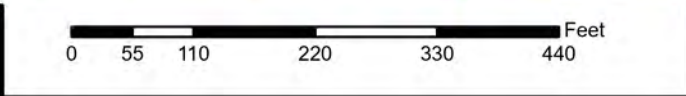


General





- GNO13300**
- Project Interceptor Line
 - Project Interceptor Point
 - Project Pump Station Point
 - Project Area
- Legend**
- CIP Interceptor Point
 - CIP Pump Station Point
 - CIP Interceptor Line
 - CIP Abandonment
 - CIP Project Area
 - HRSD Interceptor Force Main
 - HRSD Interceptor Gravity Main
 - HRSD Treatment Plant
 - HRSD Pressure Reducing Station
 - HRSD Pump Station



GNO 13300

Treatment Plant Grease Handling Facilities





System: General
Type: Wastewater Treatment

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$11,860	\$11,742	\$118	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project involves installation of a facility at Nansemond Treatment Plant to receive FOG (Fats, Oils, and Grease) from indirect haulers. The facility will screen, decant, and process the FOG in a manner that will convert a portion to bio-fuel using the Greasezilla system. The portion of FOG converted to bio-fuel will be sold to Greasezilla per the HRSD/Greasezilla offtake agreement, the decanted FOG water will be sent to headworks for normal wastewater treatment, and the remaining processed FOG will be sent to the digesters.

PROJECT JUSTIFICATION

The grease handling facilities will reduce the impact of high biochemical oxygen demand (BOD) loading on the biological system and provide a more stable operation. The new facilities will also reduce the plugging of treatment process piping and equipment caused by the large quantities of grease being discharged over short time periods. This project also addresses the Regional Consent Decree which requires an effective FOG program.

FUNDING TYPE

Funding Type: VCWRLF

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Angela Weatherhead
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning 02/02/2015
PER 04/01/2015
Design Delay 03/02/2015
Design 02/01/2019
Bid Delay 07/31/2020
PreConstruction 07/31/2020
Construction 11/01/2021
Closeout 01/01/2024

COST ESTIMATE

Cost Estimate Class:

PrePlanning	\$0
PER	\$108,672
Design	\$1,186,840
PreConstruction	\$1,815
Construction	\$10,552,423
Closeout	\$10,000
Est. Program Cost	\$11,859,751
Contingency Budget	\$700,000
Est. Project Costs	\$12,559,751



System: General
Type: Pipelines

Driver Category: I&I Abatement-Rehabilitation Plan
Project Phase: Design
Regulatory: Rehab Plan Phase Two

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$12,086	\$4,971	\$7,109	\$7	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will provide for rehabilitation/replacement of gravity sewer infrastructure in the Newport News, Hampton and Williamsburg. For a complete list of affected assets refer to the Rehabilitation Plan.

PROJECT JUSTIFICATION

Condition assessment activities indicate that these assets present a material risk of failure due to sanitary sewer overflow, I/I, and physical condition defects.

FUNDING TYPE

Funding Type: VCWRLF

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Angela Weatherhead
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	11/13/2019
PER	11/13/2019
Design Delay	05/27/2022
Design	11/16/2020
Bid Delay	11/01/2021
PreConstruction	11/01/2022
Construction	02/01/2023
Closeout	03/01/2024

COST ESTIMATE

Cost Estimate Class:	Class 1
PrePlanning	\$952
PER	\$155,712
Design	\$361,226
PreConstruction	\$12,514
Construction	\$11,545,953
Closeout	\$10,000
Est. Program Cost	\$12,086,357
Contingency Budget	\$548,429
Est. Project Costs	\$12,634,786



System: General
Type: Pipelines

Driver Category: I&I Abatement-Rehabilitation Plan
Project Phase: Pre Planning
Regulatory: Rehab Plan Phase Two

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$876	\$61	\$258	\$557	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will rehabilitate and/or replace gravity sewer segments at various locations in the South Shore Interceptor System. Refer to the Rehabilitation Plan for the full listing of affected assets.

PROJECT JUSTIFICATION

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

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Eddie Heady
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	10/01/2020
PER	06/01/2022
Design Delay	03/01/2023
Design	09/01/2023
Bid Delay	03/01/2024
PreConstruction	03/01/2024
Construction	06/01/2024
Closeout	06/01/2025

COST ESTIMATE

Cost Estimate Class:	Class 4
PrePlanning	\$0
PER	\$61,000
Design	\$191,000
PreConstruction	\$16,000
Construction	\$608,000
Closeout	\$0
Est. Program Cost	\$876,000
Contingency Budget	\$178,864
Est. Project Costs	\$1,054,864



System: General
Type: Pipelines

Driver Category: I&I Abatement-Rehabilitation Plan
Project Phase: Design
Regulatory: Rehab Plan Phase Two

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$3,067	\$196	\$1,195	\$1,672	\$4	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will address multiple valves, air vents, and a leak detector assessed to be at material risk of failure during the Condition Assessment Program. These assets are located between North and South Shore Interceptors. All South Shore air vents on this project were addressed through GN013900.

PROJECT JUSTIFICATION

Condition Assessment Activities and/or Preventative Maintenance reviews suggest that these assets are either at material risk of failure, in need of replacement, or in need of repair.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Ted Denny
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	02/01/2019
PER	04/30/2021
Design Delay	06/28/2022
Design	07/01/2022
Bid Delay	09/01/2023
PreConstruction	09/01/2023
Construction	12/01/2023
Closeout	05/01/2025

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	\$0
PER	\$70,643
Design	\$145,153
PreConstruction	\$6,000
Construction	\$2,840,633
Closeout	\$5,000
Est. Program Cost	\$3,067,429
Contingency Budget	\$400,000
Est. Project Costs	\$3,467,429



System: General
Type: Pipelines

Driver Category: I&I Abatement-Rehabilitation Plan
Project Phase: Pre Planning
Regulatory: Rehab Plan Phase Two

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$486	\$330	\$155	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will repair/rehabilitate HRSD's aerial/exposed crossings. See Table 3-6 of the Rehabilitation Action Plan for a detailed project list. HRSD may adjust the scope of this project if other projects outside of the Rehabilitation Action Plan address the condition issues.

PROJECT JUSTIFICATION

Condition Assessment Activities and Annual yearly inspections suggested that these aerial/exposed crossings are at material risk of failure or require rehabilitation.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

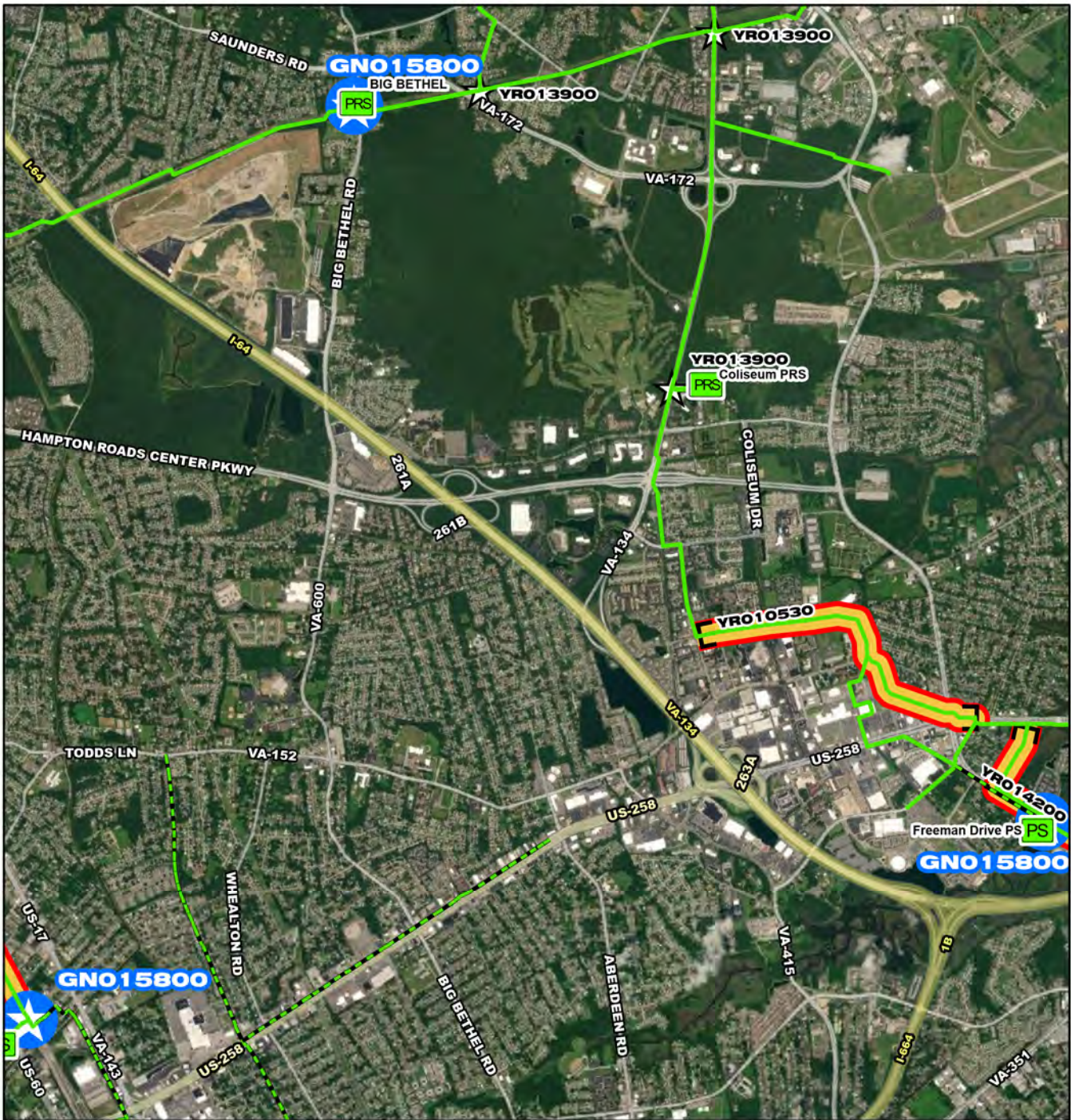
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Eddie Heady
Contacts-Managing Dept: Operations-Interceptors

PROPOSED SCHEDULE START DATE

PrePlanning	03/02/2020
PER	03/30/2020
Design Delay	05/19/2020
Design	03/01/2021
Bid Delay	03/01/2022
PreConstruction	08/01/2022
Construction	08/01/2022
Closeout	10/01/2023

COST ESTIMATE

Cost Estimate Class:	Class 1
PrePlanning	\$0
PER	\$32,513
Design	\$30,974
PreConstruction	\$0
Construction	\$422,240
Closeout	\$0
Est. Program Cost	\$485,727
Contingency Budget	\$60,560
Est. Project Costs	\$546,287



GNO 15800

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station

0 1,000 2,000 4,000 6,000 8,000 Feet

GNO 15800

North Shore Automated Diversion Facilities

N
W E
S

CIP Location



System: General
Type: Pump Stations

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$2,029	\$342	\$1,682	\$5	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

The project will involve installing control valves at three pump station (PS) sites (North Avenue PS, Woodland Road PS, and Big Bethel Pressure Reducing Station (PRS)) to provide greater operational flexibility and system diversion capabilities during localized wet weather events. Immediate needs to reduce the three month average flow at York River Treatment Plant (YRTP) will be addressed. The long term goal of equalizing and coordinating flows at James River Treatment Plant (JRTP) and YRTP will also be achieved.

