>TOTAL</b>		<b>\$1,660</b>

**PROJECT DESCRIPTION**

Providence, Pawtucket and Central Falls have combined sewers which overflow at approximately 70 locations during wet weather. This Combined Sewer Overflow (CSO) Program will mitigate the impact of these overflows through the construction of wet weather control facilities. The proposed program consists of two tunnels, the Main Spine tunnel (16,000 ft. long) and the Pawtucket tunnel (16,000 ft. long), two tunnel pump stations, five CSO interceptors and twelve sewer separation projects at a projected cost of \$389 million (ENR CCI = 5500; August 1995). Contract 302.03 includes design and construction of the Phase I facilities (the main spine tunnel and pump station) and is expected to be completed in about seven years. Upon completion of the construction of Phase I the proposed Phase II facilities will be reassessed to determine if any changes should be made to the plan. Also included in this project is the CSO flow monitoring which was listed as a separate project in the CIP in previous years. [The \$11 million cost to upgrade the Bucklin Point WWTF to handle CSO flows to the plant is included under contract 807.] Also included in the project cost is a demonstration CSO floatables control facility which is to be built in FY '01.

CONTRACT 302.03:

**PHASE I COMBINED SEWER OVERFLOW (CSO) FACILITIES**

**PROJECT FINANCING & EXPENDITURES**  
(Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS	11,500	11,370	9,161	0				9,161		32,031
SRF	12,600		15,577	49,355	50,977	45,462	40,316	205,687	7,971	226,258
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>24,100</b>	<b>11,370</b>	<b>28,738</b>	<b>49,355</b>	<b>50,977</b>	<b>45,462</b>	<b>40,316</b>	<b>214,848</b>	<b>7,971</b>	<b>258,289</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 1/92 to 7/98 (78 months)	\$6,600
DESIGN	From 7/93 to 6/01 (96 months)	\$21,500
CONSTRUCTION	From 7/01 to 12/07 (66 months)	\$230,189
<b>TOTAL</b>		<b>\$258,289</b>

\*Please note: Costs have been updated to the mid point of construction of Phase I (2004) plus the addition of any soft costs.

**PROJECT DESCRIPTION**

CONTRACT 304.03:

**SAYLESVILLE PUMP STATION  
 FORCE MAIN REPAIR**

The facilities plan completed for the Saylesville Pump station concluded that the force main would need to be addressed during the useful life of the improved station. A leak was discovered in this main which was subsequently repaired. A study of the force main condition concluded that the cost effective means of addressing the force main condition is to replace the force main. The force main replacement will involve installation of approximately 3,000 feet of pipe.

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF	233	664						0		897
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>233</b>	<b>664</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>897</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 5/99 to 11/99 (7 months)	\$61
DESIGN	From 1/00 to 6/00 (5 months)	\$172
CONSTRUCTION	From 12/00 to 5/01 (6 months)	\$664
<b>TOTAL</b>		<b>\$897</b>

**PROJECT DESCRIPTION**

CONTRACT 304.04:

**INSPECTION AND EVALUATION  
OF CSO INTERCEPTORS**

This project involves TV inspection of all interceptor sewers in the Commission's service area over the next ten years to determine their condition and to develop solutions to correct any problems that may be identified. Interceptors to be inspected in the first year are: (1) the Blackstone Valley Interceptor, (2) Elmwood Interceptor, (3) Woonasquatucket Interceptor, (4) Moshassuck Valley Interceptor (Providence and North Providence).

**PROJECT FINANCING & EXPENDITURES**  
(Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT	90							0		90
BVDC BONDS								0		0
BAY BONDS	20							0		20
SRF		250	165	80	45	90	60	440	570	1,260
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>110</b>	<b>250</b>	<b>165</b>	<b>80</b>	<b>45</b>	<b>90</b>	<b>60</b>	<b>440</b>	<b>570</b>	<b>1,370</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PURCHASE/ INSTALLATION	From 7/97 to 7/08	\$1,370
<b>TOTAL</b>		<b>\$1,370</b>

**PROJECT DESCRIPTION**

CONTRACT 304.2C:

**BRANCH AVENUE INTERCEPTOR  
 REHABILITATION**

During a July 1997 inspection program, it was discovered that a partial failure of our 48 inch brick interceptor in the vicinity of Silver Spring Street on Branch Avenue had occurred. This contract rehabilitated the interceptor as well as line approximately 2700 feet of the 48 inch interceptor in the same area. This project has been declared substantially complete.

