Boat Harbor Treatment Plant

Photo Credit: VDOT









System:	Boat Harbor
Туре:	Pump Stations

Driver Category: Capacity Improvements Project Phase: Construction Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$17,134	\$11,431	\$5,697	\$6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project includes the replacement of the Willard Avenue Pump Station (PS) to address conditional issues. The proposed replacement will include a relocated pump station and new gravity and force main connections to the existing systems.

PROJECT JUSTIFICATION

This project will improve pump station capacity for the service area and reduce operation and maintenance demands. The existing Willard Avenue Pump Station is located at 219 National Avenue in Hampton, Virginia. The Station serves portions of Buckroe, Woodland and Phoebus including Fort Monroe and receives flow from multiple City Pump Stations and the HRSD Bay Shore Lane Pump Station. Flows can be diverted from the York River WWTP collection system to the Willard Avenue Pump Station through a valved connection at the HRSD Woodland Road Pump Station. The station discharges flows through a 30-inch force main to a gravity sever manhole in downtown Hampton. A new force main is planned to realign the Hampton Trunk Sewer Extension Divisions I & J Phase II to remove the pipeline from the Hampton University campus. A new pump station will accommodate a wide range of wet weather flows as well as offer operational flexibility during dry weather periods. The following items are justification for completing this project: The existing pump station was constructed in 1944 and is nearing the end of its anticipated useful life. The existing pump station parcel is only 0.14 acres, which does not allow for any expansion and does not meet our current parcel size standards for a new pump station site. Furthermore, building a new pump station at this location will be challenging given the close proximity to residents. HRSD will need to acquire a new parcel in the vicinity of the existing PS to build a new one. Upon completion of the new PS, the existing PS will be demolished and the parcel transferred or sold.

FUNDING TYPE		CONTACTS	
Funding Type:	VCWRLF	Contacts-Requesting Dept Contacts-Dept Contacts: Contacts-Managing Dept:	: Operations-Interceptors Ted Denny Engineering
PROPOSED SC	HEDULE START DATE	COST ESTIMATE	
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction Closeout	01/01/2019 05/01/2019 09/16/2019 09/16/2019 02/25/2022 02/25/2022 07/07/2022 01/01/2025	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction Closeout Est. Program Cost Contingency Budget	Class 1 \$2,030 \$102,410 \$1,340,844 \$13,390 \$15,660,000 \$15,000 \$17,133,674 \$800,000
		Est. Project Costs	\$17,933,674





System:	Boat Harbo
Туре:	Pipelines

Hampton Trunk Sewer Extension Divisions I and J Relocation Phase II

Driver Category: Relocation Project Phase: Construction Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$17,232	\$16,143	\$1,088	\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project includes the replacement of 7,500 linear feet (LF) of 30-inch force main (FM) from the new Willard Avenue Pump Station (PS) with 6,800 LF of new 24inch FM. The new force main will originate from the new Willard Avenue PS to the connection at E. Queen Street and Eaton Street. The location of the new Willard Avenue PS is still pending and may impact the alignment of the FM. The following ancillary work will be required as part of this project: A 600 LF extension of the 10inch FM from City of Hampton PS 003; A 1,000 LF relocation of the 4-inch FM from the privately owned Hampton Harbor PS; Conveyance of Hampton University PS (Sta. #211) to Hampton University or the Veteran Affairs Medical Center.

PROJECT JUSTIFICATION

In combination with CIP BH014210, this project will address critical areas within the City of Hampton with significant wet weather capacity issues as identified in the Hampton Study completed by Brown and Caldwell (BC). The Hampton Study was a collaborative effort between BC, the City of Hampton and HRSD to identify, evaluate, and select the preferred alternatives to address the identified capacity issues. The existing Willard Avenue PS 30-inch discharge FM was originally installed in the 1945-46 timeframe, with a portion of the main relocated in 1956 as part of the Interstate-64 (I-64) project. Given the age of this line, the documented failure near the I-64 sound wall, limited diversion options, its depth in the vicinity of the interstate off ramp, and Hampton Universitys request for HRSD to abandon this pipe, replacement is necessary.