PROJECT JUSTIFICATION

The YRTP has experienced increased average daily flow during winter months due to elevated groundwater levels. In the winter of 2014, YRTP experienced five consecutive months that exceeded the 95% design criteria threshold. As required by permit, once three consecutive months above 95% are experienced, a short term and long range plan shall be developed. This automated diversion project will serve as the long range solution and will be able to manage the flow through diversions and operational strategies at several locations between the YRTP, JRTP, and Boat Harbor Treatment Plant (BHTP). Meter data, future flow projections, and hydraulic modeling indicate that once implemented these strategies will successfully reduce the flow below the 95% threshold at YRTP and provide the overall North Shore interceptor system with additional diversion capabilities.

This project was also identified in the Smart Sewer Study as possible average daily (non wet-weather) equalization for the YRTP and JRTP. These automated valves, together with off-line storage facilities could be used to equalize treatment plant flows over the entire day. This flow equalization would serve to both improve sewage treatment processes and optimization SWIFT facilities. It is anticipated that these facilities will provide significant operational and capital improvement cost savings.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Virginia Opp
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	10/03/2016
PER	10/31/2016
Design Delay	12/20/2016
Design	08/29/2017
Bid Delay	10/01/2022
PreConstruction	03/01/2023
Construction	07/01/2023
Closeout	07/01/2024

COST ESTIMATE

Cost Estimate Class:	Class 2
PrePlanning	\$0
PER	\$89,250
Design	\$184,214
PreConstruction	\$0
Construction	\$1,750,252
Closeout	\$5,000
Est. Program Cost	\$2,028,716
Contingency Budget	\$440,000
Est. Project Costs	\$2,468,716



System: General
Type: SWIFT

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$486	\$100	\$100	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$92	\$93

PROJECT DESCRIPTION

This project will assist HRSD in development of a regulatory strategy related to dispersion of treated effluent from outfalls associated with the seven facilities that will be impacted by full-scale implementation of SWIFT.

PROJECT JUSTIFICATION

One objective of full scale SWIFT implementation is to substantially reduce surface discharge by maximizing aquifer recharge at each SWIFT facility. This will result in a reduction in daily flow to surface waters from the associated treatment plants. The variability of effluent flow rate for each facility may also significantly increase. These changes may impact the operation of the existing outfall and may require a related outfall modification or new outfall. Dispersion modeling of each outfall will provide an understanding of the related impacts of these changes and will inform conversations with state regulators.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Water Quality
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning 06/01/2019
PER
Design Delay
Design
Bid Delay
PreConstruction
Construction
Closeout

COST ESTIMATE

Cost Estimate Class:

PrePlanning	\$1,225,000
PER	\$0
Design	\$0
PreConstruction	\$0
Construction	\$0
Closeout	\$0
Est. Program Cost	\$1,225,000
Contingency Budget	\$0
Est. Project Costs	\$1,225,000



System: General
Type: SWIFT

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$80,000	\$34,526	\$5,057	\$5,057	\$5,057	\$5,057	\$4,459	\$4,416	\$4,416	\$4,434	\$4,451	\$3,070

PROJECT DESCRIPTION

The SWIFT Full Scale Implementation Program management team will manage the delivery of the advanced water treatment facilities to take HRSD's already highly treated wastewater and produce SWIFT water. The Program Management team will also manage the delivery of the managed aquifer recharge wells, monitoring wells, and associated pumping and piping systems. The Program Management team will also manage delivery of the wastewater treatment plant improvements, outfall modifications, conveyance, and other projects needed to ensure successful SWIFT implementation. The Program Management team will implement the processes, procedures, and systems needed to design, procure, construct, permit, manage, and integrate the new SWIFT related assets. The Program Management team will also provide staff augmentation, owner's consultant services, and other support as needed.

PROJECT JUSTIFICATION

The permitting, design, procurement and construction of advanced water treatment facilities, managed aquifer recharge facilities, wastewater treatment upgrades, conveyance, and outfall modifications required to implement the SWIFT Full Scale Implementation Program will require additional resources and expertise to augment HRSDs capabilities and capacity limitations.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

Contacts-Requesting Dept: General Manager
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning 05/01/2020
PER
Design Delay
Design 11/01/2018
Bid Delay
PreConstruction
Construction 08/01/2022
Closeout

COST ESTIMATE

Cost Estimate Class:
PrePlanning \$659,994
PER \$700
Design \$69,472,279
PreConstruction \$0
Construction \$9,867,027
Closeout \$0
Est. Program Cost \$80,000,000
Contingency Budget \$0
Est. Project Costs \$80,000,000

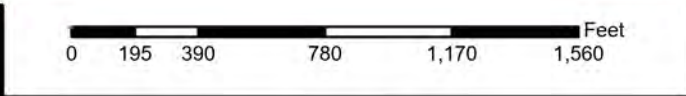


GNO16344

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 16344

James River Land Improvements - Phase I

CIP Location



System: General
Type: SWIFT

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$9,861	\$3,880	\$5,981	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will provide design and construction of improvements to the land surrounding the James River Treatment Plant (JRTP), including development of a nearly 1 mile of linear park and trail system. The trail consists of elevated timber boardwalk structures and asphalt on grade trails within HRSD's open space easement and in the City Farm section of Riverview Farm Park.

PROJECT JUSTIFICATION

HRSD Commission approved an Agreement with the City of Newport News in 2020 to purchase approximately ten (10) acres of land adjacent to JRTP and receive the required easements for managed aquifer recharge wells, buildings, and related piping. Among the requirements stated in the land purchase Agreement is the commitment by HRSD to design and construct public access trails, which will be operated and maintained by the City of Newport News.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	11/01/2019
PER	02/17/2021
Design Delay	09/30/2022
Design	08/31/2022
Bid Delay	09/30/2022
PreConstruction	08/09/2022
Construction	03/01/2023
Closeout	03/01/2024

COST ESTIMATE

Cost Estimate Class:	Class 1
PrePlanning	\$1,197
PER	\$199,484
Design	\$648,825
PreConstruction	\$31,784
Construction	\$8,979,288
Closeout	\$0
Est. Program Cost	\$9,860,578
Contingency Budget	\$0
Est. Project Costs	\$9,860,578

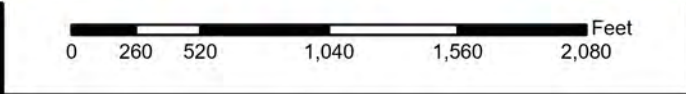


GNO 16346

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 16346

**Boat Harbor Transmission Force
Main Land Acquisition**

N
W E
S

CIP Location



System: General
Type: SWIFT

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$5,500	\$18	\$5,482	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

A transmission force main connecting the new Boat Harbor Pump Station and Nansemond Treatment Plant will be constructed under a separate capital project. Additionally, SWIFT Water piping and recharge well locations will be defined along the transmission force main route. This project will fund the purchase of land and easements that are needed to construct the transmission force main, SWIFT Water piping, well buildings and associated utilities.

PROJECT JUSTIFICATION

An easement across private property is required to install the force main from the south shore of the James River to the Nansemond Treatment Plant, which is required to implement projects BH015700, BH015710, and BH015720. Acquiring property on the west side of I-664 for recharge wells is required because there is insufficient space on the HRSD Nansemond property to accommodate the needed spacing between recharge wells.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

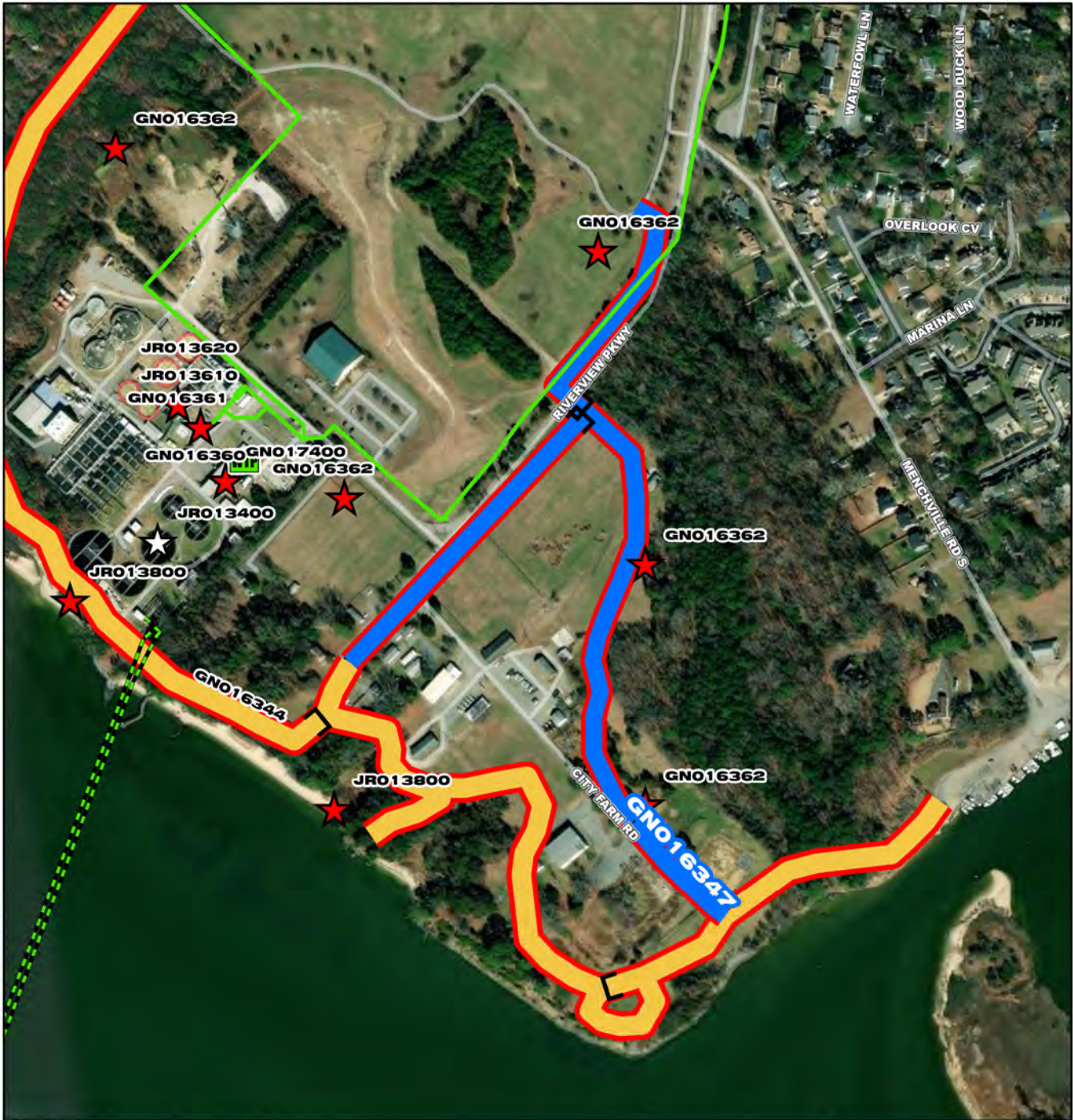
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning 12/01/2022
PER
Design Delay
Design 02/01/2023
Bid Delay
PreConstruction
Construction
Closeout