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS	3,629	223						0		3,852
SRF								0		0
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>3,629</b>	<b>223</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,852</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
DESIGN	From 11/97 to 7/98 (9 months)	\$240
CONSTRUCTION	From 9/98 to 9/99 (12 months)	\$3,612
<b>TOTAL</b>		<b>\$3,852</b>

**PROJECT DESCRIPTION**

**CONTRACT 305:**  
  
**CSO 2B HEADWALL  
 IMPROVEMENTS**

This project included rebuilding the headwalls for seven (7) outfall pipes along the Wocnasquatucket River. This project was declared substantially complete on May 6, 1999.

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS	1,349	1						0		1,350
SRF								0		0
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>1,349</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,350</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
CONSTRUCTION	From 4/98 to 5/99 (14 months)	\$1,350
<b>TOTAL</b>		<b>\$1,350</b>

**PROJECT DESCRIPTION**

**CONTRACT 504:**  
  
**IMPROVEMENTS TO NBC OWNED  
 INTERCEPTORS IN JOHNSTON**  
  
**NORTH END**

In order to correct capacity problems in the northern portion of the Town of Johnston, the NBC constructed improvements to the interceptor system. These improvements provide sufficient capacity in NBC pipes for future growth in this portion of the Town. This project was declared substantially complete in May 1999.

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS	120							0		120
SRF	5,395	145						0		5,540
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>5,515</b>	<b>145</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5,660</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	Planning included as part of SSES	
DESIGN	From 11/93 to 3/96 (30 months)	\$865
CONSTRUCTION	From 4/97 to 5/99 (25 months)	\$4,795
<b>TOTAL</b>		<b>\$5,660</b>

**PROJECT DESCRIPTION**

**CONTRACT 704P:**

**REHABILITATION OF THE  
WASHINGTON HIGHWAY AND  
OMEGA PUMPING STATIONS**

The Washington Highway and Omega Pump Stations in the Bucklin Point service area are older stations nearing the end of their design life. A study of these stations is currently underway. It is anticipated that the Washington Highway Pump Station will need to be replaced and that upgrades will be needed at the Omega Pump Station.

**PROJECT FINANCING & EXPENDITURES**  
(Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '06	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF	91	168	335	1,946	1,946			4,227		4,486
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>91</b>	<b>168</b>	<b>335</b>	<b>1,946</b>	<b>1,946</b>	<b>0</b>	<b>0</b>	<b>4,227</b>	<b>0</b>	<b>4,486</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 2/00 to 12/00 (10 months)	\$91
DESIGN	From 3/01 to 2/02 (12 months)	\$503
CONSTRUCTION	From 7/03 to 6/05 (24 months)	\$3,892
<b>TOTAL</b>		<b>\$4,486</b>

**PROJECT DESCRIPTION**

CONTRACT 903:

The NBC has completed a study to implement a GIS program. This GIS would allow the NBC to geographically relate and maintain databases on its sewer system and other facilities. The project includes data conversion, data development, and acquisition of additional hardware and software. The implementation of GIS includes potential functions for the Collections, Engineering, Pretreatment, and Customer Service sections.

**GEOGRAPHIC INFORMATION SYSTEM (GIS) IMPLEMENTATION**

**PROJECT FINANCING & EXPENDITURES**  
(Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF	322	220	354	354	354	354		1,416		1,958
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET								0		0
<b>TOTAL</b>	<b>322</b>	<b>220</b>	<b>354</b>	<b>354</b>	<b>354</b>	<b>354</b>	<b>0</b>	<b>1,416</b>	<b>0</b>	<b>1,958</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 10/95 to 5/96 (8 months)	\$89
IMPLEMENTATION	From 3/00 to 6/05 (63 months)	\$1,869
<b>TOTAL</b>		<b>\$1,958</b>

# **Buildings & Grounds Improvements**

**BUILDINGS  
AND GROUNDS PROJECTS  
...A LISTING**

The following is a listing of the 6 Buildings and Grounds Projects which  
have been included in the Capital Improvement Program.  
An explanation and cost breakdown of each of these projects  
is included in this section. The total cost of these  
projects during this five year period is  
\$2,952,000

