Capital Improvement Program

FY 2019-2023

Narragansett Bay Commission

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Capital Improvement Program
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Capital Project Summary for Fiscal Years 2019-2023

(In Thousands)

Project Number	Project Name		Fiscal Years 2019-2023
Wastewater Treatment Facility Improvements			
10908	FPWWTF Blower Improvements Phase II	$	2,492
12000	BPWWTF Biogas Reuse		49
12400	New IM Facilities		6,339
13000	FPWWTF Final Clarifier Improvements		292
13200	FPWWTF New Maintenance Facilities		6,049
20000	WWTF Improvements		2,388
20100	FY 17 WWTF Improvements		112
81000	BPWWTF UV Disinfection Improvements		7,144
81400	BPWWTF Digester & Miscellaneous Improvements		8
81500	BPWWTF O&M Support Facilities		4,018
	Subtotal		28,890
Infrastructure Management			
1100000	Site Specific Study		245
1140100	River Model Development		135
1140500	NBC Energy Sustainability		9
30500	NBC Interceptor Easements Restoration, Various Locations		634
30501	NBC Interceptor Easements Restoration, BVI		17
30700	NBC System-wide Facilities Planning		337
40100	NBC Facility Electrical Improvements		109
40101	FPWWTF Facility Electrical Improvements		64
40200	NBC System-wide Inflow Reduction		318
40500	NBC System-wide RIPDES Flow Monitoring		219
	Subtotal		2,087
CSO Phase III Facilities			
30800	CSO Phase III A Facilities		100,994
	Subtotal		100,994
Interceptor Inspection, Cleaning, Restoration & Construction			
30400M	Interceptor Inspection and Cleaning		2,500
30400C	Interceptor Restoration and Construction		4,500
30421	Louisquisset Pike Interceptor Improvements		3,765
30444	Moshassuck Valley Interceptor		6,511
30457	Providence River Siphon		6,101
30463	Improvements to Interceptors FY 2017		11
30465	Field's Point Drive Interceptor Improvements		760
	Subtotal		24,148
	Total Capital Improvement Program Window	$	156,119

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Capital Improvement Program

The Capital Improvement Program

The Narragansett Bay Commission's (NBC) Capital Improvement Program (CIP) is a planning document which identifies programmed capital investments necessary to comply with current and future regulatory requirements, take advantage of technological advancements, ensure the integrity of NBC's infrastructure and achieve operational efficiencies. The projects, schedules and costs that are included in the CIP have been developed through a planning process that involves NBC's Engineering and Construction staff and also incorporates needs identified through NBC's asset management program. These capital improvements include construction of new facilities, rehabilitation and replacement of existing infrastructure as well as energy efficiency and sustainability projects. The CIP shows programmed expenditures for the current Fiscal Year (FY) 2018 as well as the following five-year period of FY 2019-2023, which is referred to in this document as the "window". Structuring the CIP this way also enables NBC's program to be easily incorporated into the capital budget of the State of Rhode Island.

Capital Improvement Program Overview

This year's CIP identifies a total of 40 projects that are either in progress, to be initiated, or to be completed during FY 2018-2023. The estimated costs for this year's CIP window are $156.1 million, with additional expenditures of $48.0 million in FY 2018 for a total of $204.1 million. The majority or 65% of the expenditures are related to the third and final phase of the Combined Sewer Overflow (CSO) Abatement Facilities. Other projects in the CIP account for the remaining 35% and reflect the continued investment in NBC's wastewater treatment and collection system infrastructure.

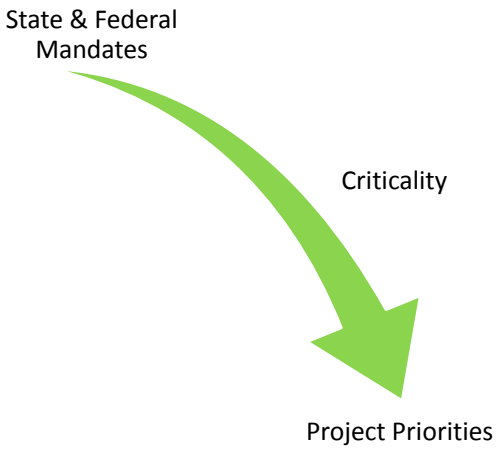
FY 2018-2023 CIP Costs
(In thousands)

Category	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2019-2023
Administrative	$ 2,009	$ 1,149	$ 824	$ 612	$ 462	$ 500	$ 3,547
Land	2,041	50	-	-	2,000	-	2,050
A/E Professional	13,919	13,178	11,230	8,690	4,478	12,021	49,597
Construction	25,832	15,454	13,042	7,289	3,092	54,773	93,651
Contingency	2,464	1,469	1,175	1,260	750	150	4,804
Other	1,746	1,596	374	220	160	120	2,470
Total	**$ 48,011**	**$ 32,897**	**$ 26,645**	**$ 18,071**	**$ 10,942**	**$ 67,564**	**$ 156,119**

The CIP document reflects all phases of a construction project, including planning and design as a single project. In addition, for planning purposes, projects that are substantially complete with only retainage and/or "punch-list" items remaining are considered complete and are not carried in the CIP summary or detailed project listing; however, these projects are discussed in the completed projects section of the CIP that begins on page 12. The CIP projects are also identified by one of four priority classifications to rank them in terms of priority. The CIP includes additional information regarding changes in the CIP from the prior year, new projects and the projected operating budget impact of each project. Lastly, information relating to the funding of the CIP as well as a discussion of the projected rate impacts associated with the CIP is provided.

Capital Improvement Program Development

NBC's comprehensive capital improvement planning process takes into consideration the project's relationship to the strategic plan, program priorities, the permitting process, project readiness, scheduling and other factors. The CIP drives NBC's long-term financing requirements, and therefore the particulars of each project are an essential component of NBC's financial plan.



NBC's Project Managers begin the annual CIP process with the development of detailed justifications for each capital project including project scope, basis for the cost estimate and key factors impacting costs and schedules. The Project Managers also explain modifications from the prior year's CIP and provide the overall project timeline. A timeline with all of the detailed project schedules can be found in the Appendix. The CIP Review Committee reviews the proposed capital projects including the assignment of priorities and schedules. Projects approved for inclusion in the CIP are subsequently analyzed to assess major program changes, overall capital funding needs and the strength of the project's connection to the objectives in NBC's Strategic Plan, as well as financing and operating cost impacts.

Capital Improvement Program Assumptions

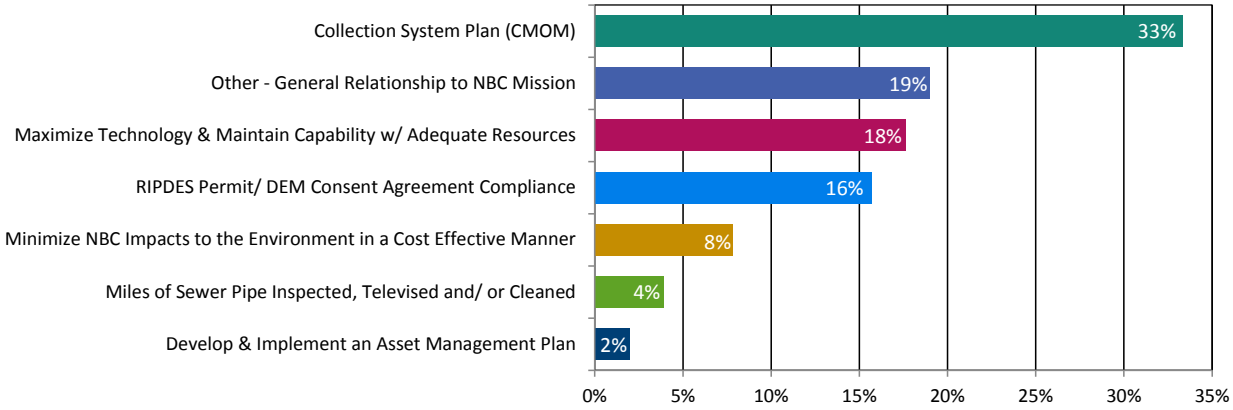
The costs and schedules included in this year's CIP reflect NBC's best estimates and are based on a number of assumptions as follows:

- Costs and cash flows are based on planning or design estimates and/or bids once available.
- The majority of construction projects include a 12% contingency based on the original construction cost estimate, which reflects recent industry experience. The contingency may be modified based upon the bids. Cost estimates for new design and construction projects include a 7% allowance for NBC staff salary and fringe associated with project management, based on historical data.
- Financing costs and debt service associated with the CIP are not included in the CIP expenditures or the project cash flows. Financing costs are capitalized and amortized over the length of the debt payment schedule and debt service is included as an expense in the annual operating budget.
- The CIP does not include the acquisition or replacement of certain assets that are identified in NBC's annual operating budget and are outlined in the five-year Operating Capital Plan.

Capital Projects by Strategic Objective

NBC's Strategic Plan ensures NBC's ability to meet water quality objectives set forth by regulatory requirements through achieving short-term and long-term objectives at a reasonable cost. As part of the CIP development process, Project Managers identify the one or more strategic goals that a project will address. The following chart below illustrates the percentage of capital projects in this year's CIP aligned with each Strategic Objective.

Percentage of Capital Projects by Strategic Objective

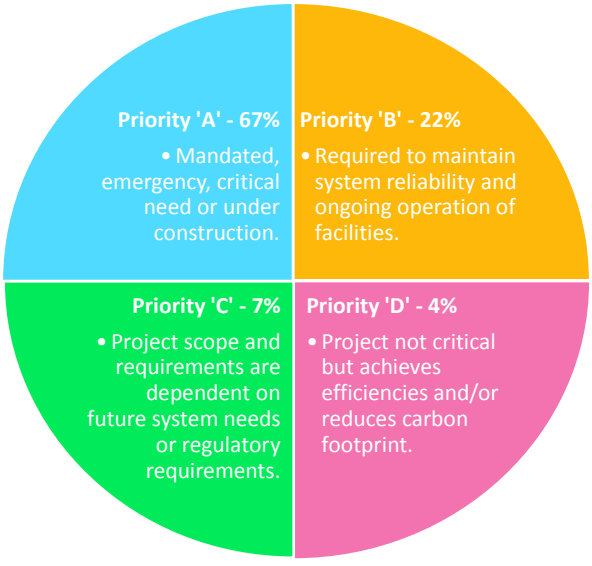


Of the 40 CIP projects, 33% are related to NBC's Collection System Plan strategic objective. These include interceptor rehabilitation and construction projects. In addition, 19% of the projects in the CIP are aligned with the General Relationship to NBC Mission strategic objective and 18% of the projects are aligned with the Maximize Technology & Maintain Capability with Adequate Resources strategic objective. The remaining projects are aligned with the RIPDES Permit and RIDEM Consent Agreements strategic objective.

Project Priorities

As part of the CIP program development, the criticality of each project is assessed and a priority ranking is assigned based on that assessment. Projects with a ranking of "A", represent a critical need and are either mandated an emergency or currently under construction. Approximately 67% of the projects identified in the window are prioritized with an "A" ranking and total $104.5 million.

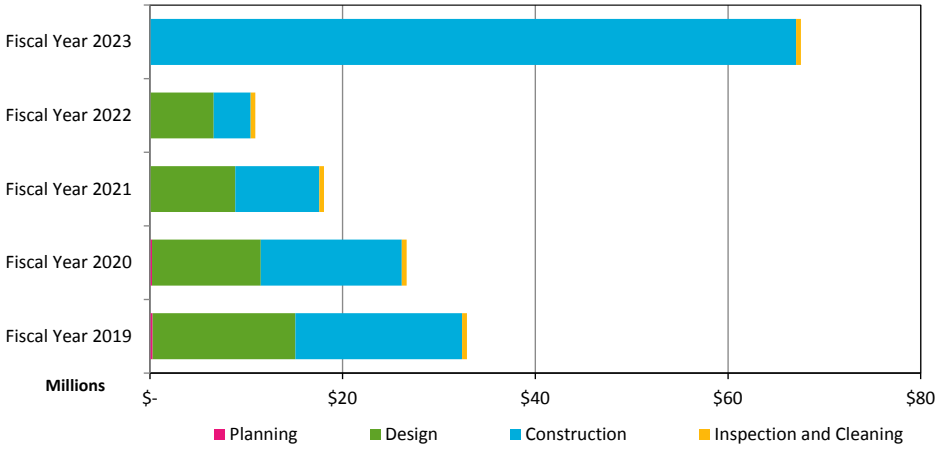
In addition, 22% of projects are identified with a "B" ranking and total $34.2 million, which includes projects that are required to maintain system reliability and ongoing operations of NBC's facilities. Projects with a rank of "C" are dependent on future system needs or regulatory requirements and represent 7% or $11.4 million. The remaining 4% are ranked as "D" and include projects that are not critical but achieve efficiencies and/or reduce NBC's carbon footprint totaling $6.0 million.



*Percentage calculated on project cost

Capital Expenditure by Phase

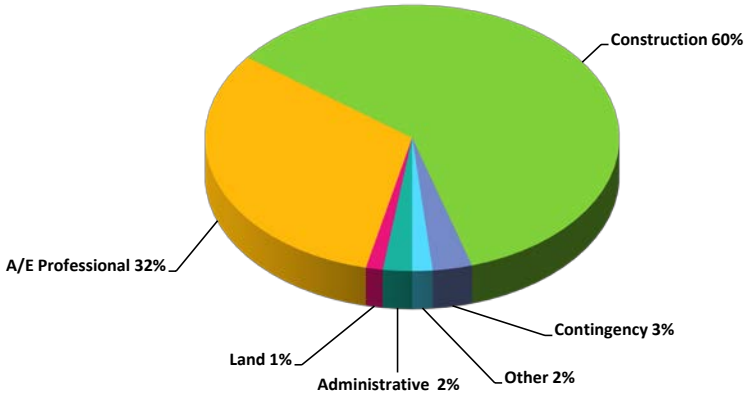
NBC's construction projects are generally comprised of three phases including planning, design, and construction. Planning consists of tasks such as feasibility studies and determination of the technology to be implemented. The design phase includes the development of plans and specifications, the acquisition of easements and permits. During the construction phase, facility improvements and infrastructure are constructed. The CIP also includes some programmed capital projects which are not broken down into phases, such as the inspection, cleaning and repair of NBC's interceptors, or other one-time special studies. As is evident in the chart below, the majority of the programmed expenditures during the five-year CIP window relate to the construction phase at 71% or $111.5 million.



Capital Expenditure by Cost Category

For planning purposes, the project costs are shown by categories including the Administrative category, which includes NBC's project management costs as well as police, legal and advertising expense. The Land category includes costs for easements, as well as land acquisition. The Architectural/Engineering (A/E) Professional cost category includes costs for professional planning or design services. The Construction cost category reflects contractor and outside construction management costs. Lastly, the Contingency cost category includes an allowance for construction cost increases based upon industry experience related to construction cost factors. As shown in the chart below, construction costs represent $93.6 million, or approximately 60% of the total costs within the FY 2019-2023 window. A/E Professional services represent approximately $49.6 million or 32% of the costs during this same period.

CIP Costs by Type of Activity



Capital Expenditures by Functional Area

For planning purposes, NBC also groups capital projects into five functional areas, according to the scope and tasks involved with the capital project. The functional areas are described below.

Functional Area	Project Examples
Wastewater Treatment Facility (WWTF)	Blower Improvements, Biogas Reuse, UV Disinfection and WWTF Improvements
Infrastructure Management (IM)	Energy Sustainability, Easement Restoration and System Improvements
CSO Phase III Facilities	CSO Phase III A ,B, C, and D
Interceptor Inspection and Cleaning (IIC)	Remote Television Inspection and Grit/Debris Removal and Disposal
Interceptor Repair and Construction (IRC)	Interceptor Expansion, Improvements, Lining and Manhole Rehabilitation

The following table shows how the CIP costs have shifted by functional area on a year-to-year basis. The most significant change is the 63% or $168.8 million decrease in the CSO Phase III A Facilities compared to last year's CIP. This is the result of both the outward shift in the construction schedule and a reduction in the estimated construction cost. Programmed expense for Wastewater Treatment Facility Improvements increased 51% from the prior year and Interceptor Restoration and Construction increased 16% from the prior year due to a number of new projects. Overall, programmed expenditures are 50% or $157.6 million less in the current CIP window compared to last year.