COST ESTIMATE

Cost Estimate Class:	Class 5
PrePlanning	\$0
PER	\$0
Design	\$5,500,000
PreConstruction	\$0
Construction	\$0
Closeout	\$0
Est. Program Cost	\$5,500,000
Contingency Budget	\$500,000
Est. Project Costs	\$6,000,000

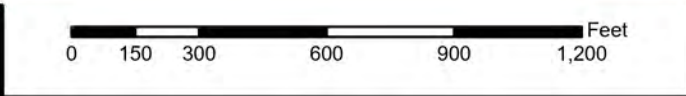


GNO16347

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 16347

James River Land Improvements - Phase II

N
W E
S

CIP Location



System: General
Type: SWIFT

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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$2,046	\$0	\$0	\$905	\$1,115	\$26	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project includes design and construction of multi-use trails of approximately 3,000 linear feet connecting to existing City of Newport News trails. The project area is located adjacent to HRSDs James River Treatment Plant within the City of Newport News Riverview Farm Park. The project will incorporate multi-use asphalt on grade trail and associated landscaping improvements near the managed aquifer recharge well buildings.

PROJECT JUSTIFICATION

HRSD entered into an Agreement with the City of Newport News to purchase approximately ten (10) acres of land adjacent to the James River Treatment Plant (JRTP) and receive the required easements for managed aquifer recharge wells, buildings, and related piping. Among the requirements stated in the land purchase Agreement is the commitment by HRSD to design and construct public access trails, which will be operated and maintained by the City of Newport News.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2024
PER	07/01/2024
Design Delay	07/01/2024
Design	07/01/2024
Bid Delay	10/02/2024
PreConstruction	10/02/2024
Construction	11/11/2024
Closeout	07/09/2026

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	\$0
PER	\$0
Design	\$185,000
PreConstruction	\$15,000
Construction	\$1,846,000
Closeout	\$0
Est. Program Cost	\$2,046,000
Contingency Budget	\$257,840
Est. Project Costs	\$2,303,840

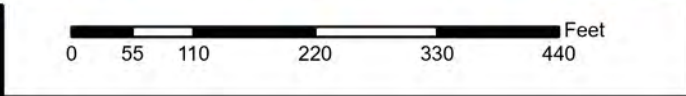


GNO16350

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 1 6350

Williamsburg SWIFT Facility

N
W E
S

CIP Location



System: General
Type: SWIFT

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$684	\$684	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

SWIFT Williamsburg will include advanced water treatment facilities needed to produce SWIFT water at the Williamsburg Treatment Plant. The scope includes advanced water treatment facilities, conveyance of SWIFT water to the recharge wells, and modifications to the non-potable water system. The scope does not include improvements to the existing wastewater treatment process to improve the quality of the secondary effluent, to be compatible with the SWIFT facilities. The scope does not include modifications to the existing outfall system. The scope does not include drilling of the recharge and monitoring wells.

PROJECT JUSTIFICATION

SWIFT Williamsburg is needed to reduce nutrients entering the Chesapeake Bay, augment the groundwater supply, reduce the rate of ground subsidence, protect groundwater from saltwater intrusion, and support Virginias economy.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

Contacts-Requesting Dept: General Manager
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2038
PER	07/03/2039
Design Delay	11/05/2040
Design	11/12/2040
Bid Delay	
PreConstruction	07/01/2044
Construction	07/01/2045
Closeout	11/01/2048

COST ESTIMATE

Cost Estimate Class:

PrePlanning	\$226
PER	\$486
Design	\$3,928,376
PreConstruction	\$121,000
Construction	\$127,200,000
Closeout	\$0
Est. Program Cost	\$131,250,088
Contingency Budget	\$14,866,412
Est. Project Costs	\$146,116,500

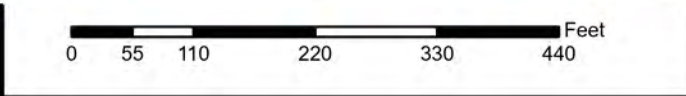


GNO16351

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 16351

Williamsburg Recharge Wells

N
W —+— E
S

CIP Location



System: General
Type: SWIFT

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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

Williamsburg Recharge Wells will provide for the construction of recharge wells and monitoring wells; services for the development, logging, testing, and conditioning of wells associated with SWIFT at the Williamsburg Treatment Plant. The scope does not include well site development or the mechanical equipment associated with the conveyance of SWIFT water up to and into the wells.

PROJECT JUSTIFICATION

Williamsburg Recharge Wells are required for managed aquifer recharge using SWIFT Water. The monitoring wells are required by permit.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning 07/01/2046
PER 08/01/2046
Design Delay
Design 08/01/2046
Bid Delay
PreConstruction 01/01/2047
Construction 03/01/2047
Closeout 01/01/2048

COST ESTIMATE

Cost Estimate Class:

PrePlanning	\$0
PER	\$180,000
Design	\$500,000
PreConstruction	\$24,000
Construction	\$40,000,000
Closeout	\$0
Est. Program Cost	\$40,704,000
Contingency Budget	\$4,074,000
Est. Project Costs	\$44,778,000

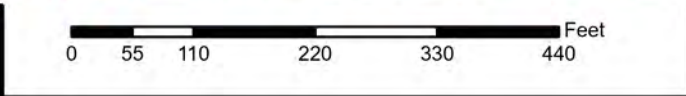


GNO16360

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 1 6360

James River SWIFT Facility

N
W E
S

CIP Location



System: General
Type: SWIFT

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$296,024	\$101,076	\$36,405	\$62,366	\$63,942	\$32,234	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

SWIFT James River will include advanced water treatment facilities needed to produce SWIFT water at the James River Treatment Plant. The scope includes advanced water treatment facilities, conveyance of SWIFT water to the recharge wells, and modifications to the non-potable water system. The scope does not include land acquisition, modifications to the existing outfall system or improvements to the existing wastewater treatment process to improve the quality of the secondary effluent, to be compatible with the SWIFT facilities. The scope does not include drilling of the recharge and monitoring wells.

PROJECT JUSTIFICATION

SWIFT James River is needed to reduce nutrients entering the Chesapeake Bay, augment the groundwater supply, reduce the rate of ground subsidence, protect groundwater from saltwater intrusion and support Virginias economy.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

Contacts-Requesting Dept: General Manager
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	08/11/2019
PER	07/01/2019
Design Delay	
Design	05/01/2020
Bid Delay	
PreConstruction	08/01/2019
Construction	02/01/2022
Closeout	01/01/2027

COST ESTIMATE

Cost Estimate Class:	Class 1
PrePlanning	\$0
PER	\$4,277,234
Design	\$19,013,830
PreConstruction	\$308,185
Construction	\$272,424,747
Closeout	\$0
Est. Program Cost	\$296,023,996
Contingency Budget	\$9,675,543
Est. Project Costs	\$305,699,539



GNO16361

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station

0 55 110 220 330 440 Feet

GNO 1 6 3 6 1

James River Recharge Wells (On Site)

N
W E
S

CIP Location



System: General
Type: SWIFT

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$17,767	\$14,918	\$2,849	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

James River Recharge Wells will provide for the construction of recharge wells and monitoring wells; services for the development, logging, testing, and conditioning of wells associated with SWIFT at the James River Treatment Plant. The scope does not include well site development or the mechanical equipment associated with the conveyance of SWIFT water up to and into the wells.

PROJECT JUSTIFICATION

James River Recharge Wells are required for managed aquifer recharge using SWIFT Water. The monitoring wells are required by permit.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	08/31/2021
PER	11/30/2020
Design Delay	08/31/2021
Design	08/25/2021
Bid Delay	05/28/2021
PreConstruction	05/28/2021
Construction	12/01/2021
Closeout	12/01/2023

COST ESTIMATE

Cost Estimate Class:	Class 1
PrePlanning	\$158,874
PER	\$0
Design	\$757,329
PreConstruction	\$30,783
Construction	\$16,820,000
Closeout	\$0
Est. Program Cost	\$17,766,986
Contingency Budget	\$14,678,613
Est. Project Costs	\$32,445,599



GNO16362

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station

Feet

0 250 500 1,000 1,500 2,000

GNO 1 6362

James River Recharge Wells (Off Site)

N
W E
S

CIP Location



System: General
Type: SWIFT

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$47,077	\$7,318	\$17,881	\$16,990	\$4,889	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

James River Recharge Wells (Off Site) will provide for the construction of recharge wells and monitoring wells off site; services for the development, logging, testing, and conditioning of wells associated with SWIFT at the James River Treatment Plant. The scope does not include well site development or the mechanical equipment associated with the conveyance of SWIFT water up to and into the wells.