<u>PROPOSED PROJECT</u>	<u>2002-2006</u>
CONTRACT 904: NBC CORPORATE OFFICE BUILDING	\$ 2,000,000
LABORATORY EQUIPMENT: MERCURY ANALYZER	\$ 27,000
LABORATORY EQUIPMENT: ICP/MS	\$ 200,000
LABORATORY: ION CHROMATOGRAPH	\$ 35,000
RATORY: CYNAIDE FLOW INJECTION BY LIGIAND EXCHANGE	\$ 35,000
VEHICLE REPLACEMENTS	\$ 655,000
	<hr/>
	SUBTOTAL \$ 2,952,000

**PROJECT DESCRIPTION**

CONTRACT 904:

NBC - CORPORATE OFFICE  
 BUILDING

The purpose of this project is to centralize NBC's main Administration Functions, Laboratory Operation, ICM, Preatreatment, and Environmental Monitoring Data Analysis sections to one location. The existing office building will house the Administrative functions. The existing lab building will be renovated to house the Fields and Bucklin Point labs. A new building will be built for IMC. Preatreatment and EMDA will be housed in renovated space in the Operations Building.

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF		4,500	2,000	0				2,000		6,500
REVENUE BONDS								0		0
REP. RESERVE								0		0
OP. BUDGET	1,800							0		1,800
<b>TOTAL</b>	<b>1,800</b>	<b>4,500</b>	<b>2,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,000</b>	<b>0</b>	<b>8,300</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PLANNING	From 9/98 to 6/99 (9 months)	\$1,800
DESIGN	From 6/00 to 10/00 (4 months)	\$250
CONSTRUCTION	From 10/00 to 10/01 (12 months)	\$6,250
<b>TOTAL</b>		<b>\$8,300</b>

**PROJECT DESCRIPTION**

LABCRATORY:

A replacement unit which will produce and meet EPS's new proposed Low Detection Limits; as in methods 1631 and 247.7. It will only be purchased if a "Clean Room" is available.

MERCURY ANALYZER

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF								0		0
REVENUE BONDS								0		0
REP. RESERVE			27					27		27
OP. BUDGET								0		0
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>27</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PURCHASE	FY 2002	\$27
<b>TOTAL</b>		<b>\$27</b>

**PROJECT DESCRIPTION**

**LABORATORY:**

**INDUCTIVELY COUPLED  
 PLASMA MASS  
 SPECTROPHOTOMET (ICP/MS)**

Because of the continual lowering of detection limits by EPA for metal analyses, an instrument must be used that is highly sensitive to these metals. What is being suggested by the EPA is the ICP/MS. This unit has the detection power, sensitivity, and elemental coverage to comply with more stringent EPA regulations. It will only be purchased if a "Clean Room" is available.

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF								0		0
REVENUE BONDS								0		0
REP. RESERVE			200					200		200
OP. BUDGET								0		0
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>200</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>200</b>	<b>0</b>	<b>200</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PURCHASE	FY 2002	\$200
<b>TOTAL</b>		<b>\$200</b>

**PROJECT DESCRIPTION**

LABORATORY;  
 ION CHROMATOGRAPH

The ION chromatograph has better sensitivity and less matrix interference than the currently used colorimetric method for Hexavalent Chrome analyses.

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF								0		0
REVENUE BONDS								0		0
REP. RESERVE			35					35		35
OP. BUDGET								0		0
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>35</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PURCHASE	FY 2002	\$35
<b>TOTAL</b>		<b>\$35</b>

**PROJECT DESCRIPTION**

**LABORATORY:**

This new method will be required by DEM in the future for cyanide on the plant samples. It is more sensitive, and precise than the current method.