Functional Area (In thousands)	Prior Year CIP (FY 2018-2022)	Current Year CIP (FY 2019-2023)	% Change
Wastewater Treatment Facility	$ 19,173	$ 28,890	51%
Infrastructure Management	3,633	2,087	(43%)
CSO Phase III A Facilities	269,748	100,994	(63%)
Interceptor Inspection and Cleaning	2,500	2,500	0%
Interceptor Restoration and Construction	18,708	21,648	16%
Total	**$ 313,762**	**$ 156,119**	**(50%)**

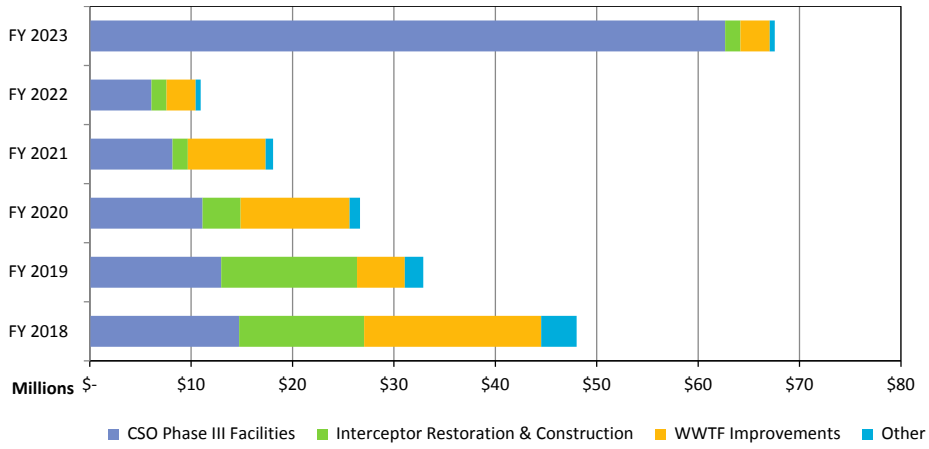
Significant Capital Improvement Projects

The most significant project included in this year's CIP is the CSO Phase III A Facilities which accounts for $101.0 million or 64.7% of the CIP's programmed costs. Expenditures on this project are projected to increase significantly in FY 2023 as NBC progresses from the design phase to construction. Other projects account for the remaining 35.3% of the CIP programmed costs. The following table and graph show the programmed expenditures for the CSO Phase III Facilities and other projects included in the current CIP window.

Expenditures by Major Project

Project (in Thousands)	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total Costs FY 2019 - 2023	% of Five Year Window
CSO Phase III Facilities	$14,727	$12,965	$11,119	$ 8,164	$ 6,076	$62,670	$ 100,994	64.7%
WWTF Improvements	17,462	4,708	10,745	7,677	2,866	2,894	28,890	18.5%
Interceptor Restoration & Construction	12,327	13,392	3,756	1,500	1,500	1,500	21,648	13.9%
Other	3,496	1,832	1,025	730	500	500	4,587	2.9%
Total	**$48,011**	**$32,897**	**$26,645**	**$18,071**	**$ 10,942**	**$ 67,564**	**$ 156,119**	**100.0%**

Expenditures by Major Project



Projects related to WWTF Improvements at Field's Point include Phase II of the Blower Improvements at $9.3 million; Final Clarifier Improvements at $4.1 million; Maintenance Facilities at $6.4 million, and the IM Facilities at $6.6 million. Improvements at Bucklin Point include Biogas Reuse at $8.3 million, UV Disinfection Improvements at $7.3 million and O&M Support Facilities at $15.2 million. In addition, this year NBC is programming $500 thousand annually for improvements to the wastewater treatment plants to ensure funding is available to support required investments at the facilities as they are identified through asset management and inspection.

NBC's CIP also includes funding for various NBC's Interceptor Restoration and Construction Projects. Specifically, the Johnston Sewer Improvements/Greenville at a cost of $9.3 million and Johnston Sewer Improvements/Hartford at a cost of $2.4 million which involve the extension of interceptors in the NBC's district to locations that are not presently served. NBC has also programmed improvements to the Moshassuck Valley Interceptor at $7.0 million, the Louisquisset Pike Interceptor at $4.0 million and the Providence River Siphon at $6.6 million.

Additional projects include the AVI and BVI Interceptor Easement Restorations at a total cost of $2.2 million, System-wide RIPDES flow monitoring at $848 thousand, South Providence Interceptor Cleaning at $662 thousand, along with green projects and studies.

The table below shows increased programmed expenditures for non-CSO projects over the prior year.

Year-over-Year Difference in the Capital Improvement Program by Major Project					
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
WWTF Improvements	$ 12,220	$ 2,534	$ 4,721	$ 3,217	$ 1,592
Interceptor Restoration & Construction	15	11,496	2,256	-	-
Other	994	659	(138)	(64)	-
Total Change Non-CSO Projects	**$ 13,229**	**$ 14,689**	**$ 6,839**	**$ 3,153**	**$ 1,592**
Percent Change in Non-CSO Projects	**66.0%**	**280.1%**	**78.7%**	**46.7%**	**48.6%**

CSO Phase III Facilities (Project 308)

In accordance with the terms and schedule set forth in the Consent Agreement between NBC and RIDEM, this CIP includes NBC's design and construction of the third and final phase of the federally mandated CSO Abatement Program. Required as part of a Consent Agreement between NBC and RIDEM, this project represents NBC's largest capital investment in this year's CIP.

NBC initiated the reevaluation of the Phase III Facilities in January 2014 with a focus on affordability issues, an evaluation of the significant improvements in water quality achieved through the first two phases, use of an integrated approach and an investigation of "green" technologies to determine if the third phase facilities, as originally developed, remained the most cost effective approach.

Photo: Alignment of CSO Phase III

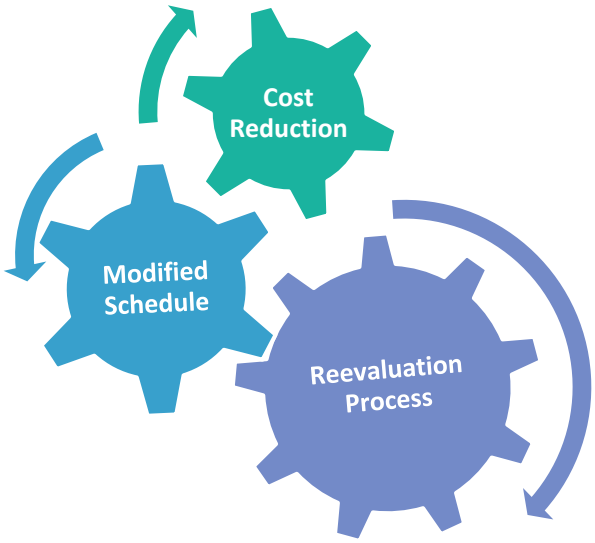
Several alternatives were developed through this reevaluation process and a series of Stakeholder meetings were held to evaluate the alternatives and financial impacts. The affordability analysis based upon EPA criteria was thoroughly conducted to evaluate ratepayer impact on the various communities and census tracts in NBC's service area. The Commission selected an alternative on April 28, 2015 which has a pre-design cost estimate of $795.2 million in 2018 dollars. The reevaluation report was submitted to RIDEM in July 2015 and RIDEM provided comments to NBC in March 2016. NBC is incorporating RIDEM's comments into a revised conceptual design report which will be submitted to RIDEM for approval. RIDEM has also required NBC to submit an updated Environmental Assessment (EA) for Phase III. The draft EA was submitted to RIDEM in February 2017. NBC's Consent Agreement must also be renegotiated based upon the approved plan.

As a result of the reevaluation process, the Phase III CSO Program was subdivided into four phases to be completed by 2041. The program also incorporates Green Stormwater Infrastructure (GSI) facilities to be constructed in each of the four phases to reduce stormwater inflow to the existing CSO system by implementing stormwater infiltration projects, with expenditures of $10.0 million on GSI in each phase.

The total pre-design estimate, which includes "other" costs (NBC labor, police, etc.), for the four phases of the CSO Phase III Facilities is $795.2 million in 2018 dollars, with expenditures of approximately $14.7 million in FY 2018 and $101.0 in the five year period of FY 2019-2023. NBC has commenced preliminary design of the Phase III A Facilities. Construction of this first phase is expected to begin in 2022.

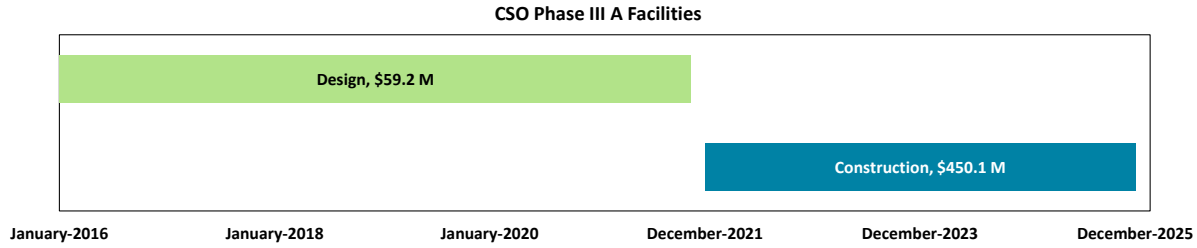
Subsequent to the completion of the reevaluation report and development of the revised plan, NBC further evaluated this alternative to determine if the facilities could be modified to further reduce the cost of the Phase III program. A description of the optimized facilities to be constructed in each of the four phases, as well as estimated costs and schedules are on the following page. The estimated construction costs will be updated as the design proceeds.

CSO Phase III Facilities Optimization Process



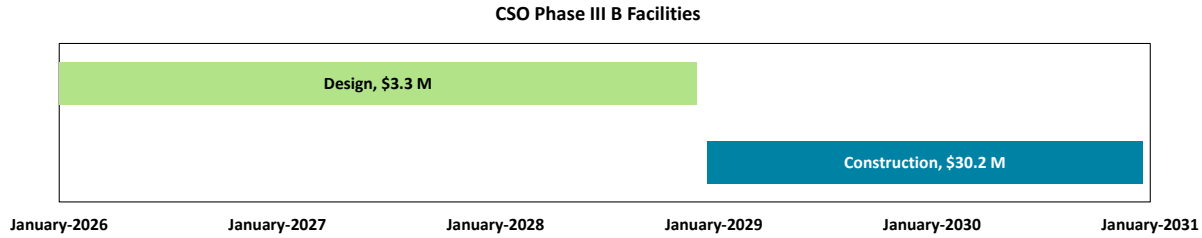
Phase III A

This Phase includes the design and construction of a deep rock tunnel in Pawtucket approximately 13,000 feet in length from the Bucklin Point WWTF in East Providence to Pawtucket, a Pump Station to convey flow to the Bucklin Point WWTF, drop shafts and consolidation conduits. The pre-design estimated cost for design and construction of these facilities in 2018 dollars is $509.3 million. Construction of this phase is scheduled to begin in FY 2022.



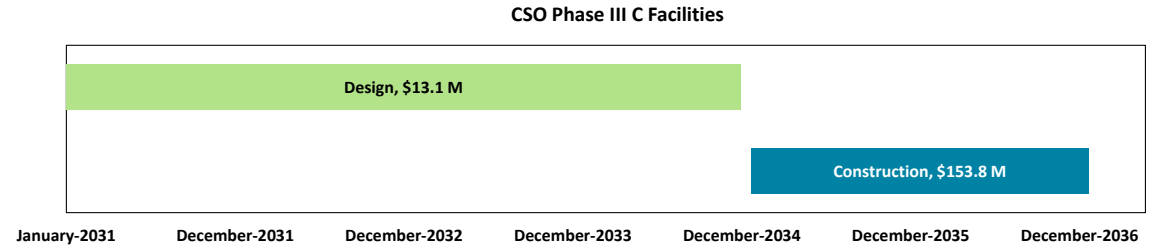
Phase III B

This phase includes the design and construction of two interceptors at High and Cross Streets which will be approximately 4,200 feet in length and one interceptor at Middle Street approximately 2,000 feet in length. The pre-design estimated cost for design and construction of this phase in 2018 dollars is $33.5 million. Construction of this phase is scheduled to begin in FY 2029.



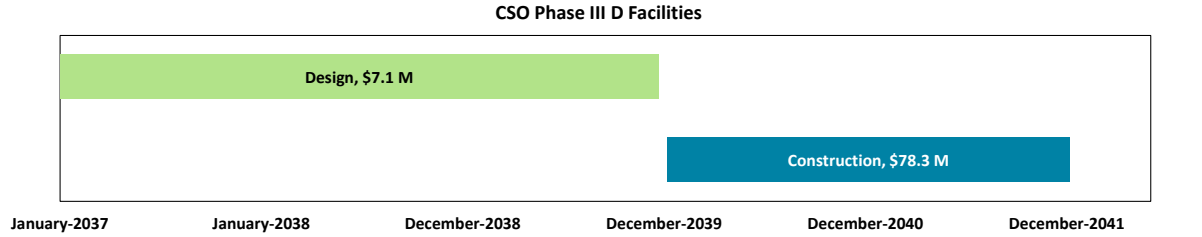
Phase III C

This phase involves the design and construction of a stub tunnel to convey flow from OF-220 to the Pawtucket tunnel at a pre-design estimated cost in 2018 dollars of $166.9 million. Construction of this phase is scheduled to begin in FY 2035.



Phase III D

This phase involves the design and construction of an interceptor that will store flow from OF 039 and OF 056 during a storm and subsequently release the flow into the system as capacity allows and sewer separation for OF 035. The pre-design estimated cost in 2018 dollars is $85.4 million. Construction of this phase is scheduled to begin in FY 2040.



Climate Change and Sustainability

To achieve NBC's environmental performance goals of minimizing environmental impact, NBC has programmed a number of projects in the CIP. The Green House Gas Study involves quantifying NBC's overall carbon footprint by measuring the gas emissions from the wastewater collection and treatment process. The results of this study will enable NBC to quickly respond to new requirements related to emissions as they are enacted. In addition, NBC plans to maximize energy efficiencies and renewable resources through the Energy Sustainability Program which involves the identification and implementation of conservation methods, improved efficiency options, and the use of sustainable renewable energy resources.

Photo: Field's Point Wind Turbine

Bucklin Point Biogas Reuse

Photo: Bucklin Point Digester

This year's CIP also includes the Bucklin Point Biogas Reuse Project (12000) which includes the installation of a biogas cogeneration system that will burn the biogas generated from the anaerobic biosolids digestion process and simultaneously generate electricity and heat for reuse in the treatment facility.

This process will reduce NBC's dependency on fossil fuel and generate approximately 4.8 million kWh of electricity annually which will offset the annual electricity expense at the Bucklin Point WWTF. Additionally, this project will generate revenue through the sale of Renewable Energy Credits or RECs. The estimated construction cost is $8.3 million and this "green" project is eligible for $512 thousand in principal forgiveness administered through the Rhode Island Infrastructure Bank (RIIB). In addition, it is anticipated that NBC will receive approximately $740 thousand in grants and incentives for the project. Overall, the project is 16% complete and the facilities are expected to be on-line in June 2018.

Wastewater Treatment Facility Improvements

This year's CIP includes $62.9 million in programmed funding for projects related to NBC's wastewater treatment facilities. The major projects at Field's Point include Phase II of the Blower Improvements (10908) which involves the replacement of the aeration blowers to ensure a reliable air source for the aeration treatment process and Final Clarifier Improvements (13000) which includes the replacement of internal drives, scraper mechanisms and launder covers. Construction of the new Maintenance Facilities (13200) addresses the need for new maintenance and equipment storage facilities.

Photo: Ultraviolet Disinfection System

The major projects at Bucklin Point include the evaluation of the Ultraviolet Disinfection system to determine if the system should be replaced, upgraded or substituted with an alternate technology. The existing piping and controls in the Digester Building will be replaced as part of Digester and Miscellaneous Improvements Project (81400). Also included in the CIP is construction of the Operations and Maintenance Support Facilities (81500) which will include a new operations building, storage and maintenance facilities at this location. The Biogas Reuse Project (12000) mentioned above is also at Bucklin Point.

On a system-wide basis, this year NBC made a policy decision to program $500 thousand annually for wastewater treatment facility improvements which will ensure resources are available to address the ongoing improvements required to ensure the integrity of the treatment facilities. Funds are also programmed for new IM Facilities (12400) that may be necessary if NBC is required to assume ownership of the lateral sewers currently owned by local communities in NBC's service area.

Project Number	Project Name	Total Estimated Project Cost
10908	FPWWTF Blower Improvements Phase II	$ 9,284
12000	BPWWTF Biogas Reuse	8,272
12400	IM Facilities	6,607
12900	FPWWTF Operations and Lab Building Reuse	760
13000	FPWWTF Final Clarifier Improvements	4,137
132000	FPWWTF Maintenance Facilities	6,448
20000	WWTF Improvements	2,888
20100	FY 17 WWTF Improvements	675
81000	BPWWTF UV Disinfection Improvements	7,289
81400	BPWWTF Digester & Miscellaneous Improvements	1,354
81500	BPWWTF O&M Support Facilities	15,189
	Total	$ 62,903

Collection System Infrastructure

This CIP includes several collection system infrastructure projects totaling $37.9 million. The two largest projects include the design and construction of improvements to expand NBC's service area along Greenville Avenue (30460) and Hartford Avenue (30464) in the Town of Johnston. Other interceptor projects include the replacement of a portion of the Moshassuck Valley Interceptor (30444) and increasing the capacity of the Louisquisset Pike Interceptor (30421).

Photo: NBC's staff utilizing a digger

In addition, projects such as the Field's Point Drive Interceptor Improvements (30465) and Improvements to Interceptors FY 2017 (30463) address various deficiencies throughout NBC's service area and include sewer lining, point repairs and replacements, outfall pipes and manhole rehabilitation.

Lastly, NBC is committed to maintaining its infrastructure and collection system by programming an allocation of $500 thousand for interceptor inspection and cleaning and $1.5 million for interceptor restoration and construction annually in years that do not have specific projects identified.

Completed and New Capital Projects

Completed Projects

In FY 2017, NBC completed eight capital projects at a cost of $44.2 million. One of the largest projects, the 36,790 square foot Water Quality Science Building (11900), was completed at a cost of $21.9 million. Staff moved into the new state-of-the-art laboratory and environmental analysis facility, in July 2016. Another large project, the Wind Energy Development Turbines (50500) was also completed in FY 2017 at a cost of $19.0 million. Two turbines were purchased in July 2016 and a third turbine was purchased in September 2016. The three 1.5 MW wind turbines convert wind energy into electricity at an off-site location which is net-metered. The following table shows the completed projects and estimated costs.