PROJECT JUSTIFICATION

James River Recharge Wells are required for managed aquifer recharge using SWIFT Water. The monitoring wells are required by permit.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

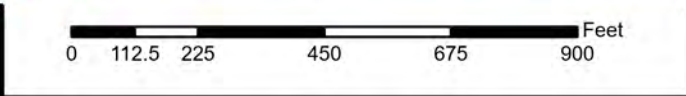
PrePlanning	08/31/2021
PER	08/31/2021
Design Delay	10/31/2021
Design	08/25/2021
Bid Delay	05/28/2021
PreConstruction	05/28/2021
Construction	07/01/2022
Closeout	06/01/2026

COST ESTIMATE

Cost Estimate Class:	Class 1
PrePlanning	\$0
PER	\$0
Design	\$0
PreConstruction	\$25,833
Construction	\$47,049,475
Closeout	\$2,000
Est. Program Cost	\$47,077,308
Contingency Budget	\$256,692
Est. Project Costs	\$47,334,000



- GNO16363**
- Project Interceptor Line
 - Project Interceptor Point
 - Project Pump Station Point
 - Project Area
- Legend**
- CIP Interceptor Point
 - CIP Pump Station Point
 - CIP Interceptor Line
 - CIP Abandonment
 - CIP Project Area
 - HRSD Interceptor Force Main
 - HRSD Interceptor Gravity Main
 - HRSD Treatment Plant
 - HRSD Pressure Reducing Station
 - HRSD Pump Station



GNO 1 6363

James River Recharge Well Enhancements



System: General
Type: SWIFT

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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$305	\$0	\$0	\$102	\$198	\$5	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project includes enhancement of approximately three managed aquifer recharge wells in the City of Newport News Riverview Farm Park. The project area is located within the City's Riverview Farm park and HRSD's easements. The project will incorporate native plants and public access design elements to enhance the area around the managed aquifer recharge well buildings.

PROJECT JUSTIFICATION

HRSD entered into an Agreement with the City of Newport News to purchase approximately ten (10) acres of land adjacent to the James River Treatment Plant (JRTP) and receive the required easements for managed aquifer recharge wells, buildings, and related piping. Among the requirements stated in the land purchase Agreement is the commitment by HRSD to integrate the managed aquifer recharge well buildings into the park through installation of landscaping and public amenities.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2024
PER	07/01/2024
Design Delay	07/01/2024
Design	07/01/2024
Bid Delay	10/02/2024
PreConstruction	06/11/2025
Construction	07/22/2025
Closeout	07/09/2026

COST ESTIMATE

Cost Estimate Class:	Class 5
PrePlanning	\$0
PER	\$0
Design	\$100,000
PreConstruction	\$5,000
Construction	\$200,000
Closeout	\$0
Est. Program Cost	\$305,000
Contingency Budget	\$50,000
Est. Project Costs	\$355,000



GNO16370

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station

Feet

0 55 110 220 330 440

GNO 16370

York River SWIFT Facility

N
W E
S

CIP Location



System: General
Type: SWIFT

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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

SWIFT York River will include advanced water treatment facilities needed to produce SWIFT water at the York River Treatment Plant. The scope includes advanced water treatment facilities, conveyance of SWIFT water to the recharge wells, and modifications to the non-potable water system. The scope does not include land acquisition, modifications to the existing outfall system or improvements to the existing wastewater treatment process to improve the quality of the secondary effluent, to be compatible with the SWIFT facilities. The scope does not include drilling of the recharge and monitoring wells.

PROJECT JUSTIFICATION

SWIFT York River is needed to reduce nutrients entering the Chesapeake Bay, augment the groundwater supply, reduce the rate of ground subsidence, protect groundwater from saltwater intrusion, and support Virginias economy.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

Contacts-Requesting Dept: General Manager
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning 07/01/2044
PER 08/01/2044
Design Delay
Design 11/01/2044
Bid Delay
PreConstruction 02/01/2045
Construction 12/01/2045
Closeout 11/01/2048

COST ESTIMATE

Cost Estimate Class:

PrePlanning	\$0
PER	\$3,452,000
Design	\$6,115,000
PreConstruction	\$198,000
Construction	\$201,600,000
Closeout	\$0
Est. Program Cost	\$211,365,000
Contingency Budget	\$42,273,000
Est. Project Costs	\$253,638,000



GNO16371

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station

Feet

0 55 110 220 330 440

GNO 1 6 3 7 1

York River Recharge Wells

N
W E
S

CIP Location



System: General
Type: SWIFT

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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

York River Recharge Wells will provide for the construction of recharge wells and monitoring wells; services for the development, logging, testing, and conditioning of wells associated with SWIFT at the York River Treatment Plant. The scope does not include well site development or the mechanical equipment associated with the conveyance of SWIFT water up to and into the wells.

PROJECT JUSTIFICATION

York River Recharge Wells are required for managed aquifer recharge using SWIFT Water. The monitoring wells are required by permit.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2046
PER	08/01/2046
Design Delay	
Design	10/01/2046
Bid Delay	
PreConstruction	01/01/2047
Construction	02/01/2047
Closeout	12/01/2047

COST ESTIMATE

Cost Estimate Class:

PrePlanning	\$0
PER	\$100,000
Design	\$783,000
PreConstruction	\$35,000
Construction	\$70,000,000
Closeout	\$0
Est. Program Cost	\$70,918,000
Contingency Budget	\$7,097,000
Est. Project Costs	\$78,015,000

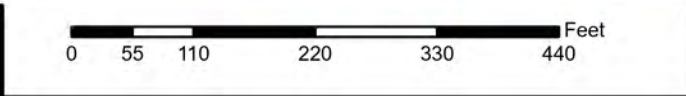


GNO16380

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 1 6380

Nansemond SWIFT Facility

CIP Location



System: General
Type: SWIFT

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$546,271	\$799	\$307	\$33,382	\$74,675	\$149,648	\$144,478	\$142,982	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

Nansemond SWIFT will include advanced water treatment facilities needed to produce SWIFT water at the Nansemond Treatment Plant. The scope includes advanced water treatment facilities, conveyance of SWIFT water to the recharge wells, and modifications to the non-potable water system. The scope does not include land acquisition, modifications to the existing outfall system, or improvements to the existing wastewater treatment process to improve the quality of the secondary effluent to meet the influent requirements of the SWIFT treatment facilities. The scope does not include drilling of the recharge and monitoring wells.

PROJECT JUSTIFICATION

Nansemond SWIFT is needed to reduce nutrients entering the Chesapeake Bay, augment the groundwater supply, reduce the rate of ground subsidence, protect groundwater from saltwater intrusion, and support Virginia's economy. This project will support HRSD's nutrient management strategy for meeting the Lower James River Basin total phosphorus and total nitrogen discharge limits.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

Contacts-Requesting Dept: General Manager
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning 11/22/2021
PER 05/01/2022
Design Delay
Design 06/01/2024
Bid Delay
PreConstruction 02/01/2023
Construction 06/01/2025
Closeout 07/01/2029

COST ESTIMATE

Cost Estimate Class:

PrePlanning	\$0
PER	\$988,266
Design	\$35,000,000
PreConstruction	\$283,000
Construction	\$510,000,000
Closeout	\$0
Est. Program Cost	\$546,271,266
Contingency Budget	\$58,476,734
Est. Project Costs	\$604,748,000

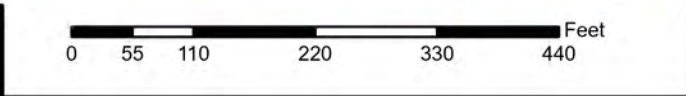


GNO16381

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 1 6 3 8 1

Nansemond Recharge Wells

CIP Location



System: General
Type: SWIFT

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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$122,457	\$0	\$197	\$1,463	\$13,327	\$59,808	\$45,322	\$2,341	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

Nansemond Recharge Wells will provide for the construction of recharge wells and monitoring wells; services for the development, logging, testing, and conditioning of wells associated with SWIFT at the Nansemond Treatment Plant. The scope does not include well site development or the mechanical equipment associated with the conveyance of SWIFT water up to and into the wells.

PROJECT JUSTIFICATION

Nansemond Recharge Wells are required for managed aquifer recharge using SWIFT Water. The monitoring wells are required by permit.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning 01/01/2023
PER 02/01/2024
Design Delay
Design 06/01/2024
Bid Delay
PreConstruction 06/01/2025
Construction 11/01/2025
Closeout 10/01/2028

COST ESTIMATE

Cost Estimate Class:

PrePlanning	\$0
PER	\$197,000
Design	\$1,463,000
PreConstruction	\$78,000
Construction	\$120,719,000
Closeout	\$0
Est. Program Cost	\$122,457,000
Contingency Budget	\$12,247,000
Est. Project Costs	\$134,704,000



System: VIP
Type: SWIFT

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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$5,377	\$0	\$4,103	\$1,274	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will include the preliminary engineering of the initial phase of SWIFT implementation, including tertiary treatment comprised of coagulation, flocculation, and sedimentation followed by granular media filters.

PROJECT JUSTIFICATION

This project will support HRSD's nutrient management strategy for meeting the 2032 Lower James River Basin total phosphorus discharge limits.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

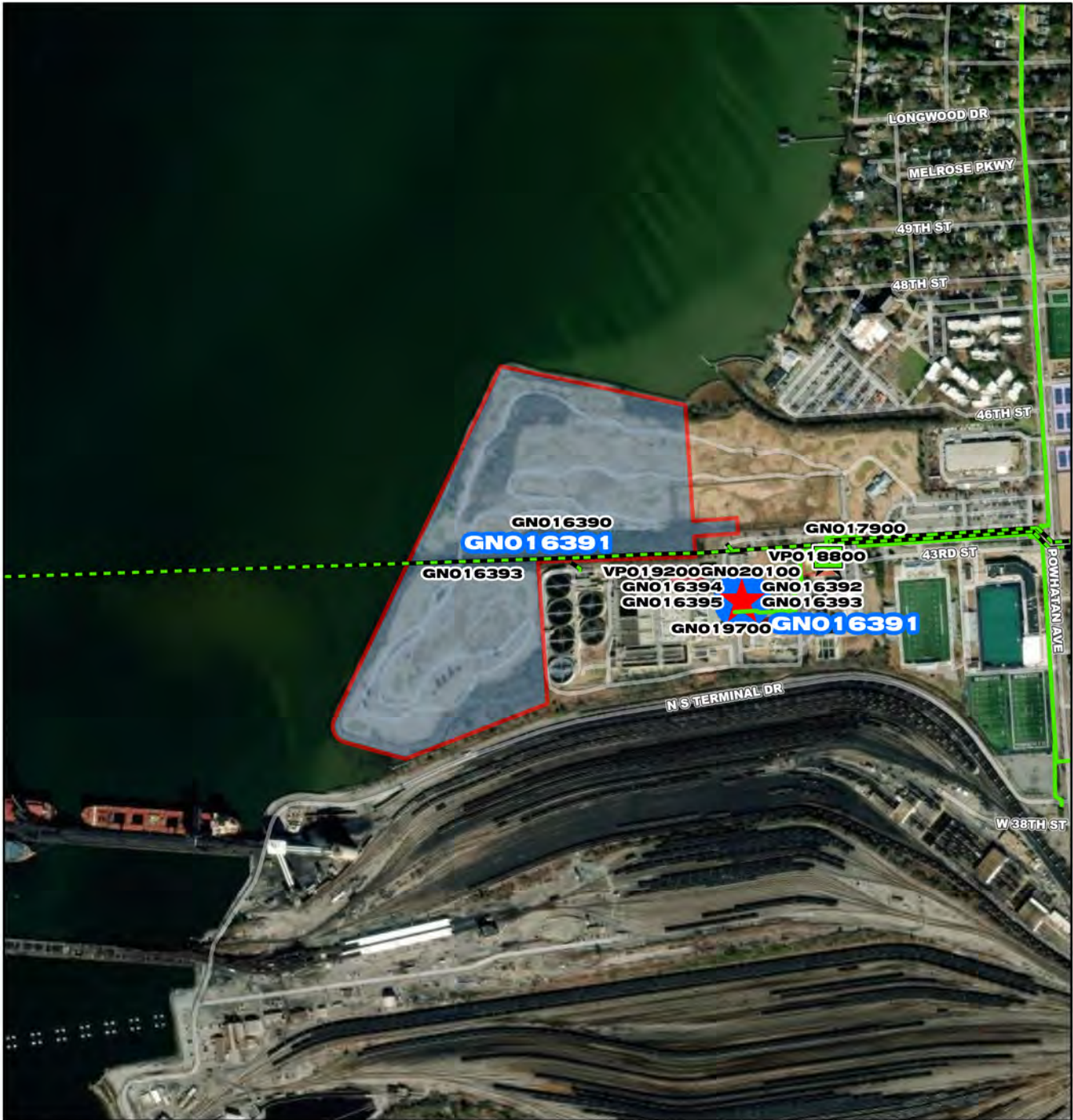
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning 03/01/2023
PER 04/01/2023
Design Delay
Design
Bid Delay
PreConstruction
Construction
Closeout