FUNDING TYPE		CONTACTS	
Funding Type:	VCWRLF	Contacts-Requesting Dept: Contacts-Dept Contacts: Contacts-Managing Dept:	Operations-Interceptors Ted Denny Engineering
PROPOSED SCHED	ULE START DATE	COST ESTIMATE	

PrePlanning	05/01/2015	Cost Estimate Class:	Class 1
PER	01/11/2016	PrePlanning	\$1,462
Design Delay	05/31/2018	PER	\$85,020
Design	06/26/2018	Design	\$1,000,131
Bid Delay	11/05/2021	PreConstruction	\$29,242
PreConstruction	11/12/2021	Construction	\$15,859,380
Construction	01/25/2022	Closeout	\$15,000
Closeout	10/01/2024	Est. Program Cost	\$16,990,235
		Contingency Budget	\$400,000
		Est Project Costs	\$17 390 235





System: Boat Harbor Type: Pipelines PR_BH014600

E F

Driver Category:I&I Abatement-Rehabilitation PlanProject Phase:ConstructionRegulatory:Rehab Plan Phase Two

PROGRAM CASH FLOW PROJECTION (\$,000)

	Exp to										
Prog Cost	Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
¢11 404	¢11.057	¢146	61	¢0,	¢	¢o	¢٥	¢o	¢o	¢0	¢o
\$11,404	\$11,257	\$146	\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$U	\$0

PROJECT DESCRIPTION

This project will involve the rehabilitation and/or replacement of the main sanitary sewer trunk line on Newport News Shipbuilding property. The timing of these infrastructure improvements will need to be sequenced with the Newport News Shippard (NNS) in accordance with an agreement to be drafted and executed prior to the construction phase. This project will include the installation of a new main sanitary sewer trunk line in the City right-of-way outside of NNS property, which will divert public flow from the sewer trunk line on NNS property.

PROJECT JUSTIFICATION

This project will address long standing conditional, access, encroachment, and jurisdictional issues related to the James River Diversion Sewer - 46th Street constructed in 1945 under the Federal Works Agency, Docket No. VA 44-264. Responsibility for maintenance and operation was assigned to HRSD in 1950 with an expiration of responsibilities in 1979 according to the easement granted to the United States of America by the City of Newport News and subsequently assigned to HRSD. Upon expiration of the easement in 1979, responsibility for maintenance and operation of the gravity line has been in question. Prior to a complete Condition Assessment report prepared by Whitman, Requardt and Associates (WRA) in June 2011, several studies of the existing system have been prepared by consultants hired by Newport News Shipyard, all detailing limited system capacity, numerous deficiencies and missing infrastructure related to building/storage area construction.

FUNDING TYPE		CONTACTS	
Funding Type:	Revenue Bond	Contacts-Requesting Dept: Contacts-Dept Contacts: Contacts-Managing Dept:	Operations-Interceptors Ted Denny Engineering
PROPOSED SCH	HEDULE START DATE	COST ESTIMATE	
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction Closeout	01/02/2017 01/30/2017 05/09/2019 05/13/2019 03/31/2022 03/31/2022 06/28/2022 08/01/2024	Cost Estimate Class:PrePlanningPERDesignPreConstructionConstructionCloseoutEst. Program CostContingency BudgetEst. Project Costs	Class 1 \$1,626 \$298,022 \$1,071,860 \$17,420 \$10,000,000 \$15,000 \$11,403,927 \$500,000 \$11,903,927





System:	Boat Harbor
Туре:	Pipelines

46th Street Diversion Sewer Rehabilitation Replacement, HII-NNS

PR_BH014610

Driver Category: Aging Infrastructure/Rehabilitation Construction Project Phase: Rehab Plan Phase Two Regulatory:

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$3,700	\$1,769	\$1,931	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project involves the rehabilitation and/or replacement of the main sanitary sewer trunk line on Huntingon Ingalls Industries-Newport News Shipbuilding (HII-NNS) property. It will be bid out and managed by HII-NNS and will not be funded using VCWRLF. This portion of the work is being split from CIP BH014600.

PROJECT JUSTIFICATION

This project will address long standing conditional, access, encroachment and jurisdictional issues related to the James River Diversion Sewer. Splitting this portion of the work from CIP BH014600 will allow HII-NNS to bid out the project using their process and contractors and will allow BH014600 to be bid out and start construction sooner. Upon completion, this portion of the work will be owned and operated by HII-NNS.