**CYANIDE FLOW INJECTION BY  
 LIGIAND EXCHANGE (OIA 1677  
 EPA METHOD)**

**PROJECT FINANCING & EXPENDITURES**  
 (Cash Flow Basis in Thousand \$)

FUNDING SOURCE	BEFORE JULY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR TOTAL	AFTER FY '06	TOTAL COSTS
GRANT								0		0
BVDC BONDS								0		0
BAY BONDS								0		0
SRF								0		0
REVENUE BONDS								0		0
REP. RESERVE			35					35		35
OP. BUDGET								0		0
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>35</b>

**PROJECT COST BY PHASE**

PHASE	PROJECT SCHEDULE	COST BY PHASE
PURCHASE	FY 2002	\$35
<b>TOTAL</b>		<b>\$35</b>

## VEHICLE REPLACEMENT SCHEDULE\*

( In Thousand \$'s)

VEHICLE DESCRIPTION	FY 01	FY '02	FY '03	FY '04	FY '05	FY '06	5 YEAR	TOTAL
							TOTAL	COSTS
1984 Sewer Bucket Cleaning Machine		60					60	60
1984 Digger Truck (Unit 12)	80						0	80
1980 Mack 6-year dump (Unit 7)				70			70	70
10 Wheeler (Unit 10)			80				80	80
1989 Chevy C-30 (Unit 6)	35						0	35
Video Inspection (TV) Utility Truck				150			150	150
1990 Station Wagon		30					30	30
1989 Van (Unit 30)			30				30	30
1991 Van (Unit 31)				30			30	30
1995 3 Yard Dump Truck (Unit 18)					40		40	40
1993 Utility (Unit 9)				35			35	35
1996 Flusher (Unit 8)						100	100	100
1996 Pickup (unit 15)						30	30	30
<b>Total</b>	<b>\$115</b>	<b>\$90</b>	<b>\$110</b>	<b>\$285</b>	<b>\$40</b>	<b>\$130</b>	<b>\$655</b>	<b>\$ 770</b>

\* All Items are to be funded from Replacement Reserve

# **Section III**

## *Appendix*

## ***NARRAGANSETT BAY COMMISSION FACILITIES***

### ***NBC Field's Point Service Area Facilities***

The FPWWTF can provide secondary treatment to average dry weather flows of 65 million gallons per day (mgd), sustained wet weather flows of 77 mgd, and peak hourly flows of 91 mgd. Wet weather facilities provide primary treatment and disinfection for stormwater flows of up to 123 mgd beyond the primary and secondary process systems' capacity. Total treatment capacity at the Field's Point facility is 200 mgd.

The Field's Point facility uses an activated sludge process for secondary treatment, incorporating grit removal, primary sedimentation, secondary aeration, final clarification and chlorination for disinfection in the overall treatment process. Beginning in early 1999 dechlorination facilities were added. Final effluent discharge is to the Providence River. The majority of the flow is pumped to the treatment facility by the Ernest Street Pumping Station (ESPS).

Sludge is processed through gravity thickeners and then to two 2-meter Parkson Magnum 3000 belt filter presses which went on-line in mid June, 1988. Sludge is then conveyed to a Nichols nine-hearth sludge incinerator (16 feet diameter, 10 wet ton/hour maximum capacity). The resulting ash from the incinerator is conveyed in a wet state to ash settling tanks. The settled ash is then landfilled.

The Field's Point service area operates and maintains three outlying pump stations. The Washington Park and Reservoir Ave. pump stations located within the City of Providence have recently completed construction improvements. There is one additional pump station on Central Avenue in Johnston, which came on-line in 1987.

The Field's Point service area has several flow metering stations that are used to measure flows from the various service areas. Most of these units are telemetered to the IMC Office. Other meter locations are being converted to this technology

In addition, in the Field's Point service area, NBC owns and is responsible for the maintenance and correction of 57 Combined Sewer Overflows (CSO's), 32 tidegates and 68 miles of interceptors.

## ***NBC Bucklin Point Service Area Facilities***

The NBC assumed ownership of the Bucklin Point Wastewater Treatment Facility (BPWWTF) in 1992 from the Blackstone Valley District Commission (BVDC) which was established by the Rhode Island General Assembly in 1947 to plan, design, construct and operate and maintain facilities for the abatement of pollution generated from wastewater. Rhode Island voters also granted BVDC the ability to use state issued (but BVDC retired) bonds. The Bucklin Point wastewater treatment plant, providing primary treatment, began operating in 1952. The plant was upgraded to secondary treatment in 1973.

The BPWWTF can provide maximum secondary treatment to 46 mgd and primary treatment for flows up to 60 mgd.