COST ESTIMATE

Cost Estimate Class:	Class 5
PrePlanning	\$0
PER	\$5,377,000
Design	\$0
PreConstruction	\$0
Construction	\$0
Closeout	\$0
Est. Program Cost	\$5,377,000
Contingency Budget	\$0
Est. Project Costs	\$5,377,000

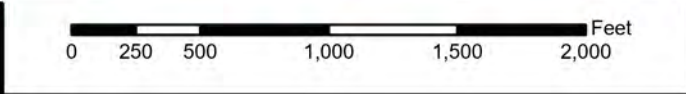


GNO 16391

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 16391

VIP SWIFT Tertiary Site Work

N
W —+— E
S

CIP Location



System: General
Type: SWIFT

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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$32,581	\$0	\$310	\$385	\$718	\$2,829	\$24,494	\$3,845	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will design and construct the necessary site preparation, grading, and debris removal to prepare the former Lambert's Point Golf Course site adjacent to VIP treatment plant for SWIFT tertiary treatment facilities.

PROJECT JUSTIFICATION

VIP treatment plant is land constrained. A portion of the former Lambert's Point Golf Course, adjacent to the treatment plant, was purchased for treatment expansion including SWIFT facilities. Prior to redevelopment as a golf course, the parcel was used as a landfill from prior to 1965 until its closure around 1980. Separate planning, design, and construction will allow this project to proceed prior to the construction of treatment facilities.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

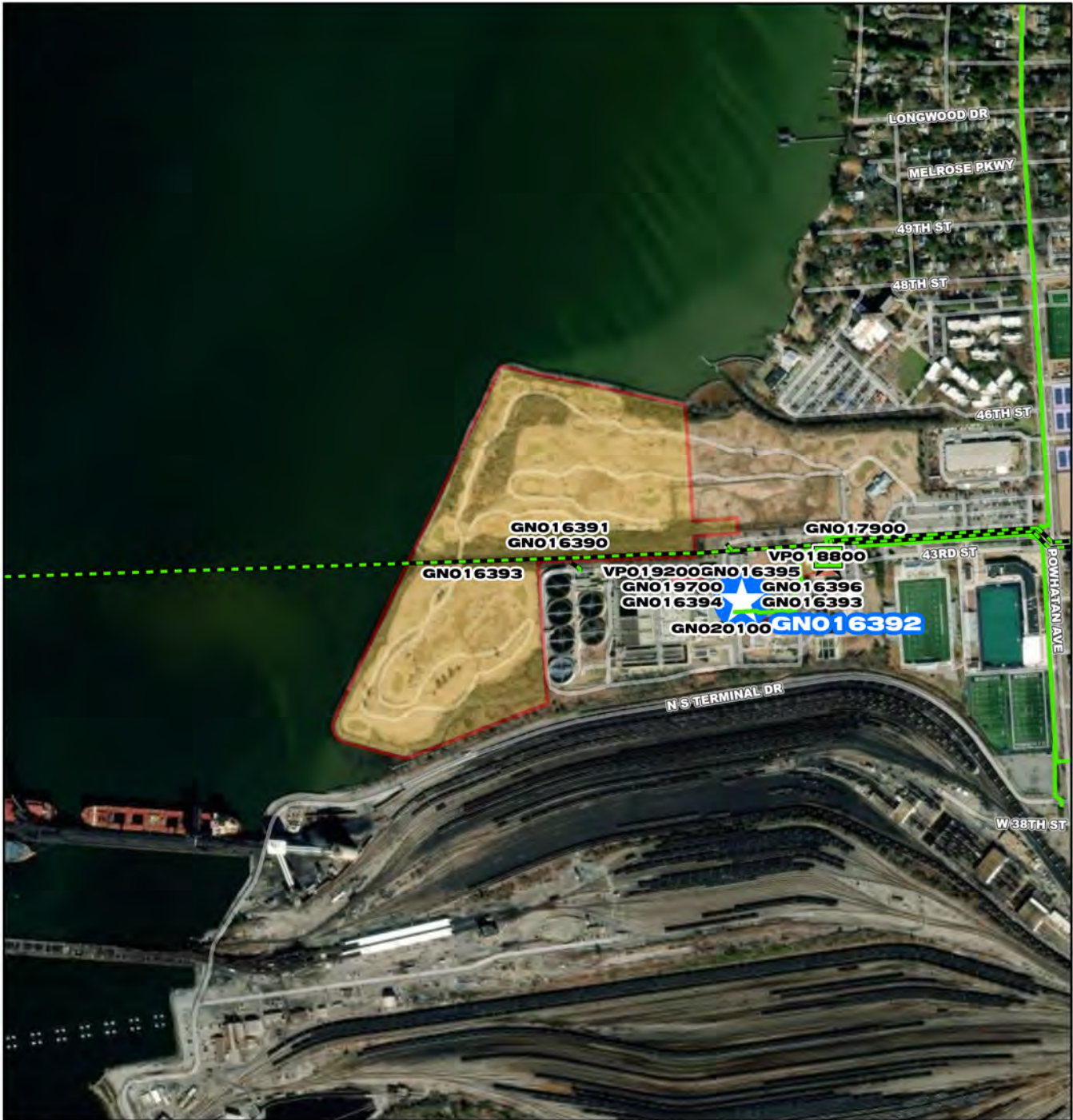
PROPOSED SCHEDULE START DATE

PrePlanning 08/18/2022
PER 12/11/2023
Design Delay
Design 01/01/2025
Bid Delay
PreConstruction 11/01/2026
Construction 03/01/2027
Closeout 12/01/2028

COST ESTIMATE

Cost Estimate Class:

PrePlanning	\$0
PER	\$560,000
Design	\$928,000
PreConstruction	\$33,000
Construction	\$31,060,000
Closeout	\$0
Est. Program Cost	\$32,581,000
Contingency Budget	\$6,516,200
Est. Project Costs	\$39,097,200



GNO16392

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station

0 250 500 1,000 1,500 2,000 Feet

GNO 1 6392

VIP SWIFT Tertiary Facility

N
W E
S

CIP Location



System: VIP
Type: SWIFT

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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$323,886	\$0	\$0	\$0	\$2,946	\$6,429	\$458	\$13,938	\$110,904	\$136,137	\$53,074	\$0

PROJECT DESCRIPTION

This project will include the design, construction, and commissioning of the initial phase of SWIFT implementation, including tertiary treatment comprised of coagulation, flocculation, and sedimentation followed by granular media filters.

PROJECT JUSTIFICATION

This project will support HRSD's nutrient management strategy for meeting the 2032 Lower James River Basin total phosphorus discharge limits.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	
PER	
Design Delay	
Design	11/01/2024
Bid Delay	
PreConstruction	11/01/2026
Construction	12/01/2028
Closeout	07/01/2032

COST ESTIMATE

Cost Estimate Class:	Class 5
PrePlanning	\$0
PER	\$0
Design	\$9,525,100
PreConstruction	\$308,000
Construction	\$314,052,900
Closeout	\$0
Est. Program Cost	\$323,886,000
Contingency Budget	\$65,852,600
Est. Project Costs	\$389,738,600

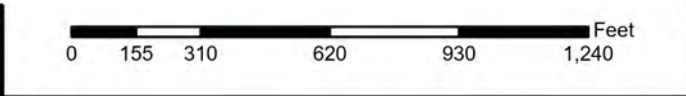


GNO 16393

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 1 6393

VIP SWIFT Advanced Water Treatment Facility

N
W E
S

CIP Location



System: General
Type: SWIFT

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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will include the design, construction, and commissioning of advanced water treatment facilities needed to produce SWIFT Water at Virginia Initiative Plant, including ozone contact, granular activated carbon, ultraviolet disinfection.