Project Number	Project Name	Cost (In thousands)
11900	Water Quality Science Building	$ 21,906
13100	NBC Energy Efficiency Upgrades	865
81300	BPWWTF Flood Protection	423
1140400	Evaluate NBC Facilities for Climate Resiliency	5
50500	Wind Energy Development Turbines	19,000
30473	Lockbridge and Valley Street Inspection & Cleaning	534
30474	BVI Inspection & Cleaning	80
30462	NBC East Providence Interceptor Improvements	1,381
	Total	**$ 44,194**

New Projects

This year's CIP includes eleven new capital projects totaling $39.0 million. Six of these projects relate to improvements at NBC's Field's Point and Bucklin Point WWTF's. The other new projects are related to NBC's RIPDES permit and the collection system. The new projects and their estimated costs are summarized in the following table and are discussed below.

Project Number	Project Name	Estimated Cost (In thousands)
13200	FPWWTF New Maintenance Facilities	$ 6,448
20000	WWTF Improvements	2,888
20100	FY 2017 WWTF Improvements	675
81000	BPWWTF UV Disinfection	7,289
81400	BPWWTF Digester Building Improvements	1,354
81500	BPWWTF O&M Support Facilities	15,189
40400	FPWWTF Facilities Plan Update	255
40500	NBC System-wide RIPDES Flow Monitoring	848
30475	Providence-South Providence IIC	662
30464	Johnston Sewer Improvements/Hartford Avenue	2,429
30465	Field's Point Drive Interceptor Improvements	937
	Estimated Total	**$ 38,974**

With respect to the new WWTF projects, Project 13200 includes design and construction of a new maintenance building and support facilities for equipment storage at Field's Point. Project 20000 reflects funding of a "placeholder" for potential facility improvements at both of NBC's WWTFs. Project 20100 includes improvements to the hypochlorite tank pad and chlorination building, rehabilitation of the aeration tank wall, and the installation of an energy recovery system within the grit building at Field's Point. The three remaining WWTF projects are for improvements at the Bucklin Point WWTF and include Project 81000 to address the Ultraviolet Disinfection system, Project 81400 to replace the digester piping and Project 81500 to evaluate and construct operations, maintenance, and equipment storage facilities at Bucklin Point.

Funding has been included for two new projects related to NBC's RIPDES Permits. Project 40400 is the development of a Facilities Plan Update at Field's Point to determine the maximum Nitrogen and BOD loads that can be accepted at the facility while ensuring compliance with the permit. Project 40500 involves condition assessments of existing flow monitoring equipment located throughout NBC's collection system in order to ensure consistent and accurate monitoring of flow conditions and measurements in accordance with the RIPDES permit.

The CIP also contains three new projects related to the NBC's collection system infrastructure. These projects include the inspection and cleaning of interceptors as part of Project 30475, an extension of NBC's interceptor along Hartford Avenue in the Town of Johnston under Project 30464, and interceptor restoration along Field's Point Drive, adjacent to the FPWWTF as part of Project 30465.

Financial Impact

NBC recognizes the importance of planning for capital expenditures and is committed to minimizing ratepayer impact through an assessment of both operating costs and financing impacts. NBC has incorporated an expanded analysis and presentation of these impacts in the CIP. The project specific information is included in the following discussion rather than on the individual project sheets.

FY 2018 Operating Budget Impacts

Certain capital improvements will directly impact the operating budget either through increased revenue, increased expense, or cost savings. NBC has identified these projects that have a significant impact on NBC's operating budget. The following table describes the impact categories and should be used to interpret the figures in the detailed operating impact tables in this section of the CIP.

Impact	Description	Refection in Tables
Savings	A reduction in operating costs resulting from no longer operating facilities, reduced energy consumption, and/or the purchase of electricity	Shown as a reduction in Operating Costs
Increased Expense	An increase in operating costs resulting from new facilities becoming operational	Shown as an increase in Operating Costs
Increased Revenue	An increase in revenue through new user charges, incentives, and/or the sale of Renewable Energy Credits	Shown as an increase in Operating Revenue or Non-Operating Revenue

NBC has identified the operating and expense impacts related to ten capital projects that are anticipated to be completed during FY 2018. As is shown below, eight of the projects scheduled for completion in FY 2018 are inspections, restorations, or studies and are not anticipated to have any operating impacts or start-up costs. Two projects, the BPWWTF Biogas Reuse, and the Johnston Sewer Improvements/Greenville Avenue are projected to have operating impacts with the combined impact of these projects resulting in a $31,318 increase in revenue and $47,483 in savings.

Estimated Operating Impact of Projects to Be Completed in Fiscal Year 2018

Capital Project	Savings	Increased Expense	Increased Revenue
FPWWTF- Operations and Lab Building Reuse	$ -	$ -	$ -
Upper Bay Dissolved Oxygen Evaluation	-	-	-
Greenhouse Gas Study	-	-	-
NBC Interceptor Easement Restoration, AVI	-	-	-
Municipal Lateral Sewer Acquisition Impact	-	-	-
FPWWTF Facilities Plan Update	-	-	-
Providence - South Providence Interceptor Inspection Cleaning	-	-	-
Johnston Sewer Improvements/Hartford Avenue	-	-	-
BPWWTF Biogas Reuse	(47,483)	-	7,985
Johnston Sewer Improvements/Greenville Avenue	-	-	23,333
Total	**$ (47,483)**	**$ -**	**$ 31,318**

* Start-up costs carried in project cost

BPWWTF – Biogas Reuse

The BPWWTF – Biogas Reuse Project (12000) consists of the installation of a combined heat and power system that will burn the biogas generated from the anaerobic biosolids digestion process. This system is projected to generate approximately 4.8 million KWh of electricity annually to be used on-site. This program has secondary benefits such as a reduction in greenhouse gas emissions associated with electricity production. This project will generate an estimated purchased electricity savings of $569,793 and REC revenue of $95,819 annually. The figures in the FY 2018 column of the table reflect one month of operation. NBC estimates annual maintenance cost of $165,000 in future years. All start-up costs are included in the project.

BPWWTF Biogas Reuse		
	FY 2018	**Annual**
Increased Revenue		
Sale of Renewable Energy Credits	$ 7,985	$ 95,819
Revenue Impact	**$ 7,985**	**$ 95,819**
Savings		
Electricity	(47,483)	(569,793)
Increased Expense		
Maintenance Contract	-	165,000
Net O&M Impact	**$ (47,483)**	**$ (404,793)**

Johnston Sewer Improvements/Greenville Avenue

The Johnston Sewer Improvements/Greenville Avenue Project (30460) includes the design and construction of improvements to expand sewers in the Town of Johnston. This project involves the installation of approximately 6,750 linear foot of 12" pipe along Greenville Avenue in Johnston. The revenue generated as a result of new customers connecting to NBC's system is estimated at $23,333 in FY 2018 and $280,688 on an annual basis.

Johnston Sewer Improvements/Greenville Avenue		
	FY 2018	**Annual**
Increased Revenue		
User Fees	$ 23,333	$ 280,688
Revenue Impact	**$ 23,333**	**$ 280,688**

FY 2019-2023 Revenue and Expense Impacts

The table below summarizes the projected impact of new capital projects scheduled to become operational in FY 2019-2023. Projects that involve inspection, studies, cleaning and rehabilitation generally do not have operating cost impacts and are excluded from this list. The estimated impact as a result of these projects is increased revenue of $240 thousand, savings of $3.1 million and increased expense of $3.1 million. Projects with revenue, savings or expense impacts are discussed in the following section.

CIP Impacts FY 2019-2023	Fiscal Year	Savings	Increased Expense	Increased Revenue
Field's Point Drive Interceptor Improvements	2019	$ -	$ 10,000	$ -
Louisquisset Pike Interceptor Replacement	2020	-	10,000	240,000
FPWWTF - Blower Improvements Phase II	2020	(2,864,264)	2,864,264	-
BPWWTF UV Disinfection Improvements	2022	(216,100)	10,600	-
IM Facilities	2022	-	97,288	-
FPWWTF Maintenance Facilities	2023	-	63,000	-
Johnston Sewer Improvements/Hartford Avenue	2023	-	10,000	-

Field's Point Drive Interceptor Improvements

The Field's Point Drive Interceptor Improvements Project (30465) is scheduled to be completed in FY 2019. The project consists of replacing a collapsed sewer pipe in one location and repairing broken pipe in several other locations. In other locations the pipe is cracked and will need to be lined. These measures will restore the sewer to its original capacity. The estimated operating expense is $10,000 every 5 years for ongoing maintenance of the collection system.

Field's Point Drive Interceptor Improvements			
	Savings	Increased Expense	Increased Revenue
Maintenance	$ -	$ 10,000	$ -
Total	**$ -**	**$ 10,000**	**$ -**

Louisquisset Pike Interceptor Replacement

Louisquisset Pike Interceptor Replacement Project (30421) is scheduled to be completed in FY 2020. The project consists of the construction of a larger replacement interceptor in the northern section of the Town of Lincoln to accommodate the additional flow. Preliminary projections indicate that the flow will generate additional sewer user fee revenue of $240,000 annually. There are no start-up costs associated with the construction of this interceptor. Operating costs are $10,000 every five years for maintenance.

Louisquisset Pike Interceptor			
	Savings	Increased Expense	Increased Revenue
User Fees	$ -	$ -	$ 240,000
Maintenance	-	10,000	-
Total	**$ -**	**$ 10,000**	**$ 240,000**

FPWWTF Blower Improvements Phase II

The FPWWTF Blower Improvements Phase II Project (10908) involves the replacement of the Field's Point aeration blowers to provide a reliable air source for the aeration treatment process. The estimated ongoing operation expense for the blowers is $2,864,264. Since these blowers are replacing existing equipment, the projected savings is $2,864,264 and the net impact is zero. The new blowers are scheduled to become operational in FY 2020 and the start-up costs are carried in the project.

FPWWTF Blower Improvements Phase II			
	Savings	Increased Expense	Increased Revenue
Electricity	$ (2,853,764)	$ 2,853,764	$ -
Water	(500)	500	-
Maintenance	(10,000)	10,000	-
Total	**$ (2,864,264)**	**$ 2,864,264**	**$ -**

BPWWTF UV Disinfection Improvements

The BPWWTF UV Disinfection Improvements Project (81000) involves the evaluation, design, and construction of a new UV disinfection system at the BPWWTF should it be determined to be in the best interest of NBC. Based upon the assumption that the assessment will result in the implementation of newer, lower cost technology, the project is estimated to result in $205,500 annual net savings related to lower electricity use and fewer lamp replacements. Completion of this project is scheduled for FY 2022.

BPWWTF UV Disinfection Improvements			
	Savings	Increased Expense	Increased Revenue
Electricity	$ (201,100)	$ -	$ -
Chemicals	-	10,600	-
Labor	(15,000)	-	-
Total	**$ (216,100)**	**$ 10,600**	**$ -**

IM Facilities

The IM Facilities Project (12400) is scheduled for completion in FY 2022. This project involves the construction of a new building that will be necessary if NBC is required by legislation to assume ownership of lateral sewers currently owned by local communities within the service area. The new building will include an administrative area, garage area and storage yard to house the existing IM staff and equipment. The additional operating expense associated with the new building is approximately $97,288 annually. All project startup costs, such as staff and equipment relocation are included in the project cost.

IM Facilities			
	Savings	Increased Expense	Increased Revenue
Electricity	$ -	$ 23,180	$ -
Natural Gas	-	39,072	-
Water	-	3,000	-
Maintenance	-	32,036	-
Total	**$ -**	**$ 97,288**	**$ -**

FPWWTF Maintenance Facilities

The FPWWTF Maintenance Facilities Project (13200) consists of the design and construction of a new maintenance building and facilities for storage of equipment at the FPWWTF. While not critical to plant operations it will improve efficiency because the existing maintenance building, built nearly 117 years ago, is small and outdated. This new facility has an estimated annual operating expense of $63,000.

FPWWTF Maintenance Facilities			
	Savings	Increased Expense	Increased Revenue
Electricity	$ -	$ 20,000	$ -
Natural Gas	-	40,000	-
Water	-	3,000	-
Total	**$ -**	**$ 63,000**	**$ -**

Johnston Sewer Improvements/Hartford Avenue

The Johnston Sewer Improvements/Hartford Avenue Project (30464) will extend the Hartford Avenue sewer approximately 5,400 feet to the area west of Route 295 to enable development within the Town of Johnston in conformance with the approved facilities plan. NBC anticipates that it will need to expend approximately $10,000 every 5 years for ongoing maintenance of the collection system.

Johnston Sewer Improvements/Hartford Avenue			
	Savings	Increased Expense	Increased Revenue
Maintenance	$ -	$ 10,000	$ -
Total	**$ -**	**$ 10,000**	**$ -**

Projects in Progress or Initiated but Not Completed in FY 2019-2023

BPWWTF O&M Support Facilities

The BPWWTF O&M Support Facilities Project (81500) includes the evaluation and construction of improvements to the Operations & Maintenance Support Facilities at the BPWWTF. The facilities are expected to be operational in FY 2026 with an estimated annual operating expense of $71,000.

BPWWTF O&M Support Facilities			
	Savings	Increased Expense	Increased Revenue
Electricity	$ -	$ 20,000	$ -
Natural Gas	-	40,000	-
Water	-	6,000	-
Maintenance	-	5,000	-
Total	**$ -**	**$ 71,000**	**$ -**

CSO Phase III Facilities

No operating cost impacts related to the CSO Phase III Facilities are anticipated to occur until FY 2028. For planning purposes, however, the CIP identifies estimated annual operating expense for the first phase of the CSO Phase III A Facilities based upon pre-design estimates. These costs include electricity to pump flow from the Pawtucket tunnel pump station and provide dehumidification, natural gas for heat in the pump station, screening and grit disposal, biosolids, water, treatment chemicals, and maintenance. Additional labor costs are anticipated to operate the facilities bringing the total estimated operating cost up to $1.0M annually. The start-up costs are included in the project. The operating expense of the remaining three phases will be determined once the design plans are available.

CSO Phase III Facilities				
Capital Project	Projected Year Facilities Online	Savings	Increased Expense	Increased Revenue
Phase III CSO Facilities - Phase A				
Electricity	FY 2026	$ -	$ 646,950	$ -
Natural Gas	FY 2026	-	64,240	-
Screening & Grit	FY 2026	-	49,660	-
Biosolids	FY 2026	-	194,866	-
Water	FY 2026	-	968	-
Hypochlorite	FY 2026	-	12,110	-
Sodium Bisulfite	FY 2026	-	4,942	-
Maintenance	FY 2026	-	29,033	-
Personnel	FY 2026	-	9,811	-
	Total	**$ -**	**$ 1,012,580**	**$ -**
Phase III CSO Facilities - Phase B	FY 2031	None	TBD	None
Phase III CSO Facilities - Phase C	FY 2037	None	TBD	None
Phase III CSO Facilities - Phase D	FY 2042	None	TBD	None

Project Financing

In addition to operating cost impacts, the debt service related to the financing the NBC's capital improvement program also impacts the operating budget. NBC's operating budget includes principal and interest payments as well as a debt service coverage line item. NBC uses a long-term financial model to identify capital funding needs and sources and to project debt issuance. The debt service and user fee projections associated with financing the CIP are identified in the Long-Term Plan section of the Operating Budget. Traditionally, NBC has financed the capital improvement program through the issuance of debt.

CIP Funding Sources

NBC has four sources of capital funding as follows:

Funding Source	Description
Restricted Account	Transfers from Stabilization Account – Prior Year Debt Coverage
Grant and Project Reimbursement Account	State or federal grant funds, capital project reimbursements, energy efficiency incentives, and transfers from the Renewal and Replacement Fund
State Revolving Fund Loans through RIIB	Borrowings from the RIIB backed by NBC tax-exempt revenue bonds - traditionally subsidized at 1/3 of NBC's market rate
Revenue Bonds	NBC tax-exempt debt issuance

Restricted Account

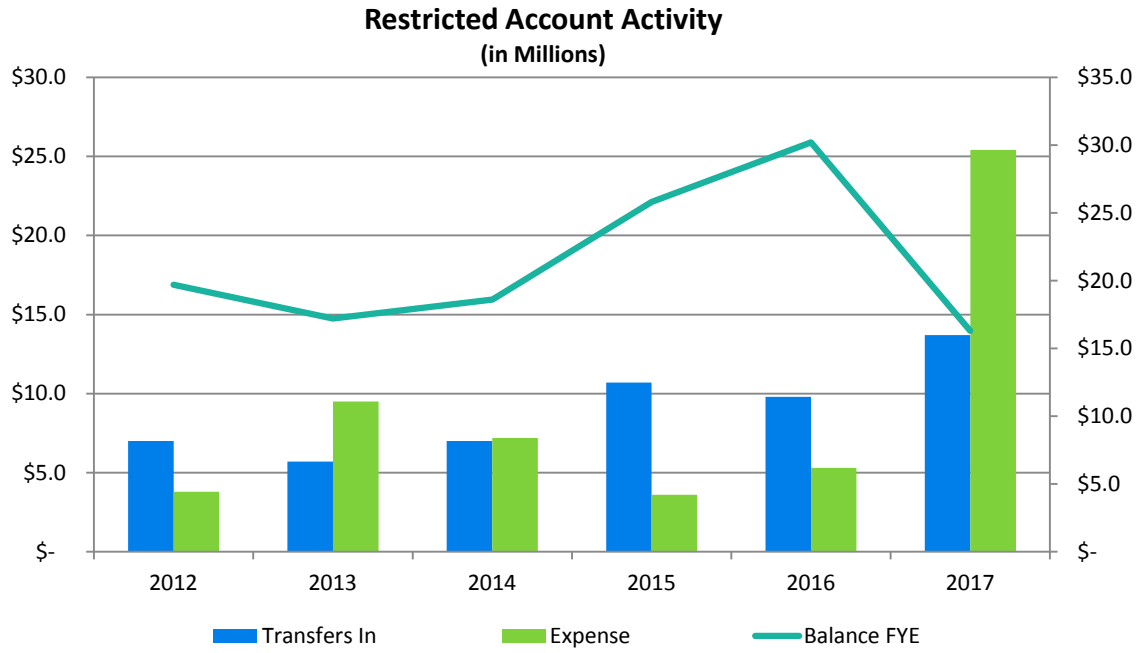
The NBC is regulated by the Rhode Island Public Utilities Commission (PUC) and the PUC has permitted the use of prior year debt service coverage to finance "pay as you go" capital. NBC typically programs these funds for interceptor cleaning and inspection, studies, land and other projects that may not be eligible or reachable for funding from the RIIB. NBC may also fund initial project costs from the Restricted Account until SRF funds become available.