Wastewater treated at the Bucklin Point Facility first flows through mechanically cleaned screens, grit chambers, a pre-aeration channel, two primary settling tanks and then flows into aeration basins where it receives secondary treatment through the use of activated sludge technology. The activated sludge and the wastewater then flow to six final settling tanks. The effluent from the final settling tanks flows to the chlorine contact tank for disinfection. The treated effluent is discharged to the Seekonk River. In late 1999 dechlorination facilities will be on line.

Waste sludge from the activated sludge process is pumped to the flotation thickener where it is thickened with the aid of chemicals and is then pumped to one of the digesters. The sludge is anaerobically digested and methane gas and carbon dioxide are produced as part of this process. The methane is used to heat the digesters and plant buildings. In accordance with Federal Regulations, sludge disposal at the landfill has ceased and the landfill is closed. NETCO presently disposes of the sludge under contract to NBC.

NBC also owns and operates three pump stations within the service area, the Omega (East Providence) Pump Station, the Saylesville (Lincoln) Pump Station and the Washington Highway Pump Station in Lincoln.

NBC is also responsible for five interceptors in the BPWWTF service area: the Blackstone Valley, Washington Highway, Moshassuck Valley, Abbott Run and East Providence. The total length of the interceptors is approximately 28 miles.

In addition, legislation passed by the Rhode Island General Assembly in 1989 assigned responsibility for the 27 CSO's in Pawtucket and Central Falls to BVDC in addition to the BVDC's North Diversion Structure located at Bucklin Point.

PUBLIC REVIEW PROCESS  
WITH  
PUBLIC COMMENTS  
AND RESPONSES

In August 2000 the Draft CIP was distributed to the Board of Commissioners.

On September 20, 2000 the CIP was presented to the Citizen's Advisory Committee.

A display advertisement for a public hearing on the Capital Improvement Program (CIP) was published in the Providence Journal Bulletin on August 21, 2000 (see following page). The CIP Public Hearing was held on September 21, 2000 at the Narragansett Bay Commission Corporate Office, 235 Promenade Street, Suite 500. At the hearing it was noted that any comments could be heard following the presentation. One Comment was received at the September 21, 2000 Public Hearing. The Commission has prepared a written response to that comment and is included in the following pages.

On September 21, 2000 the Citizen's Advisory Committee commented on the Draft CIP.

On October 23, 2000 the Final Draft CIP was adopted by the Board of Commissioners.

# Public Hearing

## The Narragansett Bay Commission

invites the public to attend a Public Hearing on its

### Capital Improvement Program for Fiscal Years 2002 - 2006

on

Thursday, September 21, 2000 • 7:00 p.m.

at

The Narragansett Bay Commission Office\*  
235 Promenade Street, Suite 500, Providence, RI

At the hearing, the NBC will give the public an overview of its Capital Improvement Program (CIP) for fiscal years 2002-2006. The CIP is a planning document identifying over \$293 million in projects, repairs and purchases anticipated over the next five years. Testimony will be taken from the public following the presentation. For more information, contact Bill Bowers at (401) 222-6680/TDD (401) 222-6680 or by email at [BBowers@narrabay.com](mailto:BBowers@narrabay.com).

\*The meeting site is accessible. Individuals requesting interpreter services must notify the NBC at 222-6680/TDD 222-6680 72 hours in advance of the meeting date.

Vincent Mesolella, *Chairman*

Paul Pinault, P.E., *Executive Director*



**CITIZEN'S ADVISORY COMMITTEE  
TO THE  
NARRAGANSETT BAY COMMISSION**

September 21, 2000

Mr. Paul Pinault, Executive Director  
Narragansett Bay Commission  
459 Promenade Street  
Providence, RI 02908

RE: CAPITAL IMPROVEMENT PROGRAM (CIP) FY 2002-2006 FOR THE NARRAGANSETT BAY COMMISSION

The Citizen's Advisory Committee (CAC) to the Narragansett Bay Commission has authorized submitting a Statement commending the NBC Staff on their draft of the Capital Improvement Program for the FY-2002-2006 for the Narragansett Bay Commission.

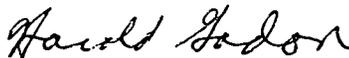
The Citizen's Advisory Committee did receive draft copies and a presentation of the draft by the NBC staff to enable us to draw our conclusions. In so doing we agreed that the CIP draft was a detailed presentation that covered all projected capital projects in a clear manner.