PROJECT JUSTIFICATION

VIP SWIFT Advanced Water Treatment is needed to reduce nutrients entering the Chesapeake Bay, augment the groundwater supply, reduce the rate of ground subsidence, protect groundwater from saltwater intrusion, and support Virginia's economy.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

Contacts-Requesting Dept: General Manager
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

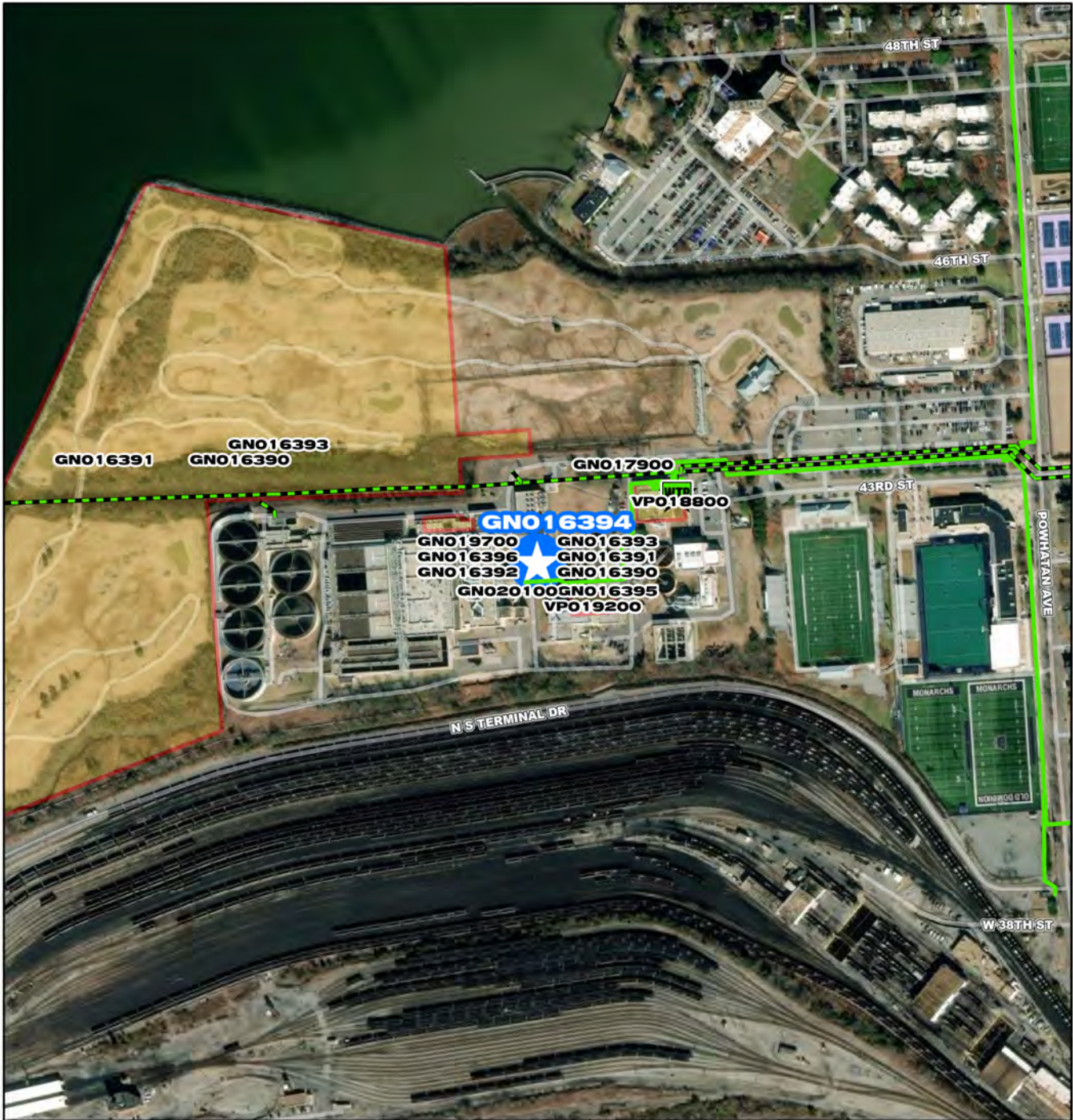
PROPOSED SCHEDULE START DATE

PrePlanning 09/01/2038
PER 02/01/2039
Design Delay
Design 12/01/2039
Bid Delay
PreConstruction 05/01/2042
Construction 05/01/2042
Closeout 11/01/2045

COST ESTIMATE

Cost Estimate Class:

PrePlanning	\$0
PER	\$5,748,000
Design	\$10,095,000
PreConstruction	\$330,000
Construction	\$333,454,000
Closeout	\$0
Est. Program Cost	\$349,627,000
Contingency Budget	\$69,925,400
Est. Project Costs	\$419,552,400

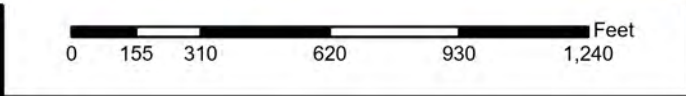


GNO 16394

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 16394

VIP Recharge Wells Land Acquisition

CIP Location



System: VIP
Type: SWIFT

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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$10,300	\$0	\$0	\$0	\$0	\$1,650	\$4,846	\$3,803	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will fund the purchase of land needed for approximately nine off-site recharge wells and two monitoring well sites. It is assumed that five recharge wells are feasible on the Lambert's Point Golf Course property owned by HRSD.

PROJECT JUSTIFICATION

VIP Recharge Wells are required for managed aquifer recharge using SWIFT Water. The monitoring wells are required by permit.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

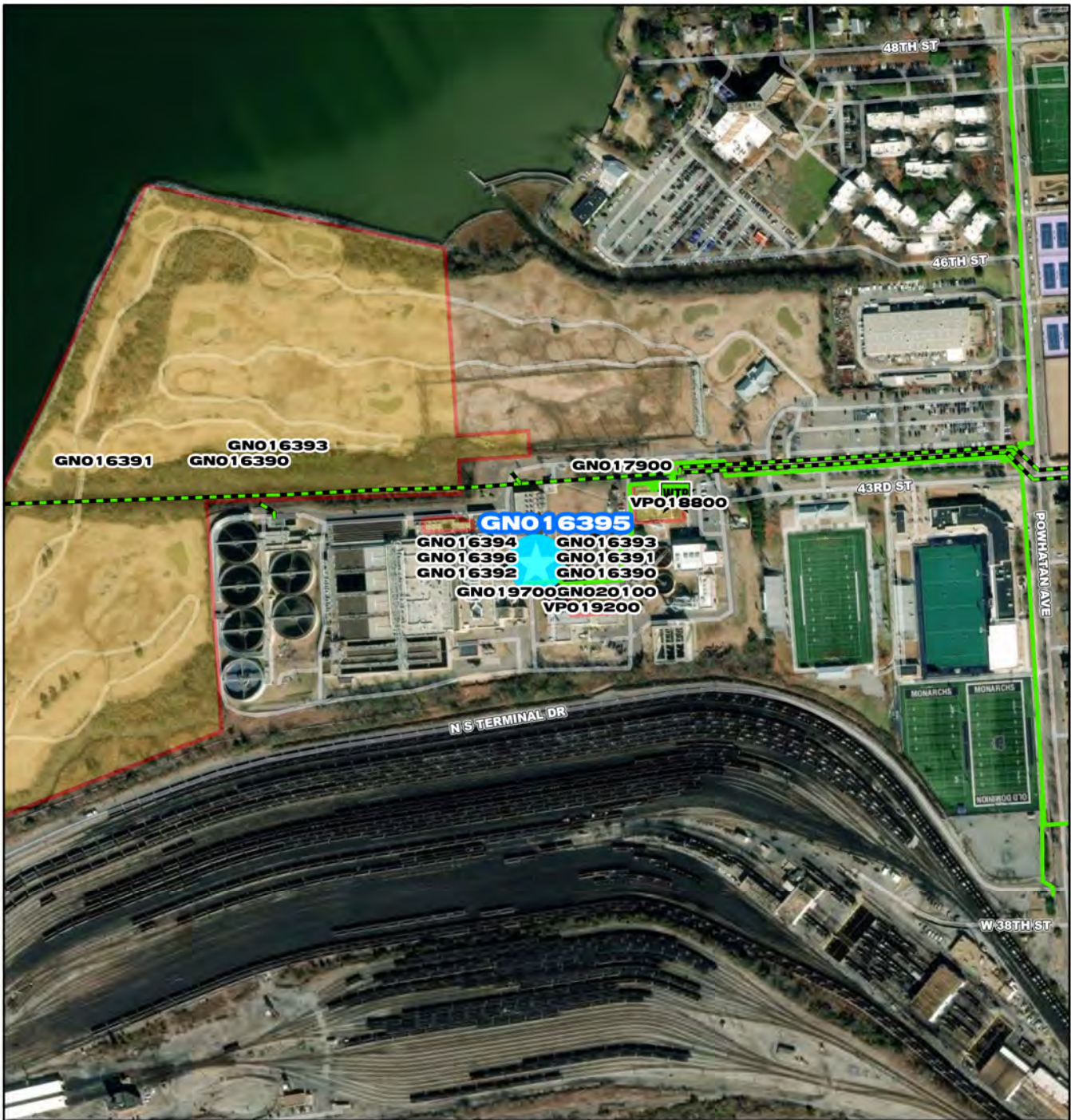
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning
PER
Design Delay
Design 07/01/2026
Bid Delay
PreConstruction
Construction
Closeout

COST ESTIMATE

Cost Estimate Class:	Class 5
PrePlanning	\$0
PER	\$0
Design	\$10,300,000
PreConstruction	\$0
Construction	\$0
Closeout	\$0
Est. Program Cost	\$10,300,000
Contingency Budget	\$2,060,000
Est. Project Costs	\$12,360,000

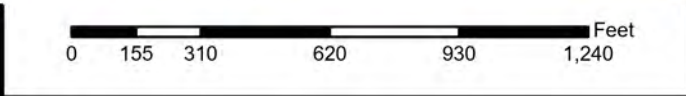


GNO16395

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 1 6395

VIP Recharge Wells

N
W E
S

CIP Location



System: General
Type: SWIFT

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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will include the design and construction of approximately fourteen recharge wells and two monitoring well sets; services for the development, logging, testing, and conditioning of wells associated with SWIFT at VIP. The scope does not include well site development or the mechanical equipment associated with the conveyance of SWIFT water up to and into the wells.

PROJECT JUSTIFICATION

VIP Recharge Wells are required for managed aquifer recharge using SWIFT Water. The monitoring wells are required by permit.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