In FY 2017 NBC funded approximately $25.2 million from the Restricted Account, which is significantly more than in prior years. This included costs of $18.4 million for the remainder of the purchase and installation of the three Wind Energy Development (WED) Turbines. In addition, NBC funded $3.9 million of the CSO Phase III Facilities design costs with restricted funds. Although NBC has borrowed funds through the RIIB to finance the CSO Phase III Facilities, RIDEM has deemed these costs not yet eligible for SRF funding since RIDEM has not approved the revised plan. NBC will continue to fund the CSO Phase III design costs with restricted funds until RIDEM approves the plan and will then request reimbursement from unspent SRF proceeds. A listing of the projects and amounts that were funded with restricted funds in FY 2017 is as follows:

FY 2017 Restricted Account Expenditures*		
Major Project		**Amount**
WED Turbines	$	18,419,254
CSO Phase III Facilties		3,881,246
Collection System Infrastructure		1,305,308
WWTF Improvements		1,295,115
Other		321,681
Total	**$**	**25,222,604**

* Based on 11 months

The projected restricted account balance available on July 1, 2017 is $16.3 million. NBC estimates that the carry-forward transfer from FY 2017 will be $12.6 million, bringing the restricted account balance available for capital projects in FY 2018 to $28.9 million. This amount is in addition to the programmed funding of the FY 2018 Operating Capital. The following chart shows the transfers into the Restricted Account, Capital Projects expense and Fiscal Year End (FYE) Restricted Account balance by fiscal year.



State Revolving Fund Loans – RIIB

The NBC's least cost source of debt financing is through the RIIB. The RIIB provides subsidized loans to eligible borrowers with interest rates that are 1/3 off of the market rate. In some instances, these loans include an additional subsidy through a principal forgiveness component. Typically the NBC submits a loan application in April for a loan that will be executed in June of the next year. In order for a project to be eligible for SRF funding, the project must be listed in the application and on the RIDEM's Project Priority List. NBC does not directly receive the loan proceeds, rather the invoices are submitted to RIIB for payment. In order for a project cost to be eligible for payment, NBC must receive a Certificate of Approval (COA) from RIDEM.

NBC has unexpended proceeds from the 2015 Series B and 2016 Series A bonds. Actual cash draws have been below projection due to an outward shift in project schedules as well as the temporary ineligibility of CSO Phase III A design costs. The table below shows the SRF Expenditures in FY 2017.

FY 2017 SRF Expenditures*		
Major Project	**2015 Series B**	**2016 Series B**
Water Quality Science Building	$ 2,572,296	$ -
BPWWTF Biogas Reuse	542,340	-
CSO Phase II Facilities	1,272,878	-
CSO Phase III Facilities	177,259	-
Collection System Infrastructure	2,001,473	-
WWTF Improvements	471,744	739,971
Total	**$ 7,037,989**	**$ 739,971**

* based on 11 months

Below is a chart that shows NBC's outstanding debt from the RIIB.

RIIB SRF Loans			
Bond Issue	Interest Rate*	Outstanding	Final Maturity
1997 Series - $8.150M	3.14473%	$ 2,129,247	September 1, 2020
1999 Series - $23.955M	3.03200%	8,839,999	September 1, 2021
2001 Series - $57M	2.67100%	16,280,000	September 1, 2022
2002 Series - $57M	1.07850%	23,421,360	September 1, 2023
2003 Series - $40M	1.34900%	19,849,000	September 1, 2025
2004 Series B - $40M	1.40400%	25,125,000	September 1, 2025
2005 Series B - $30M	1.39700%	16,402,000	September 1, 2026
2006 Series A - $30M	1.27000%	17,781,000	September 1, 2027
2007 Series B - $25M	1.47500%	18,798,000	September 1, 2029
2009 Series A - $55M	0.87700%	43,301,677	September 1, 2031
2010 Series A - $2M	0.52200%	1,280,371	September 1, 2030
2010 Series B - $20M	2.41300%	15,890,000	September 1, 2031
2011 Series A - $30M	2.25900%	23,629,263	September 1, 2032
2012 Series A - $25.75M	2.08800%	22,175,818	September 1, 2033
2013 Series B - $25M	2.09200%	22,801,946	September 1, 2034
2014 Series A - $45M	2.46700%	43,143,000	September 1, 2035
2015 Series B - $41.7535M	2.54900%	41,241,430	September 1, 2045
2016 Series A - $23.0M	1.96700%	23,000,000	September 1, 2037
		$ 385,089,111	

* RIIB loans have a 0.5% service fee

Revenue Bonds

Because the statewide demand for SRF loans exceeds the RIIB lending capacity, NBC issues revenue bonds to the extent that SRF funds are not available. NBC did not have any unspent proceeds in FY 2017. The table below shows NBC's outstanding revenue bonds.

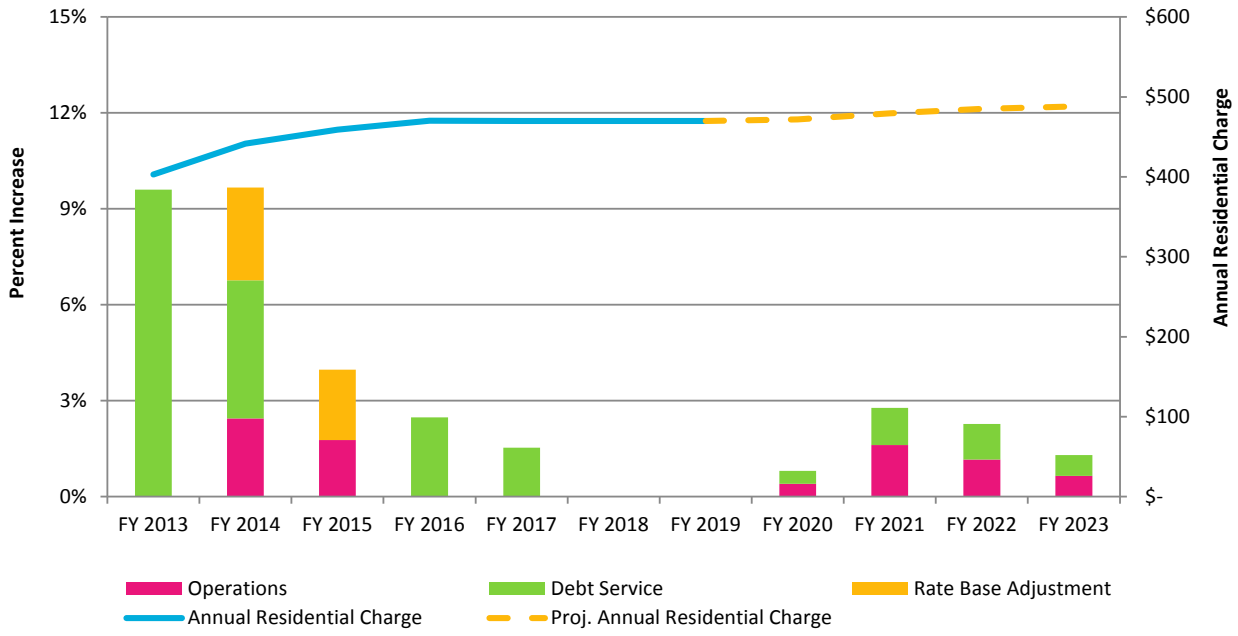
Revenue Bonds			
Bond Issue	Interest Rate	Outstanding	Final Maturity
2008 Series A - $66.0M	Variable	$ 56,465,000	August 1, 2035
2013 Series A - $71.48M	4.33291%	71,480,000	September 1, 2043
2013 Series C - $34.97M	4.68715%	34,970,000	September 1, 2033
2014 Series B - $39.82M Refunding	4.86125%	39,820,000	September 1, 2035
2015 Series A - $40.085M Refunding	4.94207%	40,085,000	September 1, 2037
		$ 242,820,000	

Impact of CIP Financing

Primarily as a result of the modified schedule for the CSO Phase III Facilities, no additional debt financing is anticipated to be needed until FY 2020. In fiscal years 2018 through 2019 NBC will use existing loan proceeds and restricted funds to finance the CIP. More detailed information regarding capital funding sources and uses is included in the Long-Term Plan section of the FY 2018 Operating Budget.

The following chart shows the actual and projected rate increases along with the annual residential charge for FY 2013- FY 2023. Based on projections, it is anticipated that current rates are sufficient to support NBC's operations, debt service and debt service coverage through FY 2019. In FY 2020 rate relief will be required to meet projected higher O&M and debt service costs.

Actual and Projected Rate Increases and Annual Residential Charge



Capital Project Summary by Fiscal Year

Project Number	Project Name	Project Priority	Pre-Fiscal Year 2018	Fiscal Year 2018	Fiscal Years 2019-2023	Post-Fiscal Year 2023	Total Estimated Project Cost
Wastewater Treatment Facility Improvements							
10908	FPWWTF Blower Improvements Phase II	A	$ 1,547	$ 5,246	$ 2,492	$ -	$ 9,284
12000	BPWWTF Biogas Reuse	A	2,265	5,958	49	-	8,272
12400	IM Facilities	C	-	268	6,339	-	6,607
12900	FPWWTF Operations and Lab Building Reuse	A	75	685	-	-	760
13000	FPWWTF Final Clarifier Improvements	A	920	2,925	292	-	4,137
13200	FPWWTF Maintenance Facilities	D	3	396	6,049	-	6,448
20000	WWTF Improvements	B	-	-	2,388	500	2,888
20100	FY 17 WWTF Improvements	B	51	512	112	-	675
81000	BPWWTF UV Disinfection Improvements	B	6	139	7,144	-	7,289
81400	BPWWTF Digester & Miscellaneous Improvements	A	13	1,333	8	-	1,354
81500	BPWWTF O&M Support Facilities	B	-	-	4,018	11,171	15,189
	Subtotal		4,880	17,462	28,890	11,671	62,903
Infrastructure Management							
1100000	Site Specific Study	C	211	-	245	-	457
1140100	River Model Development	C	322	80	135	-	537
1140200	Upper Bay Dissolved Oxygen Evaluation	C	-	300	-	-	300
1140300	Greenhouse Gas Study	C	31	46	-	-	77
1140500	NBC Energy Sustainability	C	42	34	9	-	85
30438	NBC Interceptor Easement Restoration, AVI	A	714	116	-	-	830
30500	NBC Interceptor Easements Restoration, Various Locations	A	-	220	634	-	854
30501	NBC Interceptor Easements Restoration, BVI	B	313	1,069	17	-	1,399
30700	NBC System-wide Facilities Planning	C	-	49	337	-	386
40100	NBC Facility Electrical Improvements	B	-	21	109	-	130
40101	FPWWTF Facility Electrical Improvements	B	21	40	64	-	125
40200	NBC System-wide Inflow Reduction	C	-	-	318	-	318
40300	Municipal Lateral Sewer Acquisition Impact	C	3	293	-	-	296
40400	FPWWTF Facilities Plan Update	A	155	100	-	-	255
40500	NBC System-wide RIPDES Flow Monitoring	C	-	629	219	-	848
	Subtotal		1,812	2,996	2,087	-	6,896
Phase III CSO Facilities							
30800	CSO Phase III A Facilities	A	6,286	14,727	100,994	387,340	509,347
30810	CSO Phase III B Facilities	A	-	-	-	33,522	33,522
30820	CSO Phase III C Facilities	A	-	-	-	166,909	166,909
30830	CSO Phase III D Facilities	A	-	-	-	85,377	85,377
	Subtotal		6,286	14,727	100,994	673,148	795,155
Interceptor Inspection & Cleaning							
30400M	Interceptor Inspection and Cleaning	B	-	51	2,500	500	3,051
30475	Providence - South Providence Interceptor Inspection Cleaning	B	213	449	-	-	662
	Subtotal		213	500	2,500	500	3,713
Interceptor Restoration & Construction							
30400C	Interceptor Restoration and Construction	B	-	-	4,500	1,500	6,000
30421	Louisquisset Pike Interceptor Improvements	C	-	279	3,765	-	4,044
30444	Moshassuck Valley Interceptor	B	491	33	6,511	-	7,035
30457	Providence River Siphon	B	362	89	6,101	-	6,553
30460	Johnston Sewer Improvements/Greenville Avenue	A	1,304	8,022	-	-	9,325
30463	Improvements to Interceptors FY 2017	A	245	1,315	11	-	1,571
30464	Johnston Sewer Improvements/Hartford Avenue	B	17	2,412	-	-	2,429
30465	Field's Point Drive Interceptor Improvements	B	-	177	760	-	937
	Subtotal		2,419	12,327	21,648	1,500	37,894
	Total Capital Improvement Program		**$ 15,610**	**$ 48,011**	**$ 156,119**	**$ 686,819**	**$ 906,559**

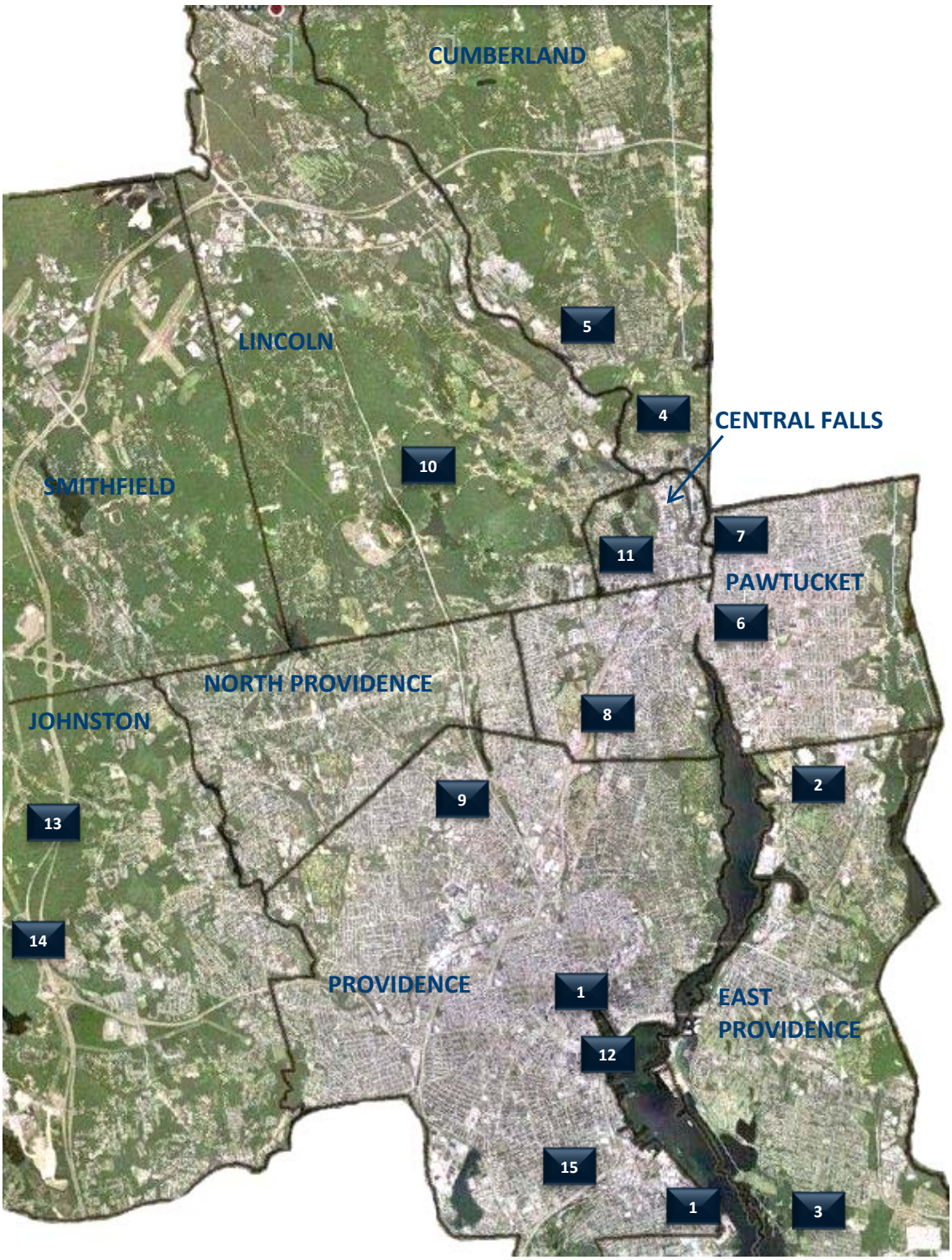
Priority	Description
A	Mandated, emergency, critical need or under construction.
B	Required to maintain system reliability and ongoing operation of facilities.
C	Project scope and requirements are dependent on futures system needs or regulatory requirements.
D	Project not critical but achieves efficiencies and/or reduces carbon footprint.