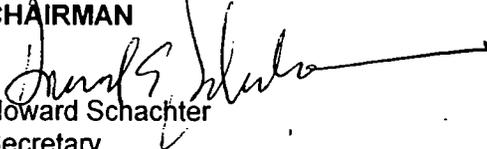
We approve of the Capital Improvement Program expenditures realizing the effect of State and Federal mandates. The CSO project has now increased to 73% of the total cost from 68% last year. We fully support the executive director in his relentless efforts to obtain state and federal financial aid for this huge project.

We are very concerned with the presently proposed 34% rate increase to fund this budget because of the effect it can have on businesses involved and on those citizens living on fixed and limited incomes. We trust that the director will succeed in obtaining financial assistance so as to effectively lower the final rate increase.

We are confident the NBC Board of Commissioners will agree with our assessment of this draft

Respectfully Submitted  
On Behalf of the  
CITIZEN'S ADVISORY COMMITTEE

  
HAROLD GADON  
CHAIRMAN

  
Howard Schachter  
Secretary



NARRAGANSETT BAY COMMISSION

EXISTING DEBT SERVICE FOR CAPITAL PROJECTS (BASED ON ACTUAL PAYMENT SCHEDULES)

			FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
\$3M 1988 Bonds -Ref. \$270K	State/G.O.'s	Principal	15,000	15,000	0	0	0
		Interest	2,115	1,065	0	0	0
		Subtotal	17,115	16,065	0	0	0
\$14M - Ref. \$967,781	State/G.O.'s	Principal	163,916	163,916	100,916	100,916	0
		Interest	32,398	22,563	12,564	6,307	0
		Subtotal	196,313	186,479	113,480	107,223	0
\$14M - 1997 Refunding \$134,500	State/G.O.'s	Principal	0	1,300	66,500	66,700	0
		Interest	6,728	6,694	4,998	1,668	0
		Subtotal	6,728	7,994	71,498	68,368	0
\$6M GOB Refunded \$2.805M	State/G.O.'s	Principal	259,092	259,092	160,092	160,092	457,092
		Interest	108,418	92,873	77,068	67,142	57,137
		Subtotal	367,510	351,965	237,160	227,234	514,229
\$6M GOB 1997 Ref. \$802K	State/G.O.'s	Principal	0	2,100	104,600	104,600	297,300
		Interest	40,366	40,319	37,526	32,165	22,118
		Subtotal	40,366	42,419	142,126	136,765	319,418
\$21.55 M GOB 1991B - 1997 Ref. \$560K	State/G.O.'s	Principal	339,400	4,200	3,200	1,900	1,600
		Interest	20,351	10,923	10,744	10,613	10,525
		Subtotal	359,751	15,123	13,944	12,513	12,125
\$21.55 M GOB 1991B - 1996 Ref. \$2.040M	State/G.O.'s	Principal	10,085	287,659	286,688	288,285	289,570
		Interest	110,832	104,467	89,753	72,504	55,169
		Subtotal	120,917	392,126	376,441	360,789	344,739
\$5.5M GOB - Ref. \$3.5M 1980 Series	State/G.O.'s	Principal	175,000	175,000	175,000	175,000	175,000
		Interest	91,700	78,925	65,975	52,850	39,725
		Subtotal	266,700	253,925	240,975	227,850	214,725