FUNDING TYPE		CONTACTS	
Funding Type:	Cash	Contacts-Requesting Dept: Contacts-Dept Contacts: Contacts-Managing Dept:	Engineering Ted Denny Engineering
PROPOSED SC	HEDULE START DATE	COST ESTIMATE	
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction Closeout	04/23/2019 06/11/2019 02/17/2020 03/31/2022 03/31/2022 11/23/2022 12/11/2023	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction <u>Closeout</u> Est. Program Cost <u>Contingency Budget</u> Est. Project Costs	Class 1 \$0 \$0 \$0 \$3,700,000 \$33,700,000 \$330,000





System:	Boat Harbor
Type:	Pipelines

Hampton Trunk Sewer Extension Division K Gravity Improvements

PR_BH014900

Driver Category:I&I Abatement-Rehabilitation PlanProject Phase:ConstructionRegulatory:Rehab Plan Phase Two

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$2,307	\$1,278	\$1,024	\$6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project is to rehabilitate and/or replace 3,700 linear feet of 30-inch diameter gravity pipeline with associated manholes. Project extends from MH-NG-160-25773 to NS-PS-225-1. In addition, a point repair is required between MH-NG-160-26350 and MH-NG-160-26040.

PROJECT JUSTIFICATION

Condition assessment activities indicate that these assets present a material risk of failure due to I/I.

FUNDING TYPE		CONTACTS	
Funding Type:	VCWRLF	Contacts-Requesting Dept: Contacts-Dept Contacts: Contacts-Managing Dept:	Operations-Interceptors Ted Denny Engineering
PROPOSED SCI	HEDULE START DATE	COST ESTIMATE	
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction Closeout	04/01/2019 04/29/2019 05/01/2020 05/01/2020 02/25/2022 02/25/2022 05/24/2022 01/01/2025	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction Closeout Est. Program Cost Contingency Budget Est. Project Costs	Class 1 \$0 \$106,419 \$285,731 \$0 \$1,900,000 \$15,000 \$2,307,150 \$100,000 \$2,407,150







System: Boat Harbor Type: SWIFT PR_BH015700

Driver Category:Nutrient ReductionProject Phase:ConstructionRegulatory:Integrated Plan-SWIFT

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$177,403	\$67,217	\$75,220	\$31,333	\$3,633	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

The Boat Harbor Treatment Plant will be converted to a pumping station, including equalization and headworks facilities while remaining in operation for wastewater treatment during conversion. The new infrastructure will be designed to meet HRSDs resiliency standards and consider remote operation and access in future conditions including sea level rise.

PROJECT JUSTIFICATION

The James River Waste Load Allocation (WLA) requires HRSD to continue reducing the mass of nutrients discharged from associated treatment plant outfalls. The planned reduction of nutrients is largely completed through implementation of the SWIFT program. The SWIFT master planning effort has determined that advanced water treatment and injection at Boat Harbor has significant physical limitations including site availability and resiliency to sea level rise. In addition, a financial analysis indicates there is significant long term cost savings associated with consolidating wastewater treatment and SWIFT facilities at Nansemond Treatment Plant. This project will allow HRSD to further reduce the amount of nutrients contributed to the James River basin. Upgrades to Nansemond Treatment Plant to accommodate the additional flow will be completed under a separate capital project.

FUNDING TYPE		CONTACTS	
Funding Type:	WIFIA	Contacts-Requesting Dept: En Contacts-Dept Contacts: Da Contacts-Managing Dept: En	gineering vid Steele gineering
PROPOSED SCH	HEDULE START DATE	COST ESTIMATE	
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction Closeout	05/01/2020 10/27/2020 08/05/2021 08/05/2021 06/20/2023 12/21/2022 05/15/2023 12/31/2026	Cost Estimate Class:CIPrePlanning\$96PER\$1,13Design\$5,15PreConstruction\$14Construction\$170,00Closeout\$170,00Est. Program Cost\$177,40Contingency Budget\$61,25Est. Project Costs\$238,65	ass 1 34,658 56,499 47,527 00,000 \$0 13,214 55,652 58,866





System:	Boat Harbor
Туре:	SWIFT

Boat Harbor Treatment Plant Transmission Force Main Section 1 (Subaqueous)

PR_BH015710

Driver Category: Nutrient Reduction Project Phase: Construction

Regulatory:

Integrated Plan-SWIFT

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$143,075	\$78,703	\$63,794	\$578	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

The project consists of the subaqueous crossing of the James River to convey flow to the Nansemond Treatment Plant. This project is anticipated to be delivered by the design-build procurement method due to the unique construction techniques required and coordination of construction schedule and permit requirements.