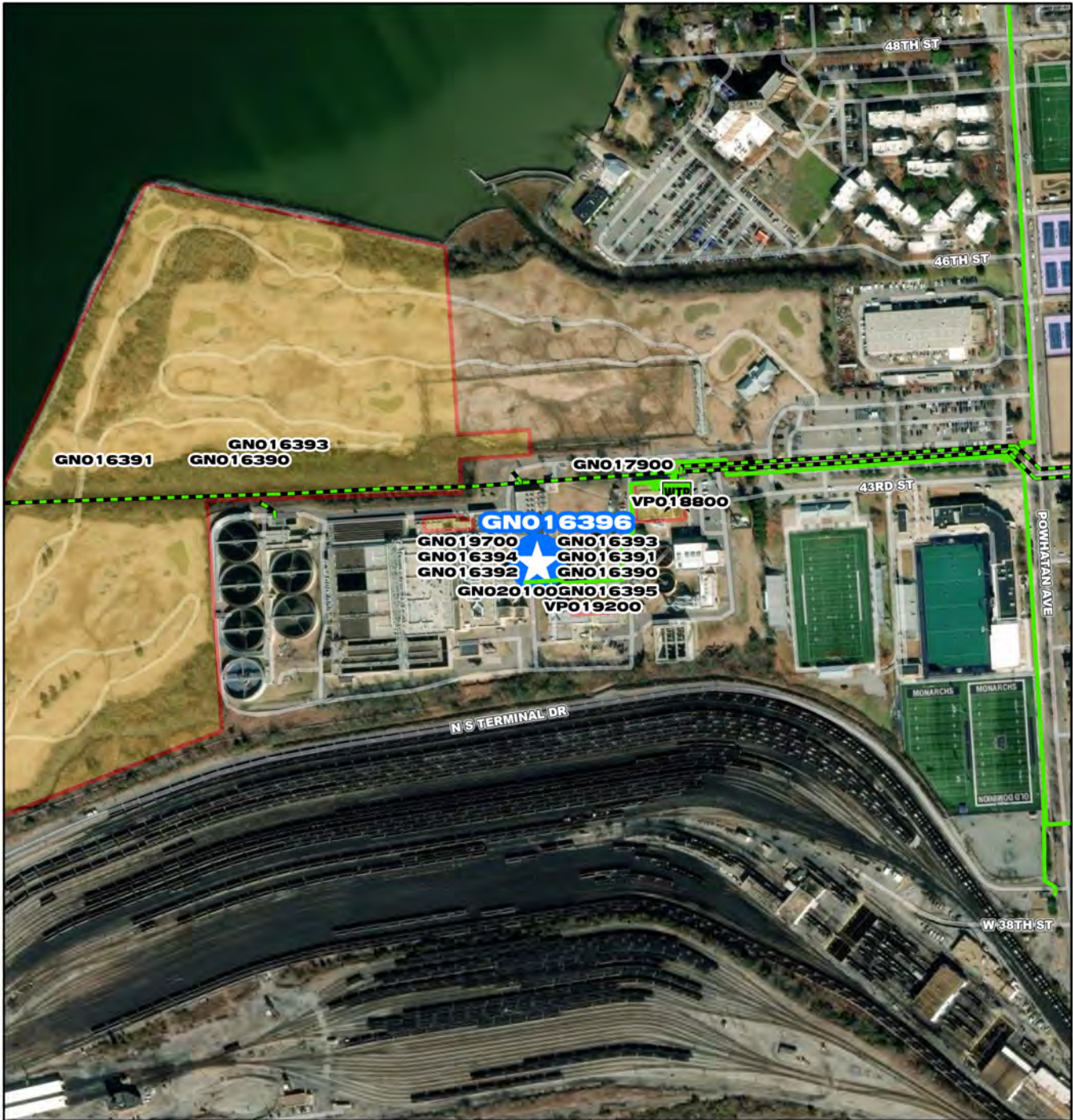
PROPOSED SCHEDULE START DATE

PrePlanning 10/01/2039
PER 09/01/2040
Design Delay
Design 01/01/2040
Bid Delay
PreConstruction 05/01/2042
Construction 09/01/2042
Closeout 01/01/2045

COST ESTIMATE

Cost Estimate Class:

PrePlanning	\$0
PER	\$1,100,000
Design	\$2,145,000
PreConstruction	\$38,500
Construction	\$149,205,788
Closeout	\$0
Est. Program Cost	\$152,489,288
Contingency Budget	\$15,276,429
Est. Project Costs	\$167,765,717

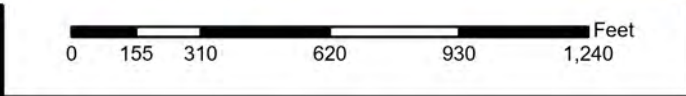


GNO 16396

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 1 6396

VIP Recharge Wells Integration

N
W E
S

CIP Location



System: VIP
Type: SWIFT

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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will design and construct the process mechanical elements, mechanical, civil/site, structural/architectural, electrical and instrumentation and control for the infrastructure required to convey SWIFT water from the VIP SWIFT facility to the off-site managed aquifer recharge wells and monitoring wells.

PROJECT JUSTIFICATION

VIP Recharge Wells are required for managed aquifer recharge using SWIFT Water. The monitoring wells are required by permit. Separation of this project from the well drilling and advanced water treatment facility projects allows for a focused selection of delivery methods and contract requirements for off-site work.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	10/01/2039
PER	09/01/2040
Design Delay	
Design	01/01/2041
Bid Delay	
PreConstruction	05/01/2042
Construction	09/01/2042
Closeout	01/01/2045

COST ESTIMATE

Cost Estimate Class:	Class 5
PrePlanning	\$0
PER	\$0
Design	\$7,273,000
PreConstruction	\$0
Construction	\$77,045,000
Closeout	\$0
Est. Program Cost	\$84,318,000
Contingency Budget	\$16,863,600
Est. Project Costs	\$101,181,600



System: General
Type: Biosolids

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$6,244	\$1,344	\$1,400	\$2,800	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will replace Dewatering Centrifuges (DCEN) Nos. 1 and 3 at the James River Treatment Plant (JRTP). One existing Sharples DS706 Centrifuges and required accessory equipment will be uninstalled, refurbished, and installed at the Atlantic Treatment Plant (ATP) to serve as a Pre-dewatering Centrifuge prior to Thermal Hydrolysis. The second existing Sharples DS706 and required accessory equipment will be removed and relocated to storage with an HRSD facility for future rehabilitation and reuse by HRSD.

PROJECT JUSTIFICATION

Replacing DCEN Nos. 1 and 3 will provide JRTP with like dewatering equipment, instrumentation/controls, and operations across all dewatering systems as DCEN No. 2 was recently replaced in 2020 as part of another Capital project (AT013500). The recently installed DCEN No. 2 was selected to provide suitable capacity for current and anticipated future plant demands (including the incorporation of SWIFT water treatment residuals) and has demonstrated to produce comparable performance to existing DCEN Nos. 1 and 3 at substantially lower energy usage. The Sharples DS706 centrifuges to be replaced were installed in 1994 and have been well maintained throughout their service life to date. As a result, these centrifuges have residual useful life that will be leveraged for other needs within HRSD, including as a third pre-dewatering centrifuge at the ATP. This project will allow for leveraging of existing assets for established needs, renewing dewatering at JRTP with right-sized equipment that improves resource and operational efficiencies.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Angela Weatherhead
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/02/2018
PER	01/01/2020
Design Delay	04/01/2020
Design	05/01/2020
Bid Delay	12/01/2020
PreConstruction	09/01/2023
Construction	01/01/2024
Closeout	10/01/2025

COST ESTIMATE

Cost Estimate Class:	Class 1
PrePlanning	\$0
PER	\$0
Design	\$643,924
PreConstruction	\$0
Construction	\$5,600,000
Closeout	\$0
Est. Program Cost	\$6,243,924
Contingency Budget	\$560,000
Est. Project Costs	\$6,803,924



**Interceptor Systems PS Control and SCADA Upgrades
and Enhancements Phase II**

PR_GN017200

System: General
Type: Software and Technology

Driver Category: Performance Upgrades
Project Phase: Construction
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$9,270	\$6,827	\$2,443	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project provides for implementation of Phase II of the Interceptor System Supervisory Control and Data Acquisition System (SCADA). This project will replace approximately 130 control panels at remote HRSD facilities. The project will also provide replacement of the current top-end SCADA software and hardware.

PROJECT JUSTIFICATION

The existing remote facilities require replacement of the control panels and SCADA system to provide operational improvements and replace aging equipment that was installed in the 1990s. The current design of the control panels at the remote facilities does not promote adequate data acquisition, supervisory control, or emerging control technologies.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Chris Stephan
Contacts-Managing Dept: Operations-Interceptors

PROPOSED SCHEDULE START DATE

PrePlanning	05/01/2020
PER	05/01/2020
Design Delay	05/01/2020
Design	05/01/2020
Bid Delay	05/01/2020
PreConstruction	05/01/2020
Construction	07/01/2020
Closeout	04/01/2024

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	\$0
PER	\$0
Design	\$0
PreConstruction	\$0
Construction	\$9,200,000
Closeout	\$70,000
Est. Program Cost	\$9,270,000
Contingency Budget	\$2,290,100
Est. Project Costs	\$11,560,100



System: General
Type: Biosolids

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$17,879	\$0	\$0	\$0	\$0	\$0	\$0	\$9,080	\$4,540	\$4,259	\$0	\$0

PROJECT DESCRIPTION

This project will serve as the program for replacement of centrifuges at each treatment plant. Plant specific projects will be created out of this program. The funding for this program will be reduced as the plant specific projects are created.

PROJECT JUSTIFICATION

Each of the large plants currently have centrifuges that were installed anywhere from 20 to 40 years ago and repairs are becoming difficult and expensive. Replacement will be required for two units per plant over the next 15 years.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

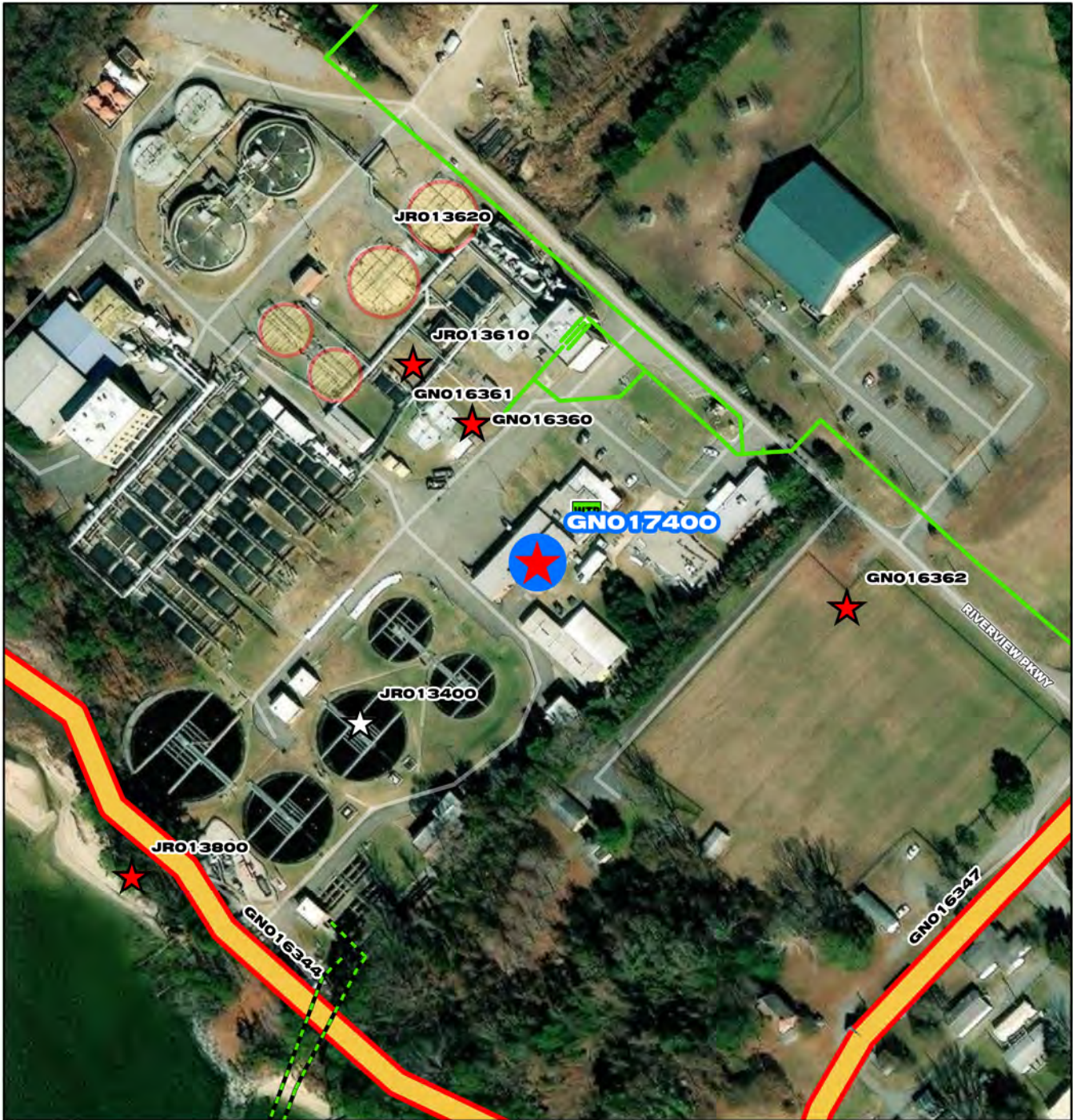
Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Christopher Wilson
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/03/2017
PER	07/03/2017
Design Delay	07/03/2017
Design	07/03/2017
Bid Delay	07/03/2017
PreConstruction	07/03/2017
Construction	08/02/2021
Closeout	06/01/2031