NARRAGANSETT BAY COMMISSION

			FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
CEDE \$7.731M (1992A BVDC)	State/G.O.'s	Principal	713,975	713,975	440,975	440,975	1,259,459
		Interest	298,725	255,886	212,334	184,993	157,432
		Subtotal	1,012,700	969,861	653,309	625,968	1,416,891
CEDE \$7.731M Ref. 1997 \$2.211M (1992A BVDC)	State/G.O.'s	Principal	0	5,700	288,600	288,600	819,300
		Interest	111,278	111,150	103,446	88,655	60,958
		Subtotal	111,278	116,850	392,046	377,255	880,258
\$3.080M BVDC 1993 Ref. (\$4.85M)	State/G.O.'s	Principal	435,000	430,000	280,000	270,000	0
		Interest	74,570	53,690	32,620	18,900	0
		Subtotal	509,570	483,690	312,620	288,900	0
\$900,000 Part A 1997 Ref. (\$103K) (BVDC)	State/G.O.'s	Principal	62,900	800	600	400	300
		Interest	3,772	2,025	1,991	1,965	1,948
		Subtotal	66,672	2,825	2,591	2,365	2,248
\$900,000 Part B 1996 Ref. (\$377K) (BVDC)	State/G.O.'s	Principal	1,864	53,156	52,977	53,272	53,509
		Interest	20,517	19,341	16,622	13,434	10,231
		Subtotal	22,381	72,497	69,599	66,706	63,740
Fleet \$100,000 (BVDC)	State/G.O.'s	Principal	5,000	5,000	5,000	5,000	0
		Interest	1,405	1,152	895	633	500
		Subtotal	6,405	6,152	5,895	5,633	500

NARRAGANSETT BAY COMMISSION

			FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Fleet \$100,000 (BVDC) Ref. (1971 Series D 9/98 Ref)	State/G.O.'s	Principal	0	0	0	0	0
		Interest	1,519	1,519	1,519	1,519	1,519
		Subtotal	1,519	1,519	1,519	1,519	1,519
Capital Appreciation Bonds (BVDC 1996)		Principal					16,751
		Interest					333,249
		Subtotal					350,000
Fleet \$3,315,000 (BVDC 1986 Series F)	State/G.O.'s	Principal	140,000	150,000	160,000	170,000	0
		Interest	55,730	48,405	40,420	31,755	27,250
		Subtotal	195,730	198,405	200,420	201,755	27,250
Fleet \$3,315,000 Ref. 9/98 (\$1.3M) (BVDC 1986 Series F)	State/G.O.'s	Principal	5,000	5,000	5,000	5,000	0
		Interest	49,316	49,128	48,935	48,738	48,638
		Subtotal	54,316	54,128	53,935	53,738	48,638
Fleet \$3,315,000 Ref. 9/98 (\$305K) (BVDC 1986 Series F)	State/G.O.'s	Principal	0	0	0	0	0
		Interest	12,288	12,288	12,288	12,288	12,288
		Subtotal	12,288	12,288	12,288	12,288	12,288
Contract 601-North Prov. \$2.647M	SRF	Principal	127,153	131,890	136,803	141,899	147,184
		Interest	60,606	55,782	50,777	45,586	40,202
		Subtotal	187,760	187,671	187,580	187,485	187,387
Contract 201-Wash. Park \$3.694M	SRF	Principal	166,017	171,886	177,961	184,252	190,765
		Interest	91,370	85,427	79,275	72,905	66,311
		Subtotal	257,387	257,313	257,236	257,157	257,076

NARRAGANSETT BAY COMMISSION

			FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Contract 401-Butler \$1.662M	SRF	Principal	76,865	79,758	82,761	85,876	89,109
		Interest	41,447	38,500	35,441	32,266	28,973
		Subtotal	118,312	118,258	118,201	118,143	118,082
Pool Financing I - \$14.781M	SRF	Principal	614,500	637,000	660,500	685,000	710,250
		Interest	429,816	406,856	383,052	358,368	332,771
		Subtotal	1,044,316	1,043,856	1,043,552	1,043,368	1,043,021
Pool Financing II - \$17.279M	SRF	Principal	721,955	747,306	773,546	800,708	828,824
		Interest	474,504	448,838	422,270	394,769	366,303
		Subtotal	1,196,459	1,196,144	1,195,816	1,195,477	1,195,127
Pool Loan Financing III - \$8.150M	SRF	Principal	283,778	304,539	315,695	327,250	339,246
		Interest	281,363	270,459	260,156	248,439	235,293
		Subtotal	565,141	574,998	575,851	575,689	574,539
Pool Loan Financing IV- \$23.955M	SRF	Principal	0	1,000	1,000	1,000	1,000
		Interest	598,693	846,073	846,038	846,002	845,967
		Subtotal	598,693	847,073	847,038	847,002	846,967
TOTALS							
		Principal	4,316,500	4,345,277	4,278,414	4,356,725	5,676,259
		Interest	3,019,825	3,064,344	2,846,705	2,644,465	2,754,503
		Grand Total Existing	7,336,325	7,409,621	7,125,118	7,001,189	8,430,762