PROJECT JUSTIFICATION

The James River Waste Load Allocation (WLA) requires HRSD to continue reducing the mass of nutrients discharged from associated treatment plant outfalls. The planned reduction of nutrients is largely completed through implementation of the SWIFT program. The SWIFT master planning effort has determined that advanced water treatment and injection at Boat Harbor has significant physical limitations including site availability and resiliency to sea level rise. In addition, a financial analysis indicates there is significant long term cost savings associated with consolidating wastewater treatment and SWIFT facilities at Nansemond Treatment Plant. This project will allow HRSD to further reduce the amount of nutrients contributed to the James River basin. Upgrades to Nansemond Treatment Plant to accommodate the additional flow will be completed under a separate capital project.

FUNDING TYPE		CONTACTS	
Funding Type:	WIFIA	Contacts-Requesting De Contacts-Dept Contacts: Contacts-Managing Dept	pt: Engineering David Steele t: Engineering
PROPOSED SC	HEDULE START DATE	COST ESTIMATE	
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction Closeout	05/01/2020 10/27/2020 08/10/2021 05/03/2021 04/26/2022 05/03/2021 02/01/2023 07/31/2025	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction <u>Closeout</u> Est. Program Cost <u>Contingency Budget</u>	Class 1 \$0 \$1,237,536 \$8,215,283 \$467,931 \$133,154,442 \$0 \$143,075,192 \$22,148,333
		Est. Project Costs	\$165,223,525





System:	Boat Harbor
Туре:	SWIFT

Boat Harbor Treatment Plant Transmission Force Main Section 2 (Land)

PR_BH015720

Driver Category:Nutrient ReductionProject Phase:DesignRegulatory:Integrated Plan-SWIFT

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$40,565	\$2,969	\$24,592	\$13,004	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project consists of the on-land transmission force main section connecting the subaqueous force main Section 1 (separate project under BH015710) to the Nansemond Treatment Plant. This project will provide an interceptor force main to be installed using both open cut methods and a trenchless crossing of I-664. HRSD desires to construct this section of force main separate from Section 1 to accommodate coordination with on-going and proposed development of the multiple privately-owned properties that will be traversed. This project includes the SWIFT Water and backflush piping from the future Nansemond SWIFT Facility to each of the proposed well sites located west of I-664.

PROJECT JUSTIFICATION

The James River Waste Load Allocation (WLA) requires HRSD to continue reducing the mass of nutrients discharged from associated treatment plant outfalls. The planned reduction of nutrients is largely completed through implementation of the SWIFT program. The SWIFT master planning effort has determined that advanced water treatment and injection at Boat Harbor has significant physical limitations including site availability and resiliency to sea level rise. In addition, a financial analysis indicates there is significant long term cost savings associated with consolidating wastewater treatment and SWIFT facilities at Nansemond Treatment Plant. This project will allow HRSD to further reduce the amount of nutrients contributed to the James River basin. Upgrades to Nansemond Treatment Plant to accommodate the additional flow will be completed under a separate capital project.