Capital Improvement Program Project Locations

The capital projects identified in this year's CIP are shown on the map on the following page. The map highlights 15 project locations as identified below. Some projects are System-Wide and noted as SW.

Legend Key	Project Number	Project Name
Wastewater Treatment Facility Improvements		
1	10908	FPWWTF Blower Improvements Phase II
2	12000	BPWWTF - Biogas Reuse
1	12400	New IM Facilities
1	12900	FPWWTF- Operations and Lab Building Reuse
1	13000	FPWWTF Final Clarifier Improvements
1	13200	FPWWTF New Maintenance Facilities
1	20100	FY 2017 WWTF Improvements
2	81000	BPWWTF UV Disinfection
2	81400	BPWWTF Digester Pipe and Miscellaneous Improvements
2	81500	BPWWTF O&M Support Facilities
Infrastructure Management		
3	1100000	Site Specific Study
3	1140100	River Model Development
3	1140200	Receiving Water Compliance Study
1, 2	1140300	Green House Gas Study
SW	1140500	NBC Energy Sustainability
4	30438	NBC Interceptor Easement Restoration - AVI
SW	30500	NBC Interceptor Easements Restoration - Various Locations
5	30501	NBC Interceptor Easements Restoration - BVI
SW	30700	NBC System-wide Facilities Planning
1, 2	40100	NBC Facility Electrical Improvements
1	40101	FPWWTF Facility Electrical Improvements
SW	40200	NBC System-Wide Inflow Reduction
SW	40300	Municipal Lateral Sewer Acquisition Impact
1	40400	FPWWTF Facilities Plan Update-P
SW	40500	NBC System-wide RIPDES Flow Monitoring
Phase III CSO Facilities		
6	30800	CSO Phase III A Facilities
7	30810	CSO Phase III B Facilities
8	30820	CSO Phase III C Facilities
9	30830	CSO Phase III D Facilities
Interceptor Inspection & Cleaning and Restoration and Construction		
15	30475	Providence-South Providence Interceptor Inspection Cleaning
10	30421	Louisquisset Pike Interceptor
11	30444	Moshassuck Valley Interceptor
12	30457	Providence River Siphon
13	30460	Johnston Sewer Improvements
SW	30463	Improvements to Interceptors FY 2017
14	30464	Johnston Sewer Improvements-Hartford
1	30465	Field's Point Drive Interceptor Improvements

Capital Improvement Program Project Locations



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10908

FPWWTF Blower Improvements Phase II

Project Manager: Rich Bernier, P.E.
Contractor(s): Hart Engineering, Corp.

Field's Point (Providence, RI)
Project Priority: A

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	February-15	April-16	14 Months	$682
Construction	October-16	May-20	42 Months	9,284
Total Project	**February-15**	**May-20**	**63 Months**	**$9,966**

Photo: Aeration tanks at Field's Point

This project involves the replacement of the Field's Point aeration blowers to ensure a reliable air source for the aeration treatment process.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 1,547	**$ 5,246**	**$ 2,448**	**$ 43**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 9,284**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 81	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 81
Land	-	-	-	-	-	-	-	-	-
A/E Professional	582	-	-	-	-	-	-	-	582
Other	19	-	-	-	-	-	-	-	19
Total	**$ 682**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 682**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 48	$ 65	$ 15	$ -	$ -	$ -	$ -	$ -	$ 128
A/E Professional	125	260	60	-	-	-	-	-	445
Construction	1,349	4,851	1,585	43	-	-	-	-	7,828
Contingency	-	-	783	-	-	-	-	-	783
Other	25	70	5	-	-	-	-	-	100
Total	**$ 1,547**	**$ 5,246**	**$ 2,448**	**$ 43**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 9,284**

Note: Cash Flow Basis in Thousands

12000

BPWWTF Biogas Reuse

Project Manager: Rich Bernier, P.E.
Contractor(s): Daniel O'Connell's Sons

Location: Bucklin Point WWTF (East Providence, RI)
Project Priority: A

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	June-07	December-09	30 Months	$47
Design	April-10	June-14	50 Months	473
Construction	May-14	May-19	60 Months	8,272
Total Project	**June-07**	**May-19**	**143 Months**	**$8,792**

Photo: Bucklin Point Digester and Heat Exchanger Building

This project is to install a biogas cogeneration, or combined heat and power system, to burn the biogas generated within the biosolids anaerobic digesters at the Bucklin Point WWTF as a fuel to generate electricity and heat for reuse in the treatment facility. The system is projected to generate approximately 4.8 million kWh of electricity annually.

CIP Window Summary

Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
$ 2,265	**$ 5,958**	**$ 49**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 8,272**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 22	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 22
A/E Professional	25	-	-	-	-	-	-	-	25
Other	-	-	-	-	-	-	-	-	-
Total	**$ 47**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 47**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 123	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 123
Land	-	-	-	-	-	-	-	-	-
A/E Professional	323	-	-	-	-	-	-	-	323
Other	27	-	-	-	-	-	-	-	27
Total	**$ 473**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 473**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 229	$ 99	$ 4	$ -	$ -	$ -	$ -	$ -	$ 332
A/E Professional	260	60	-	-	-	-	-	-	320
Construction	1,776	5,159	35	-	-	-	-	-	6,970
Contingency	-	600	-	-	-	-	-	-	600
Other	-	40	10	-	-	-	-	-	50
Total	**$ 2,265**	**$ 5,958**	**$ 49**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 8,272**

Note: Cash Flow Basis in Thousands

12400
IM Facilities

Project Manager: Thomas Brueckner, P.E.
Contractor(s): N/A

Location: Field's Point (Providence, RI)
Project Priority: C

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	March-15	February-19	47 Months	$555
Construction	March-19	July-21	28 Months	6,052
Total Project	**March-15**	**July-21**	**76 Months**	**$6,607**

Photo: Existing IM Building

This project involves the design and construction of a new building that would be needed if NBC is required by legislation to assume ownership of lateral sewers currently owned by local communities within its district. The building will include an administrative area along with a garage area and storage yard.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	**$ 268**	**$ 319**	**$ 5,253**	**$ 717**	**$ 50**	**$ -**	**$ -**	**$ 6,607**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ 18	$ 17	$ -	$ -	$ -	$ -	$ -	$ 35
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	250	250	-	-	-	-	-	500
Other	-	-	20	-	-	-	-	-	20
Total	**$ -**	**$ 268**	**$ 287**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 555**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ 17	$ 320	$ 15	$ -	$ -	$ -	$ 352
A/E Professional	-	-	15	33	2	-	-	-	50
Construction	-	-	-	4,900	50	50	-	-	5,000
Contingency	-	-	-	-	600	-	-	-	600
Other	-	-	-	-	50	-	-	-	50
Total	**$ -**	**$ -**	**$ 32**	**$ 5,253**	**$ 717**	**$ 50**	**$ -**	**$ -**	**$ 6,052**

Note: Cash Flow Basis in Thousands

12900

FPWWTF Operations and Laboratory Building Reuse

Project Manager: Thomas Brueckner, P.E.
Contractor(s): Dome Construction

Location: Service Road (Providence, RI)
Project Priority: A

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	July-14	March-17	32 Months	$42
Design	N/A	N/A	N/A	N/A
Construction	February-17	June-18	16 Months	760
Total Project	**July-14**	**June-18**	**47 Months**	**$802**

Photo: Old Laboratory Building

With the completion of the Water Quality Science Building, the old Laboratory Building is empty and there is vacated space in the old FPWWTF Operations Building. This project involves the evaluation of these newly vacated spaces for reuse and construction of the recommended improvements.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 75	**$ 685**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 760**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 42	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 42
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ 42**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 42**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 25	$ 60	$ -	$ -	$ -	$ -	$ -	$ -	$ 85
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	50	590	-	-	-	-	-	-	640
Contingency	-	10	-	-	-	-	-	-	10
Other	-	25	-	-	-	-	-	-	25
Total	**$ 75**	**$ 685**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 760**

Note: Cash Flow Basis in Thousands

13000

FPWWTF Final Clarifier Improvements

Project Manager: Rich Bernier, P.E.
Contractor(s): Hart Engineering Corp.

Location: Field's Point WWTF (Providence, RI)
Project Priority: A

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	July-15	May-16	10 Months	$50
Construction	May-16	January-19	31 Months	4,137
Total Project	**July-15**	January-19	**42 Months**	**$4,187**

Photo: Final Clarifier at FPWWTF

This project involves replacement of the internal drive and scraper mechanisms and new launder covers on final clarifiers 1, 2 and 3 and new launder covers on final clarifiers 4-9 at the Field's Point WWTF. This project includes a new Grit Pad, Return Sludge Pump Station #2 HVAC unit replacement and installation of rip rap on the slope along New York Ave.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 920	**$ 2,925**	**$ 292**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 4,137**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 50	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 50
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ 50**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 50**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 46	$ 48	$ 10	$ -	$ -	$ -	$ -	$ -	$ 104
A/E Professional	-	30	-	-	-	-	-	-	30
Construction	870	2,817	40	-	-	-	-	-	3,727
Contingency	-	-	236	-	-	-	-	-	236
Other	4	30	6	-	-	-	-	-	40
Total	**$ 920**	**$ 2,925**	**$ 292**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 4,137**

Note: Cash Flow Basis in Thousands

13200

FPWWTF Maintenance Facilities

Project Manager: Tom Brueckner, P.E.
Contractor(s): N/A

Location: Field's Point & Bucklin Point WWTF
Project Priority: D

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	May-17	December-18	19 Months	$724
Construction	March-19	April-21	25 Months	5,724
Total Project	**May-17**	**April-21**	**47 Months**	**$6,448**

Photo: Existing Maintenance Building

This project involves the design and construction of a new maintenance building and support facilities for equipment storage at the FPWWTF. While not critical to plant operations, it will improve efficiency in maintenance support because the existing maintenance building was built nearly 117 years ago and is outdated.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 3	**$ 396**	**$ 764**	**$ 2,611**	**$ 2,674**	**$ -**	**$ -**	**$ -**	**$ 6,448**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 3	$ 38	$ 18	$ -	$ -	$ -	$ -	$ -	$ 59
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	342	282	-	-	-	-	-	624
Other	-	16	25	-	-	-	-	-	41
Total	**$ 3**	**$ 396**	**$ 325**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 724**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ 17	$ 60	$ 55	$ -	$ -	$ -	$ 132
A/E Professional	-	-	6	24	22	-	-	-	52
Construction	-	-	416	2,497	2,087	-	-	-	5,000
Contingency	-	-	-	-	500	-	-	-	500
Other	-	-	-	30	10	-	-	-	40
Total	**$ -**	**$ -**	**$ 439**	**$ 2,611**	**$ 2,674**	**$ -**	**$ -**	**$ -**	**$ 5,724**

Note: Cash Flow Basis in Thousands

20000

WWTF Improvements

Project Manager: Thomas Brueckner, P.E.
Contractor(s): N/A

Location: Field's Point & Bucklin Point
Project Priority: B

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	N/A	N/A	N/A	N/A
Construction	March-18	Ongoing	Ongoing	$2,888
Total Project	**March-18**	**Ongoing**	**Ongoing**	**$2,888**

Photo: Aeration Tank Pumps

Project 20000 reflects funding of potential facility improvements at NBC's WWTFs to comply with current and future regulatory requirements and ensure uninterrupted wastewater treatment processing, 24 hours per day and 365 days per year. As new improvement projects are identified, they will be given a unique project number and draw funding from the funds available in Project 20000.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	**$ -**	**$ 388**	**$ 500**	**$ 500**	**$ 500**	**$ 500**	**$ 500**	**$ 2,888**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -		$ 46	$ 58	$ 58	$ 58	$ 58	$ 58	$ 336
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	-	327	422	422	422	422	422	2,437
Contingency	-	-	-	-	-	-	-	-	-
Other	-	-	15	20	20	20	20	20	115
Total	**$ -**	**$ -**	**$ 388**	**$ 500**	**$ 500**	**$ 500**	**$ 500**	**$ 500**	**$ 2,888**

Note: Cash Flow Basis in Thousands

20100

FY 2017 WWTF Improvements

Project Manager: Thomas Brueckner, P.E.
Contractor(s): N/A

Location: 2 Ernest Street, Providence, RI
Project Priority: B

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	N/A	N/A	N/A	N/A
Construction	February-17	August-18	17 Months	$675
Total Project	**February-17**	**August-18**	**17 Months**	**$675**

Photo: Hypochlorite Tank Pad

Project 20100 involves improvements to the hypochlorite tank pad and chlorination building. Other improvements include rehabilitation of the aeration tank wall, installation of an energy recovery system for air handling and replacement of piping in the grit building.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 51	**$ 512**	**$ 112**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 675**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 20	$ 60	$ 15	$ -	$ -	$ -	$ -	$ -	$ 95
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	31	432	57	-	-	-	-	-	520
Contingency	-	-	40	-	-	-	-	-	40
Other	-	20	-	-	-	-	-	-	20
Total	**$ 51**	**$ 512**	**$ 112**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 675**

Note: Cash Flow Basis in Thousands

81000

BPWWTF UV Disinfection Improvements

Project Manager: Thomas Brueckner, P.E.
Contractor(s): N/A

Location: Bucklin Point WWTF (East Providence, RI)
Project Priority: B

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	October-14	August-15	10 Months	$26
Design	May-17	April-19	23 Months	360
Construction	October-19	October-21	24 Months	6,929
Total Project	**October-14**	**October-21**	**84 Months**	**$7,315**

Photo: Ultraviolet Disinfection System

This project is to evaluate the current Ultraviolet (UV) Disinfection system at Bucklin Point and determine a system replacement/upgrade or use of an alternate technology. The current UV equipment is nearing the end of its useful life and the medium pressure, high intensity lamps are expensive and less efficient than newer technologies.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 6	**$ 139**	**$ 226**	**$ 2,128**	**$ 3,140**	**$ 1,650**	**$ -**	**$ -**	**$ 7,289**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 5	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5
A/E Professional	20	-	-	-	-	-	-	-	20
Other	2	-	-	-	-	-	-	-	2
Total	**$ 26**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 26**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 6	$ 34	$ 30	$ -	$ -	$ -	$ -	$ -	$ 70
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	100	150	-	-	-	-	-	250
Other	-	5	35	-	-	-	-	-	40
Total	**$ 6**	**$ 139**	**$ 215**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 360**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ 8	$ 82	$ 84	$ 28	$ -	$ -	$ 202
A/E Professional	-	-	3	36	36	12	-	-	87
Construction	-	-	-	2,000	3,000	1,000	-	-	6,000
Contingency	-	-	-	-		600	-	-	600
Other	-	-	-	10	20	10	-	-	40
Total	**$ -**	**$ -**	**$ 11**	**$ 2,128**	**$ 3,140**	**$ 1,650**	**$ -**	**$ -**	**$ 6,929**

Note: Cash Flow Basis in Thousands

81400

BPWWTF Digester & Miscellaneous Improvements

Project Manager: Rich Bernier, P.E.
Contractor(s): Hart Engineering Corp

Location: Bucklin Point WWTF (East Providence, RI)
Project Priority: A

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	N/A	N/A	N/A	N/A
Construction	December-16	February-19	26 Months	$1,354
Total Project	**December-16**	**February-19**	**26 Months**	**$1,354**

Photo: Existing Digester Methane Piping

The existing piping in the Digester Building was installed nearly 60 years ago and has been deemed deficient. This project involves replacement of existing digester methane piping and controls.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 13	**$ 1,333**	**$ 8**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,354**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 13	$ 59	$ 2	$ -	$ -	$ -	$ -	$ -	$ 74
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	1,194	6	-	-	-	-	-	1,200
Contingency	-	60	-	-	-	-	-	-	60
Other	-	20	-	-	-	-	-	-	20
Total	**$ 13**	**$ 1,333**	**$ 8**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,354**

Note: Cash Flow Basis in Thousands

81500

BPWWTF O&M Support Facilities

Project Manager: Thomas Brueckner, P.E.
Contractor(s): N/A

Location: Bucklin Point WWTF (East Providence, RI)
Project Priority: B

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	September-18	March-20	18 Months	$309
Design	June-20	June-22	23 Months	1,315
Construction	November-22	October-25	35 Months	13,565
Total Project	**September-18**	**October-25**	**85 Months**	**$15,189**

Photo: O&M Support Facilities

This project includes the evaluation and construction of improvements required to the Operations & Maintenance Support Facilities at the BPWWTF. The primary need to be addressed will be planning, development and construction of operations and maintenance buildings and to provide a new operations building, storage building and maintenance facilities.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	**$ -**	**$ 102**	**$ 210**	**$ 646**	**$ 666**	**$ 2,394**	**$ 11,171**	**$ 15,189**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ 32	$ 27	$ -	$ -	$ -	$ -	$ 59
A/E Professional	-	-	60	140	-	-	-	-	200
Other	-	-	10	40	-	-	-	-	50
Total	**$ -**	**$ -**	**$ 102**	**$ 207**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 309**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ 3	$ 36	$ 36	$ -	$ -	$ 75
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	-	-	600	600	-	-	1,200
Other	-	-	-	-	10	30	-	-	40
Total	**$ -**	**$ -**	**$ -**	**$ 3**	**$ 646**	**$ 666**	**$ -**	**$ -**	**$ 1,315**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ 42	$ 168	$ 210
A/E Professional	-	-	-	-	-	-	21	84	105
Construction	-	-	-	-	-	-	2,331	9,669	12,000
Contingency	-	-	-	-	-	-	-	1,200	1,200
Other	-	-	-	-	-	-	-	50	50
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,394**	**$ 11,171**	**$ 13,565**