NARRAGANSETT BAY COMMISSION

NEW BAY BOND FINANCING FOR CAPITAL PROJECTS

		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
FY 2001 NEW BAY BONDS	\$0 Principal	0	0	0	0	0
	Interest	0	0	0	0	0
	Subtotal	0	0	0	0	0
FY 2002 NEW BAY BONDS	\$0 Principal	0	0	0	0	0
	Interest	0	0	0	0	0
	Subtotal	0	0	0	0	0
FY 2003 NEW BAY BONDS	\$0 Principal	0	0	0	0	0
	Interest	0	0	0	0	0
	Subtotal	0	0	0	0	0
FY 2004 NEW BAY BONDS	\$0 Principal	0	0	0	0	0
	Interest	0	0	0	0	0
	Subtotal	0	0	0	0	0
FY 2005 NEW BAY BONDS	\$0 Principal	0	0	0	0	0
	Interest	0	0	0	0	0
	Subtotal	0	0	0	0	0
Totals						
	Principal	0	0	0	0	0
	Interest	0	0	0	0	0
	Total Bay Bonds	0	0	0	0	0

NARRAGANSETT BAY COMMISSION

NEW SRF BOND FINANCING FOR CAPITAL PROJECTS

ASSUMPTIONS: 4.0%

		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
FY 2002 NEW SRF	\$26,093,000 Principal	1,304,650	1,721,450	1,721,450	1,721,450	1,721,450
	Interest	991,534	922,676	853,818	784,960	716,102
	Subtotal	2,296,184	2,644,126	2,575,268	2,506,410	2,437,552
FY 2003 NEW SRF	\$75,812,000 Principal	0	3,790,600	3,840,050	3,840,050	3,840,050
	Interest	0	2,880,856	2,727,254	2,573,652	2,420,050
	Subtotal	0	6,671,456	6,567,304	6,413,702	6,260,100
FY 2004 NEW SRF	\$76,811,000 Principal	0	0	3,840,550	3,842,550	3,842,550
	Interest	0	0	2,918,818	2,765,116	2,611,414
	Subtotal	0	0	6,759,368	6,607,666	6,453,964
FY 2005 NEW SRF	\$64,956,000 Principal	0	0	0	3,247,800	3,102,000
	Interest	0	0	0	2,468,328	2,474,160
	Subtotal	0	0	0	5,716,128	5,576,160
FY 2006 NEW SRF	\$42,274,000 Principal	0	0	0	0	2,113,700
	Interest	0	0	0	0	1,690,960
	Subtotal	0	0	0	0	3,804,660
Totals						
Principal		1,304,650	5,512,050	9,402,050	12,651,850	14,619,750
Interest		991,534	3,803,532	6,499,890	8,592,056	9,912,686
Total New SRF		2,296,184	9,315,582	15,901,940	21,243,906	24,532,436

NARRAGANSETT BAY COMMISSION

SUMMARY OF ALL DEBT SERVICE SCHEDULES

		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
<i>EXISTING DEBT SERVICE</i>	Principal	4,316,500	4,345,277	4,278,414	4,356,725	5,676,259
	Interest	3,019,825	3,064,344	2,846,705	2,644,465	2,754,503
		<u>7,336,325</u>	<u>7,409,621</u>	<u>7,125,118</u>	<u>7,001,189</u>	<u>8,430,762</u>
<i>NEW BAY BONDS</i>	Principal	0	0	0	0	0
	Interest	0	0	0	0	0
		<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<i>NEW SRF BONDS</i>	Principal	1,304,650	5,512,050	9,402,050	12,651,850	14,619,750
	Interest	991,534	3,803,532	6,499,890	8,592,056	9,912,686
		<u>2,296,184</u>	<u>9,315,582</u>	<u>15,901,940</u>	<u>21,243,906</u>	<u>24,532,436</u>
<i>TOTAL</i>	Principal	5,621,150	9,857,327	13,680,464	17,008,575	20,296,009
	Interest	4,011,359	6,867,876	9,346,595	11,236,521	12,667,189
	Grand Total	<u>9,632,509</u>	<u>16,725,203</u>	<u>23,027,058</u>	<u>28,245,095</u>	<u>32,963,198</u>