FUNDING TYPE		CONTACTS			
Funding Type:	WIFIA	Contacts-Requesting Dept: Contacts-Dept Contacts: Contacts-Managing Dept:	Engineering David Steele Engineering		
PROPOSED SCHED	DULE START DATE	COST ESTIMATE			

		Est. Project Costs	\$48,680,000
		Contingency Budget	\$8,114,983
Closeout	01/12/2026	Est. Program Cost	\$40,565,017
Construction	06/24/2024	Closeout	\$0
PreConstruction	02/28/2024	Construction	\$38,000,000
Bid Delay	02/28/2024	PreConstruction	\$38,284
Design	01/01/2021	Design	\$2,082,792
Design Delay	09/30/2021	PER	\$442,502
PER	09/30/2021	PrePlanning	\$1,438
PrePlanning	05/01/2020	Cost Estimate Class:	Class 2



HRSD Interceptor Gravity Main

HRSD Pump Station

HRSD Pressure Reducing Station



System:	Boat Harbor
Туре:	SWIFT

Boat Harbor Treatment Plant Decommission and Demolition

PR_BH015730

Driver Category: I&I Abatement-IP/RWWMP Project Phase: Proposed Regulatory: Integrated Plan-SWIFT

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$34,950	\$0	\$603	\$2,323	\$15,118	\$16,906	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

Boat Harbor Treatment Plant will be converted to a pumping station under a separate capital project. Once wastewater collected from the Boat Harbor service area is diverted to the new Boat Harbor pump station, the treatment plant will be shut down, decommissioned, and demolished, as needed for a potential future land use.

PROJECT JUSTIFICATION

Continued operation of the Boat Harbor Treatment Plant presents challenges to HRSD, including vulnerability to flooding and limited site availability for required wastewater nutrient reduction improvements and SWIFT facilities. HRSD evaluated multiple options to overcome these challenges and found diversion to the Nansemond Treatment Plant provides the most resilient and economical solution to meet HRSD's goals.

FUNDING TYPE		CONTACTS		
Funding Type:	WIFIA	Contacts-Requesting Dep Contacts-Dept Contacts: Contacts-Managing Dept:	t: Engineering David Steele Engineering	
PROPOSED SC	HEDULE START DATE	COST ESTIMATE		
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction	01/02/2025 01/02/2025 06/03/2025 06/03/2025 06/15/2026 06/15/2026 01/06/2027	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction <u>Closeout</u>	Class 5 \$0 \$585,000 \$2,340,000 \$50,000 \$31,975,000 \$0	
Closeout	01/20/2028	Est. Program Cost Contingency Budget	\$34,950,000 \$6,100,000	
		Est. Project Costs	\$41,050,000	





System: Type: Boat Harbor Pump Stations Driver Category: I&I Abatement-IP/RWWMP Project Phase: Proposed Regulatory: Integrated Plan-HPP 2

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$747	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$255	\$493

PROJECT DESCRIPTION

Claremont Pump Station Upgrade (NS-PS-208).

PROJECT JUSTIFICATION

As part of the RWWMP submitted to the DEQ and EPA, HRSD developed an approach to recognize the highest-priority system improvements with the greatest relative environmental benefit. The result being the identification of High-Priority Projects (HPPs).

Rounds 1 and 2 of High-Priority Projects were scheduled with consecutive 10-year implementation periods starting with Round 1 being completed between plan approval and 2030. Prior to commencement, HRSD will review the Round 2 projects to confirm that they are still expected to meet the desired result and confirm this in a check in with the EPA/DEQ. To modify the list of specific Round 2 HPP projects, HRSD will show that the revised set of projects will attain a minimum of the same percent reduction, or better.

FUNDING TYPE		CONTACTS	
Funding Type:	Revenue Bond	Contacts-Requesting Dep Contacts-Dept Contacts: Contacts-Managing Dept	ot: Engineering John Dano : Engineering
PROPOSED SC	HEDULE START DATE	COST ESTIMATE	
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction Closeout	01/01/2028 10/30/2032 10/31/2033 10/31/2033 11/01/2035 11/01/2035 01/01/2036 01/01/2039	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction <u>Closeout</u> Est. Program Cost Contingency Budget	Class 5 \$0 \$339,724 \$1,087,046 \$203,859 \$11,652,521 <u>\$0</u> \$13,283,151 \$2,913,129
		Est. Project Costs	\$16,196,280





System:	Boat Harbor
Туре:	Pipelines

Chesapeake Avenue Interceptor Improvements (BH-HPP-01C) PR_BH015803

Driver Category: I&I Abatement-IP/RWWMP Project Phase: Proposed Regulatory: Integrated Plan-HPP 2

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$1,046	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$401	\$645

PROJECT DESCRIPTION

Upgrade 6,490 linear feet (LF) to 42-inch gravity main (GM); Upgrade 2,180 LF of 24-inch GM to 36-inch GM; Upgrade 70 LF of 42-inch inverted siphon along Chesapeake Avenue upstream of NS-PS-208; Upgrade 70 LF of 42-inch inverted siphon along Chesapeake Avenue upstream of NS-PS-208.