Note: Cash Flow Basis in Thousands

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1100000

Site Specific Study

Project Manager: John Motta
Contractor(s): N/A

Location: NBC Receiving Waters
Project Priority: C

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	June-03	June-19	192 Months	$457
Construction	N/A	N/A	N/A	N/A
Total Project	**June-03**	**June-19**	**192 Months**	**$457**

Photo: NBC Staff Collecting Samples

Preliminary work for the Site Specific Study required by NBC's RIPDES permit was completed in FY 2003 and final results were submitted to RIDEM in FY 2004. This study characterized the level of dissolved and total metals in the receiving waters at both Field's Point and Bucklin Point. The data obtained from this study was used for project 1140100, as well as by NBC and RIDEM in the joint development of new discharge permits and consent agreements for both plants. RIDEM is currently developing new RIPDES permits for each WWTF. As a result, new studies may be required as part of the re-permitting process if lower limits are proposed.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 211	**$ -**	**$ 245**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 457**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 16	$ -	$ 234	$ -	$ -	$ -	$ -	$ -	$ 250
Land	-	-	-	-	-	-	-	-	-
A/E Professional	163	-	6	-	-	-	-	-	169
Other	33	-	5	-	-	-	-	-	38
Total	**$ 211**	**$ -**	**$ 245**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 457**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-
Contingency	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Note: Cash Flow Basis in Thousands

1140100

River Model Development

Project Manager: Thomas Uva
Contractor(s): Kincaid Consulting

Location: NBC Receiving Waters
Project Priority: C

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	March-05	June-21	195 Months	$537
Construction	N/A	N/A	N/A	N/A
Total Project	**March-05**	**June-21**	**195 Months**	**$537**

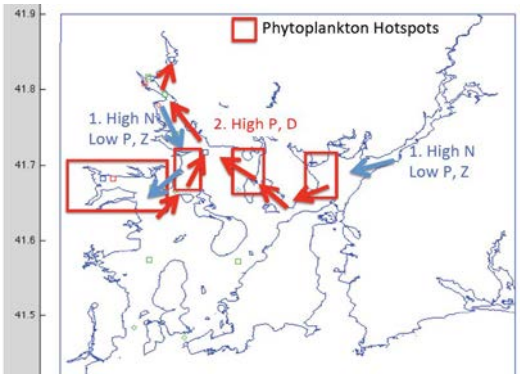


Photo: Map of phytoplankton flow dynamics seen in the ROMS biological model.

NBC has partnered with the University of Rhode Island (URI) Graduate School of Oceanography (GSO) and Kincaid Consulting to develop the Regional Ocean Modeling System (ROMS) for the Providence and Seekonk Rivers and Narragansett Bay. This computer model tracks the circulation and transport of nutrients in the Bay and determines how changing nitrogen loads affect the biology and water quality of the NBC receiving waters and Narragansett Bay. Work on the physical and biological model is ongoing to further improve model predictions and to validate model accuracy, which is necessary for acceptance by stakeholders and regulators.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 322	**$ 80**	**$ 35**	**$ 55**	**$ 45**	**$ -**	**$ -**	**$ -**	**$ 537**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 56	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 56
Land	-	-	-	-	-	-	-	-	-
A/E Professional	228	80	35	35	45	-	-	-	423
Other	38	-	-	20	-	-	-	-	58
Total	**$ 322**	**$ 80**	**$ 35**	**$ 55**	**$ 45**	**$ -**	**$ -**	**$ -**	**$ 537**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-
Contingency	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Note: Cash Flow Basis in Thousands

1140200

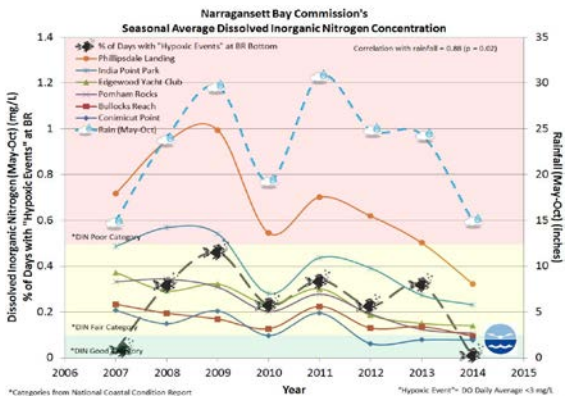
Upper Bay Dissolved Oxygen Evaluation

Project Manager: Thomas Uva
Contractor(s): N/A

Location: NBC Receiving Waters
Project Priority: C

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	July-17	June-18	11 Months	$300
Construction	N/A	N/A	N/A	N/A
Total Project	**July-17**	**June-18**	**11 Months**	**$300**



Project 1140200 is to evaluate the effect of nitrogen reductions on dissolved oxygen levels in upper Narragansett Bay. The project involves the collection of data and the development of a comprehensive report that will assist NBC with information relative to potential permit requirements. This project also entails the engagement of consultants and legal counsel related to permit requirements that would mandate NBC to make additional capital investments.

Photo: Dissolved inorganic nitrogen concentration in the upper bay in relation to amount of low dissolved oxygen events at Bullock's Reach.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	$ 300	$ -	$ -	$ -	$ -	$ -	$ -	$ 300

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	-
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ 150	$ -	$ -	$ -	$ -	$ -	$ -	$ 150
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	150	-	-	-	-	-	-	150
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ 300**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 300**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-
Contingency	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Note: Cash Flow Basis in Thousands

1140300

Greenhouse Gas Study

Project Manager: James McCaughey, P.E.
Contractor(s): University of Rhode Island

Location: Field's Point
Project Priority: C

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	October-14	May-18	43 Months	$77
Construction	N/A	N/A	N/A	N/A
Total Project	**October-14**	**May-18**	**43 Months**	**$77**

Photo: Greenhouse Gas Collection

NBC's Greenhouse Gas Study is designed to quantify NBC's overall carbon footprint by measuring greenhouse gas emissions from wastewater collection and treatment operations. NBC's Greenhouse Gas Study will help NBC to better address potential future regulatory requirements related to greenhouse gas emissions.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 31	**$ 46**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 77**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	-
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 11	$ 6	$ -	$ -	$ -	$ -	$ -	$ -	$ 17
Land	-	-	-	-	-	-	-	-	-
A/E Professional	20	40	-	-	-	-	-	-	60
Other	-	-	-	-	-	-	-	-	-
Total	**$ 31**	**$ 46**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 77**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-
Contingency	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Note: Cash Flow Basis in Thousands

1140500

NBC Energy Sustainability

Project Manager: James McCaughey, P.E.
Contractor(s): Various

Location: Various Locations
Project Priority: C

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	January-16	August-18	31 Months	$85
Construction	N/A	N/A	N/A	N/A
Total Project	**January-16**	**August-18**	**31 Months**	**$85**

Photo: Methods of generating energy

NBC's Energy Sustainability Program is designed to identify, measure, and implement ways of obtaining and using energy in such ways that energy needs of today are met while minimizing environmental impacts and assuring sufficient sources of energy are available to meet future needs. NBC will maximize use of conservation, efficiency, and sustainable renewable energy resources in an economically viable and sound manner.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 42	**$ 34**	**$ 9**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 85**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 28	$ 27	$ 9	$ -	$ -	$ -	$ -	$ -	$ 64
Land	-	-	-	-	-	-	-	-	-
A/E Professional	5	-	-	-	-	-	-	-	5
Other	9	6	-	-	-	-	-	-	15
Total	**$ 42**	**$ 34**	**$ 9**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 85**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-
Contingency	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Note: Cash Flow Basis in Thousands

30438

NBC Interceptor Easement Restoration, AVI

Project Manager: Rich Bernier, P.E.
Contractor(s): Manafort Brother's Inc.

Location: Cumberland, RI
Project Priority: A

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	October-05	April-17	138 Months	$831
Construction	March-16	June-18	26 Months	830
Total Project	**October-05**	**June-18**	**152 Months**	**$1,661**

Photo: Cumberland sewer system easement locations

Much of the NBC sewer system in Cumberland is located in easements that cross private property. This project is to evaluate the Abbott Valley Interceptor easements and clear the easements to provide necessary access under the construction phase of this project to maintain the integrity of the collection system.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 714	**$ 116**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 830**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 300	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 300
Land	84	-	-	-	-	-	-	-	84
A/E Professional	428	-	-	-	-	-	-	-	428
Other	18	-	-	-	-	-	-	-	18
Total	**$ 831**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 831**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 95	$ 27	$ -	$ -	$ -	$ -	$ -	$ -	$ 122
A/E Professional	42	1	-	-	-	-	-	-	43
Construction	533	7	-	-	-	-	-	-	540
Contingency	-	50	-	-	-	-	-	-	50
Other	44	31	-	-	-	-	-	-	75
Total	**$ 714**	**$ 116**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 830**

Note: Cash Flow Basis in Thousands

30500

NBC Interceptor Easements Restoration, Various Locations

Project Manager: Thomas Brueckner, P.E.
Contractor(s): N/A

Location: NBC Service Area
Project Priority: A

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	September-17	November-18	14 Months	$415
Construction	April-19	November-19	7 Months	439
Total Project	**September-17**	**November-19**	**26 Months**	**$854**

Photo: Proposed area for the East Providence easement investigation

This project involves verification of easement locations and clearing the easements in overland areas to ensure sufficient access.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	**$ 220**	**$ 313**	**$ 321**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 854**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ 20	$ 30	$ -	$ -	$ -	$ -	$ -	$ 50
Land	-	-	50	-	-	-	-	-	50
A/E Professional	-	200	100	-	-	-	-	-	300
Other	-	-	15	-	-	-	-	-	15
Total	**$ -**	**$ 220**	**$ 195**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 415**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ 18	$ 20	$ -	$ -	$ -	$ -	$ 38
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	-	100	250	-	-	-	-	350
Contingency	-	-	-	35	-	-	-	-	35
Other	-	-	-	16	-	-	-	-	16
Total	**$ -**	**$ -**	**$ 118**	**$ 321**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 439**

Note: Cash Flow Basis in Thousands

30501

NBC Interceptor Easements Restoration, BVI

Project Manager: Thomas Brueckner, P.E.
Contractor(s): VHB

Location: Cumberland & Lincoln Rhode Island
Project Priority: B

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	July-09	April-18	105 Months	$428
Construction	March-17	October-18	18 Months	971
Total Project	**July-09**	**October-18**	**111 Months**	**$1,399**

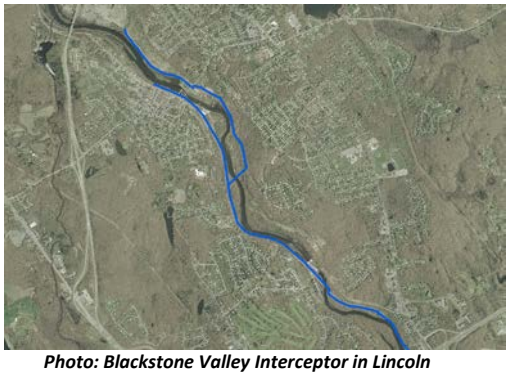


Photo: Blackstone Valley Interceptor in Lincoln

This project involves the location of manholes along the Blackstone Valley Interceptor in Lincoln and Cumberland and verification of NBC easement locations. Once easements are verified, easement clearing will commence as necessary to provide access to maintain the collection system. This project is critical to maintain NBC's infrastructure.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 313	**$ 1,069**	**$ 17**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,399**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 85	$ 30	$ -	$ -	$ -	$ -	$ -	$ -	$ 115
Land	-	10	-	-	-	-	-	-	10
A/E Professional	228	50	-	-	-	-	-	-	278
Other	-	25	-	-	-	-	-	-	25
Total	**$ 313**	**$ 115**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 428**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ 84	$ 2	$ -	$ -	$ -	$ -	$ -	$ 86
A/E Professional	-	46	-	-	-	-	-	-	46
Construction	-	675	15	-	-	-	-	-	690
Contingency	-	150	-	-	-	-	-	-	150
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ 954**	**$ 17**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 971**

Note: Cash Flow Basis in Thousands

30700

NBC System-wide Facilities Planning

Project Manager: Thomas Brueckner, P.E.
Contractor(s): N/A

Location: NBC Service Area
Project Priority: C

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	February-18	August-19	18 Months	$386
Construction	N/A	N/A	N/A	N/A
Total Project	**February-18**	**August-19**	**18 Months**	**$386**

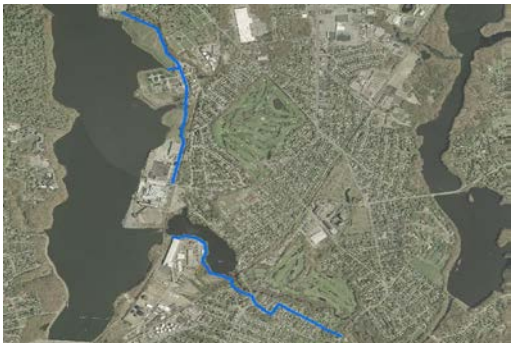


Photo: Proposed area for the East Providence capacity analysis

Project 30700 is to continue NBC's studies to determine if there is adequate capacity for the next twenty years and if there is any excess infiltration/inflow in NBC's interceptors. As the evaluations begin for specific cities and towns, each will be given a unique project number and draw funding from project 30700.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	**$ 49**	**$ 268**	**$ 69**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 386**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ 17	$ 60	$ 5	$ -	$ -	$ -	$ -	$ 82
Land	-				-	-	-	-	-
A/E Professional	-	32	208	34	-	-	-	-	274
Other	-			30	-	-	-	-	30
Total	**$ -**	**$ 49**	**$ 268**	**$ 69**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 386**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-
Contingency	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Note: Cash Flow Basis in Thousands

40100

NBC Facility Electrical Improvements

Project Manager: Thomas Brueckner, P.E.
Contractor(s): N/A

Location: Providence, RI
Project Priority: B

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	May-18	May-19	12 Months	$130
Design	N/A	N/A	N/A	N/A
Construction	N/A	N/A	N/A	N/A
Total Project	**May-18**	**May-19**	**12 Months**	**$130**

Photo: NBC FPWWTF Electrical Facilities

This project is to evaluate NBC's existing electrical equipment and facilities. Upon completion of the evaluation, improvements will be performed as necessary to ensure reliable and continuous operation of NBC's facilities.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	**$ 21**	**$ 109**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 130**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ 3	$ 17	$ -	$ -	$ -	$ -	$ -	$ 20
A/E Professional	-	8	92	-	-	-	-	-	100
Other	-	10	-	-	-	-	-	-	10
Total	**$ -**	**$ 21**	**$ 109**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 130**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-
Contingency	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Note: Cash Flow Basis in Thousands

40101

FPWWTF Facility Electrical Improvements

Project Manager: Thomas Brueckner, P.E.
Contractor(s): N/A

Location: Providence, RI
Project Priority: B

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	May-16	December-18	31 Months	$125
Design	N/A	N/A	N/A	N/A
Construction	N/A	N/A	N/A	N/A
Total Project	May-16	December-18	**31 Months**	**$125**

Photo: Field's Point Electrical Panel

This project is to evaluate and install standby power capabilities for critical facilities at the FPWWTF to maintain uninterrupted facilities operation.