PROJECT JUSTIFICATION

As part of the RWWMP submitted to the DEQ and EPA, HRSD developed an approach to recognize the highest-priority system improvements with the greatest relative environmental benefit. The result being the identification of High-Priority Projects (HPPs).

Rounds 1 and 2 of High-Priority Projects were scheduled with consecutive 10-year implementation periods starting with Round 1 being completed between plan approval and 2030. Prior to commencement, HRSD will review the Round 2 projects to confirm that they are still expected to meet the desired result and confirm this in a check in with the EPA/DEQ. To modify the list of specific Round 2 HPP projects, HRSD will show that the revised set of projects will attain a minimum of the same percent reduction, or better.

FUNDING TYPE		CONTACTS	
Funding Type:	Revenue Bond	Contacts-Requesting Dep Contacts-Dept Contacts: Contacts-Managing Dept:	t: Engineering John Dano Engineering
PROPOSED SCH	IEDULE START DATE	COST ESTIMATE	
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction Closeout	01/01/2028 10/30/2032 10/31/2033 10/31/2033 11/01/2035 11/01/2035 01/01/2036 01/01/2039	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction Closeout Est. Program Cost	Class 5 \$0 \$534,684 \$1,364,834 \$302,266 \$15,742,080 <u>\$0</u> \$17,943,864

Est. Project Costs

\$21,879,384





System: Boat Harbor Type: Pipelines

Driver Category: I&I Abatement-IP/RWWMP Project Phase: Proposed Regulatory: Integrated Plan-HPP 2

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$8,847	\$0	\$0	\$0	\$0	\$111	\$222	\$222	\$1,121	\$1,152	\$942	\$5,078

PROJECT DESCRIPTION

High Priority Project (HPP) Round 2 Project 3 consists of the following Regional Wet Weather Management Plan (RWWMP) Project IDs and general descriptions: BH-RWWMP-04 58th Street Storage Tank

BH-RWWMP-07 Newmarket Creek Pump Station Upgrade

BH-RWWMP-08 Mercury Boulevard and Newmarket Gravity Main Improvements

PROJECT JUSTIFICATION

As part of the RWWMP submitted to the DEQ and EPA, HRSD developed an approach to recognize the highest-priority system improvements with the greatest relative environmental benefit. The result being the identification of High-Priority Projects (HPPs).

Rounds 1 and 2 of High-Priority Projects were scheduled with consecutive 10-year implementation periods starting with Round 1 being completed between plan approval and 2030. Prior to commencement, HRSD will review the Round 2 projects to confirm that they are still expected to meet the desired result and confirm this in a check in with the EPA/DEQ. To modify the list of specific Round 2 HPP projects, HRSD will show that the revised set of projects will attain a minimum of the same percent reduction, or better.

FUNDING TYPE		CONTACTS		
Funding Type:	Revenue Bond	Contacts-Requesting Dept: Contacts-Dept Contacts: Contacts-Managing Dept:	Engineering John Dano Engineering	
PROPOSED SCH	EDULE START DATE	COST ESTIMATE		
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction	01/01/2028 11/01/2030 11/01/2031 11/01/2031 11/01/2033 11/01/2033 01/01/2034	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction Closed	Class 5 \$628,156 \$1,570,391 \$1,884,469 \$314,078 \$26,696,644 \$314,078	
Closeout	01/01/2037	Est. Program Cost Contingency Budget	\$31,407,816 \$0	
		Est. Project Costs	\$31,407,816	



System: Type: Boat Harbor Locality and Private Property Driver Category: I&I Abatement-IP/RWWMP Project Phase: PER Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$10,377	\$582	\$530	\$2,462	\$3,000	\$3,000	\$803	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project includes the identification and reduction of points of inflow into locality and HRSD owned sanitary sewer systems within the Boat Harbor service area. Identification may include data analysis, smoke testing, flow and conductivity monitoring and other field investigations. Inflow reduction strategies may include sealing of manholes, elimination of direct connections, as well as, sealing and replacement of laterals and cleanouts. The Regional Wet Weather Management Plan (RWWMP) has identified basins in current need of inflow reductions and areas of saltwater inflow have been identified through data analysis. Areas to implement inflow reduction strategies will be targeted based on susceptibility to saltwater inflow and through further data analysis of the basins identified in RWWMP. HRSD will coordinate identification and reduction of inflow with locality partners. This project will benefit from the piloted strategies and analysis performed in Phase I.