CIP Window Summary

Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
$ 21	**$ 40**	**$ 64**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 125**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 6	$ 20	$ 24	$ -	$ -	$ -	$ -	$ -	$ 50
A/E Professional	-	15	40	-	-	-	-	-	55
Other	15	5	-	-	-	-	-	-	20
Total	**$ 21**	**$ 40**	**$ 64**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 125**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-
Contingency	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Note: Cash Flow Basis in Thousands

40200

NBC System-wide Inflow Reduction Program-Design

Project Manager: Thomas Brueckner, P.E.
Contractor(s): N/A

Location: NBC Service Area
Project Priority: C

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	September-18	January-20	16 Months	$108
Construction	March-20	May-21	14 Months	210
Total Project	**September-18**	**May-21**	**32 Months**	**$318**

Photo: Downspouts at the NBC COB

This project is to develop and implement an inflow reduction program to remove storm water from sanitary sewers in the NBC's service area. This project is imperative to ongoing operation to prevent surcharging of sewers that could cause illegal sanitary sewer overflows in wet weather.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	**$ -**	**$ 53**	**$ 80**	**$ 185**	**$ -**	**$ -**	**$ -**	**$ 318**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ 18	$ 11	$ -	$ -	$ -	$ -	$ 29
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	30	44	-	-	-	-	74
Other	-	-	5	-	-	-	-	-	5
Total	**$ -**	**$ -**	**$ 53**	**$ 55**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 108**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ 12	$ 44	$ -	$ -	$ -	$ 56
A/E Professional	-	-	-	3	11	-	-	-	14
Construction	-	-	-	10	110	-	-	-	120
Contingency	-	-	-	-	10	-	-	-	10
Other	-	-	-	-	10	-	-	-	10
Total	**$ -**	**$ -**	**$ -**	**$ 25**	**$ 185**	**$ -**	**$ -**	**$ -**	**$ 210**

Note: Cash Flow Basis in Thousands

40300

Municipal Sewer Acquisition Impact

Project Manager: Thomas Brueckner, P.E.
Contractor(s): N/A

Location: NBC Service Area
Project Priority: C

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	June-17	April-18	10 Months	$296
Design	N/A	N/A	N/A	N/A
Construction	N/A	N/A	N/A	N/A
Total Project	**June-17**	**April-18**	**10 Months**	**$296**

Photo: Municipal Sewer Manhole Cover

This project is to evaluate the impact of NBC assuming ownership of lateral sewers that are currently owned by municipalities within the NBC service area. This project will be required should legislation be passed by the General Assembly requiring NBC to take over ownership and maintenance of local sewers within the NBC district.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 3	**$ 293**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 296**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 3	$ 33	$ -	$ -	$ -	$ -	$ -	$ -	$ 36
A/E Professional	-	250	-	-	-	-	-	-	250
Other	-	10	-	-	-	-	-	-	10
Total	**$ 3**	**$ 293**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 296**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-
Contingency	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Note: Cash Flow Basis in Thousands

40400

FPWWTF Facilities Plan Update

Project Manager: Thomas Brueckner, P.E.
Contractor(s): CH2M Hill

Location: Providence, RI
Project Priority: A

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	January-17	October-17	9 Months	$255
Design	N/A	N/A	N/A	N/A
Construction	N/A	N/A	N/A	N/A
Total Project	**January-17**	**October-17**	**9 Months**	**$255**

Photo: Aeration Tanks FPWWTF

This project is to update the FPWWTF Facilities Plan and determine the maximum Nitrogen and BOD loads that can be accepted at the facility within RIPDES permit limits.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 155	**$ 100**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 255**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 135	$ 100	$ -	$ -	$ -	$ -	$ -	$ -	$ 235
A/E Professional	20	-	-	-	-	-	-	-	20
Other	-	-	-	-	-	-	-	-	-
Total	**$ 155**	**$ 100**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 255**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-
Contingency	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Note: Cash Flow Basis in Thousands

40500

NBC System-wide RIPDES Flow Monitoring

Project Manager: Meg Goulet, P.E.
Contractor(s): N/A

Location: Field's Point and Bucklin Point
Project Priority: C

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	August-17	September-18	13 Months	$848
Construction	N/A	N/A	N/A	N/A
Total Project	**August-17**	**September-18**	**13 Months**	**$848**

Photo: Floatables Control Facility

This project involves condition assessments of existing flow monitoring equipment located throughout NBC's collection system. An evaluation will be conducted to determine whether the equipment should be upgraded or replaced with an alternate advanced technology in order to provide consistent and accurate monitoring of flow conditions and measurements in accordance with the RIPDES permit. In addition, field services and data analysis will be conducted throughout the collection system.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	$ 629	$ 219	$ -	$ -	$ -	$ -	$ -	$ 848

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ 74	$ 24	$ -	$ -	$ -	$ -	$ -	$ 98
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	555	195	-	-	-	-	-	750
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ 629**	**$ 219**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 848**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-
Contingency	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Note: Cash Flow Basis in Thousands

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30800
CSO Phase III A Facilities

Project Manager: Kathryn Kelly, P.E.
Contractor(s): Stantec Consulting Services

Location: Pawtucket, RI
Project Priority: A

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	April-13	December-21	104 Months	$59,217
Construction	January-22	December-25	47 Months	450,130
Total Project	**April-13**	**December-25**	**152 Months**	**$509,347**

Photo: Proposed Phase III CSO Facilities

Phase III A is to design and construct a deep rock tunnel in Pawtucket approximately 13,000 feet in length along the Seekonk and Blackstone Rivers, a pump station to convey flow to the Bucklin Point WWTF in East Providence, drop shafts and consolidation conduits. In addition, GSI facilities will be constructed to reduce storm water inflow by infiltration of storm water into the ground.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 6,286	**$ 14,727**	**$ 12,965**	**$ 11,119**	**$ 8,164**	**$ 6,076**	**$ 62,670**	**$ 387,340**	**$ 509,347**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 663	$ 225	$ 145	$ 120	$ 190	$ 90	$ -	$ -	$ 1,433
Land	-	2,000	-	-	-	2,000	-	-	4,000
A/E Professional	5,577	11,292	11,520	10,866	7,974	3,866	-	-	51,095
Other	46	1,210	1,300	133	-	-	-	-	2,689
Total	**$ 6,286**	**$ 14,727**	**$ 12,965**	**$ 11,119**	**$ 8,164**	**$ 5,956**	**$ -**	**$ -**	**$ 59,217**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ 120	$ 270	$ 2,340	$ 2,730
A/E Professional	-	-	-	-	-	-	12,000	54,000	66,000
Construction	-	-	-	-	-	-	50,400	308,000	358,400
Contingency	-	-	-	-	-	-	-	23,000	23,000
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 120**	**$ 62,670**	**$ 387,340**	**$ 450,130**

Note: Cash Flow Basis in Thousands

30810
CSO Phase III B Facilities

Project Manager: Kathryn Kelly, P.E.
Contractor(s): N/A

Location:Central Falls, RI
Project Priority: A

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	January-26	December-28	35 Months	$3,305
Construction	January-29	December-30	23 Months	30,217
Total Project	**January-26**	**December-30**	**59 Months**	**$33,522**

Photo: Proposed Phase III CSO Facilities

Phase III B is to design and construct two interceptors at High and Cross Street which will be approximately 4,200 feet in length and one at Middle Street approximately 2,000 feet in length. These interceptors will convey flow to the tunnel to be built in Phase III A. In addition, GSI facilities will be constructed to reduce storm inflow to the combined sewer system, and one sewer separation project will be included as part of Phase III B.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 33,522**	**$ 33,522**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 505	$ 505
Land	-	-	-	-	-	-	-	500	500
A/E Professional	-	-	-	-	-	-	-	2,100	2,100
Other	-	-	-	-	-	-	-	200	200
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,305**	**$ 3,305**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 500	$ 500
A/E Professional	-	-	-	-	-	-	-	4,224	4,224
Construction	-	-	-	-	-	-	-	23,193	23,193
Contingency	-	-	-	-	-	-	-	2,300	2,300
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 30,217**	**$ 30,217**

Note: Cash Flow Basis in Thousands

30820
CSO Phase III C Facilities

Project Manager: Kathryn Kelly, P.E.
Contractor(s): N/A

Location: Pawtucket, RI
Project Priority: A

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	January-31	December-34	47 Months	$13,110
Construction	January-35	December-36	23 Months	153,799
Total Project	**January-31**	**December-36**	**71 Months**	**$166,909**

Photo: Proposed Phase III CSO Facilities

Phase III C is to design and construct a stub tunnel that will convey flow from CSO 220 to the tunnel to be constructed in Phase III A. In addition, GSI facilities will be constructed to reduce storm water inflow to the combined sewers.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 166,909	$ 166,909

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 505	$ 505
Land	-	-	-	-	-	-	-	200	200
A/E Professional	-	-	-	-	-	-	-	11,305	11,305
Other	-	-	-	-	-	-	-	1,100	1,100
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 13,110**	**$ 13,110**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 430	$ 430
A/E Professional	-	-	-	-	-	-	-	18,611	18,611
Construction	-	-	-	-	-	-	-	122,358	122,358
Contingency	-	-	-	-	-	-	-	12,200	12,200
Other	-	-	-	-	-	-	-	200	200
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 153,799**	**$ 153,799**

Note: Cash Flow Basis in Thousands

30830
CSO Phase III D Facilities

Project Manager: Kathryn Kelly, P.E.
Contractor(s): N/A

Location: Providence, RI
Project Priority: A

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	January-37	December-39	35 Months	$7,083
Construction	January-40	December-41	23 Months	78,294
Total Project	**January-37**	**December-41**	**59 Months**	**$85,377**

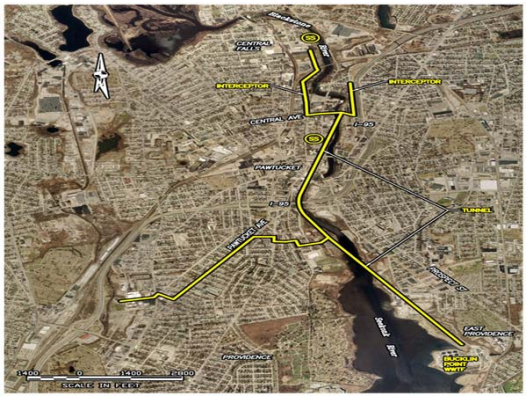

Photo: Proposed Phase III CSO Facilities

Phase III D is to design and construct an interceptor that will store flow during a storm and later release the flow into the system as capacity allows. In addition, GSI facilities will be constructed to reduce storm water inflow to the combined sewer system.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 85,377**	**$ 85,377**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 575	$ 575
Land	-	-	-	-	-	-	-	200	200
A/E Professional	-	-	-	-	-	-	-	5,735	5,735
Other	-	-	-	-	-	-	-	573	573
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 7,083**	**$ 7,083**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 500	$ 500
A/E Professional	-	-	-	-	-	-	-	9,484	9,484
Construction	-	-	-	-	-	-	-	62,100	62,100
Contingency	-	-	-	-	-	-	-	6,210	6,210
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 78,294**	**$ 78,294**

Note: Cash Flow Basis in Thousands

304 M Summary

Interceptor Inspection and Cleaning

Project Manager: Meg Goulet, P.E.
Contractor(s): Various

Location: NBC Service Area
Project Priority: B

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	N/A	N/A	N/A	N/A
Inspection and Cleaning	July-09	Ongoing	Ongoing	$3,713
Total Project	**July-09**	**Ongoing**	**Ongoing**	**$3,713**

Photo: End of North Outfall Pipe

The 304 M projects continue NBC's program to clean and inspect NBC interceptors as needed. The TV inspections assist in determining pipe conditions and developing solutions to any problems which may be identified. Based on completed inspections to date, the cleaning is needed to remove accumulated grit. As new inspection and cleaning projects are identified, they will be given a unique project number and draw funding from the funds available in Project 30400M.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 213	**$ 500**	**$ 500**	**$ 500**	**$ 500**	**$ 500**	**$ 500**	**$ 500**	**$ 3,713**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 23	$ 52	$ 55	$ 55	$ 55	$ 55	$ 55	$ 55	$ 405
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	160	370	370	370	370	370	370	370	2,750
Contingency	-	-	-	-	-	-	-	-	-
Other	30	78	75	75	75	75	75	75	558
Total	**$ 213**	**$ 500**	**$ 500**	**$ 500**	**$ 500**	**$ 500**	**$ 500**	**$ 500**	**$ 3,713**

Note: Cash Flow Basis in Thousands

30400C

Interceptor Restoration and Construction

Project Manager: Rich Bernier, P.E.
Contractor(s): Various

Location: NBC Service Area
Project Priority: B

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	N/A	N/A	N/A	N/A
Construction	July-01	Ongoing	Ongoing	$6,000
Total Project	**July-01**	**Ongoing**	**Ongoing**	**$6,000**

Photo: Proposed portion of Lincoln Interceptor Replacement

Project 30400C reflects funding of potential restoration and construction resulting from NBC's inspection and cleaning projects and emergency situations. Interceptor restoration and construction projects result from such issues as root intrusion, structural damage, odor control, aging infrastructure, inaccessible structures, pipe damage and emergency situations. As new repair and construction projects are identified, they are given a unique project number and draw funding from the funds available in Project 30400C.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	**$ -**	**$ -**	**$ -**	**$ 1,500**	**$ 1,500**	**$ 1,500**	**$ 1,500**	**$ 6,000**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ 75	$ 75	$ 75	$ 75	$ 300
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	1,250	1,250	1,250	1,250	5,000
Contingency	-	-	-	-	150	150	150	150	600
Other	-	-	-	-	25	25	25	25	100
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,500**	**$ 1,500**	**$ 1,500**	**$ 1,500**	**$ 6,000**

Note: Cash Flow Basis in Thousands

30421

Louisquisset Pike Interceptor Improvements

Project Manager: Thomas Brueckner, P.E.
Contractor(s): N/A

Location: Lincoln, RI
Project Priority: C

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	May-07	May-09	23 Months	$178
Construction	March-18	November-19	20 Months	4,044
Total Project	**May-07**	**November-19**	**149 Months**	**$4,222**

Photo: Lincoln Interceptor Replacement Location

This project is to design and construct a larger diameter interceptor in the Northern section of the Town of Lincoln. The larger capacity pipe will accommodate the additional flow resulting from expected development.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	**$ 279**	**$ 3,490**	**$ 275**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 4,044**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 23	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 23
Land	-	-	-	-	-	-	-	-	-
A/E Professional	155	-	-	-	-	-	-	-	155
Other	-	-	-	-	-	-	-	-	-
Total	**$ 178**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 178**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ 20	$ 96	$ 25	$ -	$ -	$ -	$ -	$ 141
A/E Professional	-	9	44	-	-	-	-	-	53
Construction	-	250	3,000	250	-	-	-	-	3,500
Contingency	-	-	350	-	-	-	-	-	350
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ 279**	**$ 3,490**	**$ 275**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 4,044**

Note: Cash Flow Basis in Thousands

30444

Mosshassuck Valley Interceptor

Project Manager: Thomas Brueckner, P.E.
Contractor(s): N/A

Location: Central Falls
Project Priority: B

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	May-06	October-06	5 Months	$22
Design	January-12	July-17	66 Months	504
Construction	March-18	December-19	21 Months	6,531
Total Project	**May-06**	**December-19**	**163 Months**	**$7,057**

Photo: Portion of the Moshassuck Valley Interceptor to be replaced

An inspection of the Moshassuck Valley Interceptor from Higginson Street in Central Falls to Lockbridge Street in Pawtucket revealed that this line has sunk from its original grade at numerous points, by as much as 2.5 feet. This project is to design and construct a new sewer to replace the existing sewer.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 22	Post FY 23	Total
	$ 491	**$ 33**	**$ 3,997**	**$ 2,514**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 7,035**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 22	Post FY 23	Total
Administrative	$ 2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2
A/E Professional	20	-	-	-	-	-	-	-	20
Other	-	-	-	-	-	-	-	-	-
Total	**$ 22**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 22**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 22	Post FY 23	Total
Administrative	$ 72	$ 6	$ -	$ -	$ -	$ -	$ -	$ -	$ 78
Land	95	-	-	-	-	-	-	-	95
A/E Professional	317	7	-	-	-	-	-	-	324
Other	7	-	-	-	-	-	-	-	7
Total	**$ 491**	**$ 13**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 504**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 22	Post FY 23	Total
Administrative	$ -	$ 14	$ 63	$ 22	$ -	$ -	$ -	$ -	$ 99
A/E Professional	-	6	24	12	-	-	-	-	42
Construction	-	-	3,900	1,900	-	-	-	-	5,800
Contingency	-	-	-	580	-	-	-	-	580
Other	-	-	10		-	-	-	-	10
Total	**$ -**	**$ 20**	**$ 3,997**	**$ 2,514**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 6,531**

Note: Cash Flow Basis in Thousands

30457

Providence River Siphon

Project Manager: Thomas Brueckner, P.E.
Contractor: Stantec Consulting Services

Location: Providence, RI
Project Priority: B

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	March-13	May-15	26 Months	$228
Design	July-15	December-17	29 Months	414
Construction	January-18	July-19	18 Months	6,139
Total Project	**March-13**	**July-19**	**76 Months**	**$6,781**

Photo: Siphon Outlet Chamber

During the planning phase of this project, it was determined that the existing Providence River siphon was in good condition but that a section of the 78" interceptor needed to be replaced and that the inlet and outlet siphon chambers needed repair. These deficiencies will be corrected in the design and construction phases.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 362	**$ 89**	**$ 5,134**	**$ 967**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 6,553**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 100	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 100
A/E Professional	123	-	-	-	-	-	-	-	123
Other	5	-	-	-	-	-	-	-	5
Total	**$ 228**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 228**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 112	$ 12	$ -	$ -	$ -	$ -	$ -	$ -	$ 124
Land	-	21	-	-	-	-	-	-	21
A/E Professional	251	18	-	-	-	-	-	-	269
Other	-	-	-	-	-	-	-	-	-
Total	**$ 362**	**$ 51**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 414**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ 20	$ 48	$ 4	$ -	$ -	$ -	$ -	$ 72
A/E Professional	-	18	36	3	-	-	-	-	57
Construction	-	-	5,000	400	-	-	-	-	5,400
Contingency	-	-	-	560	-	-	-	-	560
Other	-	-	50	-	-	-	-	-	50
Total	**$ -**	**$ 38**	**$ 5,134**	**$ 967**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 6,139**

Note: Cash Flow Basis in Thousands

30460

Johnston Sewer Improvements/Greenville Avenue

Project Manager: Rich Bernier, P.E.
Contractor(s): DiGregorio, Inc.

Location: Johnston, RI
Project Priority: A

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	May-16	September-17	16 Months	$410
Construction	February-17	April-18	13 Months	8,915
Total Project	**May-16**	**April-18**	**23 Months**	**$9,325**

Photo: Construction on Greenville Avenue

The Facilities Plan for Johnston has been completed and approved by RIDEM. The plan recommended that sewers in the Town be expanded to accommodate future development in the Town. This project is to design and construct the first of these proposed improvements. This project involves the installation of approximately 6,750 linear foot of 12" pipe in Greenville Avenue from Salina Rd. to west of Rt. 295.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 1,304	**$ 8,022**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 9,325**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 119	$ 27	$ -	$ -	$ -	$ -	$ -	$ -	$ 145
Land	50	-	-	-	-	-	-	-	50
A/E Professional	210	-	-	-	-	-	-	-	210
Other	5	-	-	-	-	-	-	-	5
Total	**$ 384**	**$ 27**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 410**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 80	$ 255	$ -	$ -	$ -	$ -	$ -	$ -	$ 335
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	840	6,990	-	-	-	-	-	-	7,830
Contingency	-	750	-	-	-	-	-	-	750
Other	-	-	-	-	-	-	-	-	-
Total	**$ 920**	**$ 7,995**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 8,915**

Note: Cash Flow Basis in Thousands

30463

Improvements to Interceptors FY 2017

Project Manager: Rich Bernier, P.E.
Contractor(s): R. Zoppo Corp.

Location: Throughout The System
Project Priority: A

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	N/A	N/A	N/A	N/A
Construction	April-17	December-18	19 Months	$1,571
Total Project	**April-17**	**December-18**	**19 Months**	**$1,571**

Photo: Conducting Sewer System Repairs

This project is to correct various deficiencies throughout the sewer system in Providence, Central Falls and Cumberland such as sewer lining, point repairs to sewers, install hatches for better access to structures, abandonment of an outfall pipe, and rehabilitation to leaking manholes.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ 245	**$ 1,315**	**$ 11**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,571**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land	-	-	-	-	-	-	-	-	-
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 79	$ 175	$ 8	$ -	$ -	$ -	$ -	$ -	$ 262
A/E Professional	-	-	-	-	-	-	-	-	-
Construction	166	598	3	-	-	-	-	-	767
Contingency	-	442	-	-	-	-	-	-	442
Other	-	100	-	-	-	-	-	-	100
Total	**$ 245**	**$ 1,315**	**$ 11**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,571**

Note: Cash Flow Basis in Thousands

30464

Johnston Sewer Improvements/Hartford Avenue

Project Manager: Tom Brueckner, P.E.
Contractor(s): PARE Corporation

Location: Johnston, RI
Project Priority: B

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	February-17	June-17	4 Months	$248
Construction	June-17	October-17	4 Months	2,429
Total Project	**February-17**	**October-17**	**8 Months**	**$2,677**

Photo: Aerial View Hartford Avenue in Johnston

This project is to extend the Hartford Avenue sewer approximately 5,400 feet to the area west of Route 295 to enable development within the Town of Johnston.

CIP Window Summary

Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
$ 17	**$ 2,412**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,429**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 55	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 55
Land	-	-	-	-	-	-	-	-	-
A/E Professional	189	-	-	-	-	-	-	-	189
Other	4	-	-	-	-	-	-	-	4
Total	**$ 248**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 248**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ 17	$ 105	$ -	$ -	$ -	$ -	$ -	$ -	$ 122
A/E Professional		-	-	-	-	-	-	-	-
Construction	-	1,900	-	-	-	-	-	-	1,900
Contingency	-	402	-	-	-	-	-	-	402
Other	-	5	-	-	-	-	-	-	5
Total	**$ 17**	**$ 2,412**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,429**

Note: Cash Flow Basis in Thousands

30465

Field's Point Drive Interceptor Improvements

Project Manager: Tom Brueckner, P.E.
Contractor(s): N/A

Location: Providence, RI
Project Priority: B

Total Project Duration/Cost

Project Phase	Start Date	Completion Date	Project Duration	Cost (in Thousands)
Planning	N/A	N/A	N/A	N/A
Design	September-17	April-18	6 Months	$177
Construction	July-18	May-19	9 Months	760
Total Project	**September-17**	**May-19**	**19 Months**	**$937**

Photo: Field's Point Drive

The Field's Point Drive sewer has collapsed in one location and in several other locations the pipe is broken and will need to be repaired. In other locations the pipe is cracked and will need to be lined. These measures will restore the sewer to its original capacity.

CIP Window Summary	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
	$ -	**$ 177**	**$ 760**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 937**

Projected Expenditures - Planning

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A/E Professional	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Projected Expenditures - Design

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ 27	$ -	$ -	$ -	$ -	$ -	$ -	$ 27
Land	-	10	-	-	-	-	-	-	10
A/E Professional	-	100	-	-	-	-	-	-	100
Other	-	40	-	-	-	-	-	-	40
Total	**$ -**	**$ 177**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 177**

Projected Expenditures - Construction

Cost Category	Pre FY 18	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	Post FY 23	Total
Administrative	$ -	$ -	$ 68	$ -	$ -	$ -	$ -	$ -	$ 68
A/E Professional	-	-	22	-	-	-	-	-	22
Construction	-	-	600	-	-	-	-	-	600
Contingency	-	-	60	-	-	-	-	-	60
Other	-	-	10	-	-	-	-	-	10
Total	**$ -**	**$ -**	**$ 760**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 760**

Note: Cash Flow Basis in Thousands

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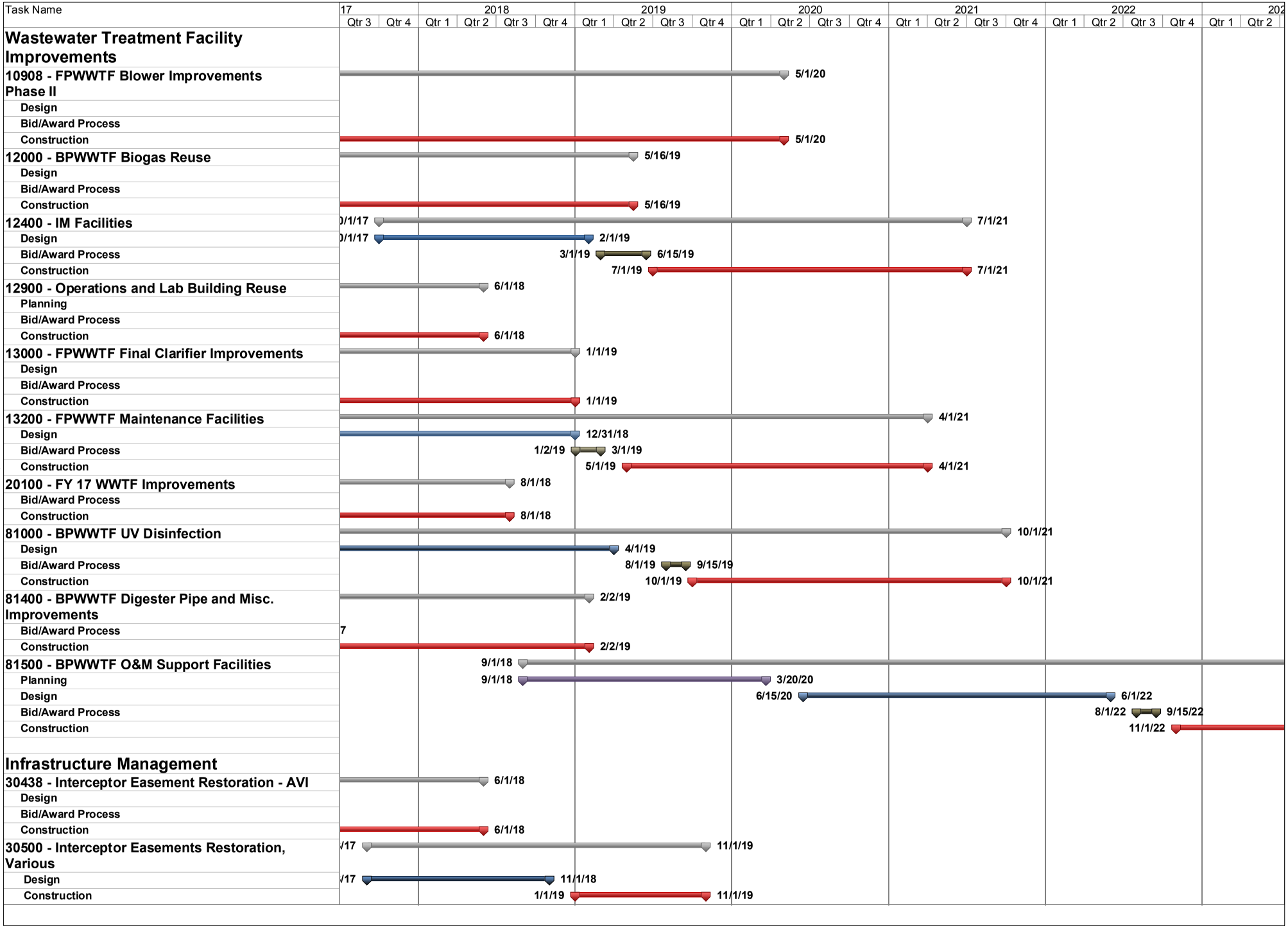
Capital Improvement Program

Timeline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17
2018
2019
2020
2021
2022
202
Qtr 3
Qtr 4
Qtr 1
Qtr 2
Qtr 3
Qtr 4
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Qtr 2
Qtr 3
Qtr 4
Qtr 1
Qtr 2
Qtr 3
Qtr 4
Qtr 1
Qtr 2
Qtr 3
Qtr 4
Qtr 1
Qtr 2
Qtr 3
Qtr 4
Qtr 1
Qtr 2
Wastewater Treatment Facility Improvements
10908 - FPWWTF Blower Improvements Phase II
5/1/20
Design
Bid/Award Process
Construction
5/1/20
12000 - BPWWTF Biogas Reuse
5/16/19
Design
Bid/Award Process
Construction
5/16/19
12400 - IM Facilities
0/1/17
7/1/21
Design
0/1/17
2/1/19
Bid/Award Process
3/1/19
6/15/19
Construction
7/1/19
7/1/21
12900 - Operations and Lab Building Reuse
6/1/18
Planning
Bid/Award Process
Construction
6/1/18
13000 - FPWWTF Final Clarifier Improvements
1/1/19
Design
Bid/Award Process
Construction
1/1/19
13200 - FPWWTF Maintenance Facilities
4/1/21
Design
12/31/18
Bid/Award Process
1/2/19
3/1/19
Construction
5/1/19
4/1/21
20100 - FY 17 WWTF Improvements
8/1/18
Bid/Award Process
Construction
8/1/18
81000 - BPWWTF UV Disinfection
10/1/21
Design
4/1/19
Bid/Award Process
8/1/19
9/15/19
Construction
10/1/19
10/1/21
81400 - BPWWTF Digester Pipe and Misc. Improvements
2/2/19
Bid/Award Process
7
Construction
2/2/19
81500 - BPWWTF O&M Support Facilities
9/1/18
Planning
9/1/18
3/20/20
Design
6/15/20
6/1/22
Bid/Award Process
8/1/22
9/15/22
Construction
11/1/22
Infrastructure Management
30438 - Interceptor Easement Restoration - AVI
6/1/18
Design
Bid/Award Process
Construction
6/1/18
30500 - Interceptor Easements Restoration, Various
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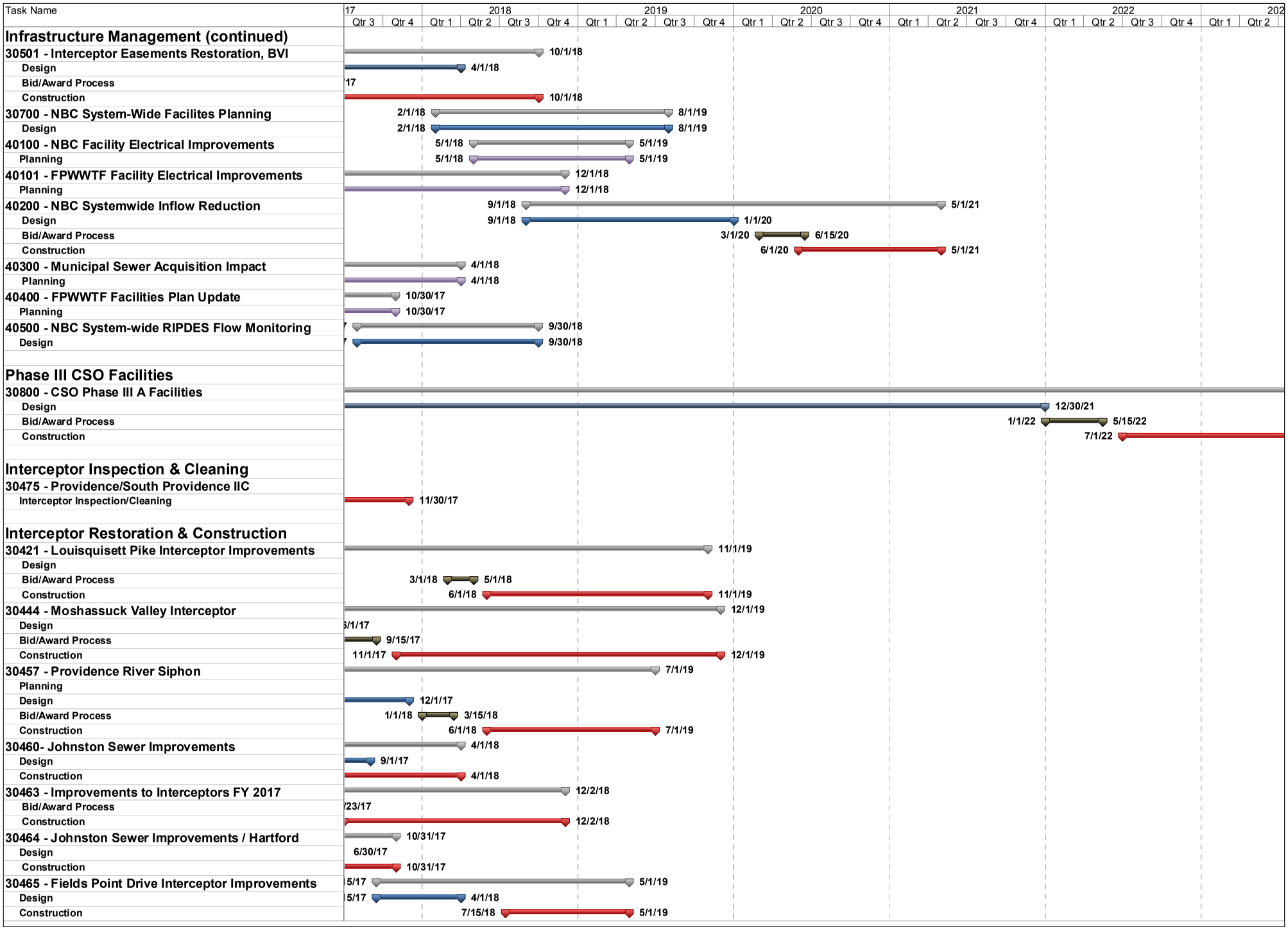
11/1/19
Design
/17
11/1/18
Construction
1/1/19
11/1/19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2018
2019
2020
2021
2022
202
Qtr 3
Qtr 4
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Qtr 3
Qtr 4
Qtr 1
Qtr 2
Qtr 3
Qtr 4
Qtr 1
Qtr 2
Qtr 3
Qtr 4
Qtr 1
Qtr 2
Qtr 3
Qtr 4
Qtr 1
Qtr 2
Infrastructure Management (continued)
30501 - Interceptor Easements Restoration, BVI
10/1/18
Design
4/1/18
Bid/Award Process
17
Construction
10/1/18
30700 - NBC System-Wide Facilites Planning
2/1/18
8/1/19
Design
2/1/18
8/1/19
40100 - NBC Facility Electrical Improvements
5/1/18
5/1/19
Planning
5/1/18
5/1/19
40101 - FPWWTF Facility Electrical Improvements
12/1/18
Planning
12/1/18
40200 - NBC Systemwide Inflow Reduction
9/1/18
5/1/21
Design
9/1/18
1/1/20
Bid/Award Process
3/1/20
6/15/20
Construction
6/1/20
5/1/21
40300 - Municipal Sewer Acquisition Impact
4/1/18
Planning
4/1/18
40400 - FPWWTF Facilities Plan Update
10/30/17
Planning
10/30/17
40500 - NBC System-wide RIPDES Flow Monitoring
9/30/18
Design
9/30/18
Phase III CSO Facilities
30800 - CSO Phase III A Facilities
Design
12/30/21
Bid/Award Process
1/1/22
5/15/22
Construction
7/1/22
Interceptor Inspection & Cleaning
30475 - Providence/South Providence IIC
Interceptor Inspection/Cleaning
11/30/17
Interceptor Restoration & Construction
30421 - Louisquisett Pike Interceptor Improvements
11/1/19
Design
Bid/Award Process
3/1/18
5/1/18
Construction
6/1/18
11/1/19
30444 - Moshassuck Valley Interceptor
12/1/19
Design
6/1/17
Bid/Award Process
9/15/17
Construction
11/1/17
12/1/19
30457 - Providence River Siphon
7/1/19
Planning
Design
12/1/17
Bid/Award Process
1/1/18
3/15/18
Construction
6/1/18
7/1/19
30460- Johnston Sewer Improvements
4/1/18
Design
9/1/17
Construction
4/1/18
30463 - Improvements to Interceptors FY 2017
12/2/18
Bid/Award Process
23/17
Construction
12/2/18
30464 - Johnston Sewer Improvements / Hartford
10/31/17
Design
6/30/17
Construction
10/31/17
30465 - Fields Point Drive Interceptor Improvements
5/17
5/1/19
Design
5/17
4/1/18
Construction
7/15/18
5/1/19