PROJECT JUSTIFICATION

Hydrographs, flow monitoring, and conductivity monitoring indicate that rapid increases in flow occur during wet weather and high tide events. The rapid inflow of water into the system increases the risk of overflows due to limited hydraulic capacity and increases the risk of force main failures due to increased force main operating pressures. Peak flow reduction in the Boat Harbor service area is desirable to mitigate sanitary sewer overflow (SSO) risk. In addition, reduction of saltwater inflow will protect downstream SWIFT operations.

FUNDING TYPE		CONTACTS		
Funding Type:	Cash	Contacts-Requesting Dep Contacts-Dept Contacts: Contacts-Managing Dept:	t: Engineering Shirley Smith Engineering	
PROPOSED SC	HEDULE START DATE	COST ESTIMATE		
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction	04/03/2023 12/01/2023 07/01/2024 07/01/2024 07/01/2025 07/01/2025 10/01/2025	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction <u>Closeout</u>	Class 5 \$0 \$582,000 \$530,000 \$212,000 \$9,000,000 \$53,000	
Closeout	10/01/2028	Est. Program Cost Contingency Budget	\$10,377,000 \$223,000	







Bayshore Pu	mp Station	Replacement
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PR_BH016300

System: Type: Boat Harbor Pump Stations Driver Category: Capacity Improvements Project Phase: Proposed Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$13,660	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$310	\$840	\$6,255	\$6,255

PROJECT DESCRIPTION

This project includes the replacement of the Bayshore Pump Station (PS) to address hydraulic and age-related conditional issues. The proposed replacement will include a relocated pump station and new gravity and force main connections to the existing systems.

PROJECT JUSTIFICATION

Bayshore Pump Station was constructed in 1944. During moderate wet weather events, the station has experienced capacity issues resulting in numerous Sanitary Sewer Overflows (SSO). Over the past decade, this pump station has averaged one SSO per calendar year. In 2021, North Shore Interceptors installed an interim pump to provide additional hydraulic capacity for the station but SSOs still occur as this is not a permanent solution. The pumping configuration of this pump station is also limiting. With only one small pump and two larger pumps, the smaller pump is in operation the vast majority of the time for dry weather flows with no redundancy, and the two larger pumps only run during wet weather events. Due to this configuration, the firm capacity of this station is limited to just one of the larger pumps and is not sufficient for influent flows. In almost all wet weather events, both pumps run at full speed and again have no redundancy. In 2013, an electrical upgrade moved the generator to the exterior of the building. The elevated platform for this generator, combined with the permanently mounted external interim pump, has created an eye sore for the community. The station is near the City of Hampton's Buckroe Beach, and the densely populated neighboring parcels and adjacent community are adversely affected by these structures. Historically, there have been other age-related issues, including an electrical fire in 2008 where one of the internal breaker panels was completely lost.

FUNDING TYPE		CONTACTS	
Funding Type:	Revenue Bond	Contacts-Requesting Dep Contacts-Dept Contacts: Contacts-Managing Dept:	t: Operations-Interceptors Michael Johnson Operations-Interceptors
PROPOSED SC	OPOSED SCHEDULE START DATE COST ESTIMATE		
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction Closeout	07/01/2030 11/01/2030 07/01/2031 07/01/2032 07/01/2032 09/01/2032 05/01/2034	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction <u>Closeout</u> Est. Program Cost Contingency Budget	Class 5 \$0 \$310,000 \$840,000 \$5,000 \$12,500,000 \$5,000 \$13,660,000 \$2,340,000
		Est. Project Costs	\$16,000,000