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	\$0
PER	\$0
Design	\$0
PreConstruction	\$0
Construction	\$17,879,000
Closeout	\$0
Est. Program Cost	\$17,879,000
Contingency Budget	\$3,575,800
Est. Project Costs	\$21,454,800

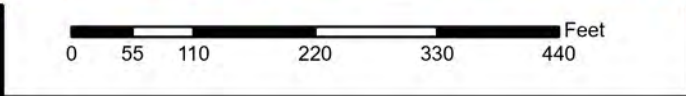


GNO17400

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 17400

**Treatment Plant Dewatering
Replacement Phase III**

N
W E
S

CIP Location



System: General
Type: Biosolids

Driver Category: Capacity Improvements
Project Phase: PER
Regulatory: Nutrient Reduction

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$3,533	\$278	\$3,255	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project includes evaluation, design, and construction relating to the modification of the solids handling building for the installation of two HRSD-owned final dewatering centrifuges. Additionally, the project will include rehabilitation as needed of HRSD-owned centrifuges currently installed and in operation at the James River Treatment Plant (JRTP) (DS706) and Chesapeake-Elizabeth Treatment Plant (CETP) (PM76000). These centrifuges will be installed in locations with no currently installed centrifuges at Virginia Initiative Plant (VIP), requiring addition of cake conveyors and other appurtenance to feed solids and polymer to the centrifuges, to convey dewatered solids cake to the multiple hearth furnace, and to connect to the centrate drain.

PROJECT JUSTIFICATION

This project will increase capacity of solids handling systems at the VIP by increasing hydraulic throughput of solids dewatering by the installation of larger centrifuges. Currently, primary sludge pumping and activated solids wastage is intermittently limited by hydraulic throughput limitations of existing dewatering centrifuges. Limitations to solids pumping and wastage due to existing centrifuge hydraulic capacity have caused upset to nutrient removal performance at VIP

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Angela Weatherhead
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	10/01/2021
PER	10/05/2021
Design Delay	10/06/2021
Design	06/18/2022
Bid Delay	10/02/2022
PreConstruction	06/13/2023
Construction	08/02/2023
Closeout	06/03/2024

COST ESTIMATE

Cost Estimate Class:	Class 4
PrePlanning	\$0
PER	\$272,984
Design	\$0
PreConstruction	\$10,000
Construction	\$3,250,000
Closeout	\$0
Est. Program Cost	\$3,532,984
Contingency Budget	\$1,000,000
Est. Project Costs	\$4,532,984



System: General
Type: Facilities, Buildings and Capital Equipment

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$10,696	\$0	\$0	\$2,698	\$2,469	\$1,833	\$1,843	\$1,853	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will provide funding for the scheduled replacement of fleet assets.

PROJECT JUSTIFICATION

Fleet assets are on a scheduled replacement plan. This program will ensure there is funding in each fiscal year to meet the replacement schedule.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Operations-Support Systems
Contacts-Dept Contacts: Lee Heath
Contacts-Managing Dept: Operations-Support Systems

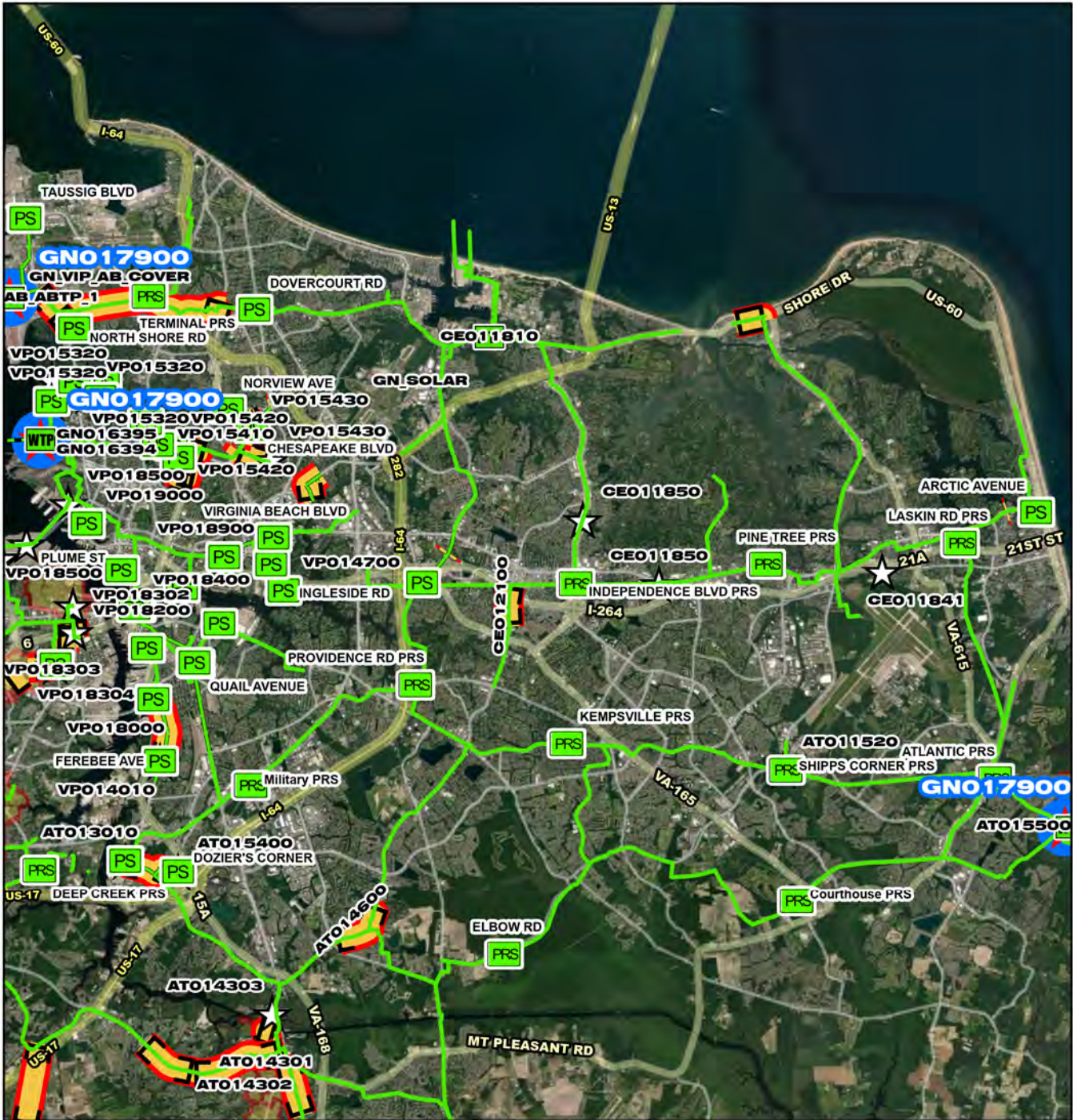
PROPOSED SCHEDULE START DATE

PrePlanning 07/01/2020
PER 07/01/2020
Design Delay 07/01/2020
Design 07/01/2020
Bid Delay 07/01/2020
PreConstruction 07/01/2020
Construction 07/01/2020
Closeout 06/01/2029

COST ESTIMATE

Cost Estimate Class:

PrePlanning	\$0
PER	\$0
Design	\$0
PreConstruction	\$0
Construction	\$10,696,000
Closeout	\$0
Est. Program Cost	\$10,696,000
Contingency Budget	\$0
Est. Project Costs	\$10,696,000

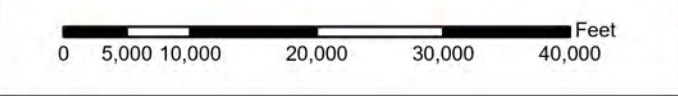


GNO 17900

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 17900

Solids System Improvements for Army Base MHI Offline

CIP Location



System: General
Type: Biosolids

Driver Category: Clean Air Act
Project Phase: Construction
Regulatory: Clean Air Act

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$5,586	\$2,824	\$2,762	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

Design and installation of thickened liquid solids load out facilities at Army Base Treatment Plant (ABTP) and thickened liquid solids load in facilities at Atlantic Treatment Plant (ATP) and Virginia Initiative Plant (VIP). Completed facilities will leverage existing solids handling capacity at receiving plants to remove solids handling facilities at ABTP from operation (including dewatering and multiple hearth incinerator (MHI) operations). Utilizing improvements will require contracting of thickened liquid solids hauling from ABTP to ATP and VIP.

PROJECT JUSTIFICATION

Project is projected to reduce net annual operating expenses for ABTP solids management by approximately \$100,000/year. Removing ABTP solids handling systems from operation will reduce baseline operational staffing requirements at ABTP by four (4) Plant Operators, one (1) Maintenance Operator, one (1) Maintenance Operator Assistant; reduce electrical energy requirements at ABTP by 27 percent; and reduce net carbon emissions associated with ABTP solids management (inclusive of contract hauling of thickened liquid sludge) by 2,880 tons CO2e/year (35% of current ABTP net annual emissions). Removing ABTP MHI from operation mitigates regulatory risk of CAA129 MACT standards non-compliance.

FUNDING TYPE

Funding Type: VCWRLF

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Rebecca Currall
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2020
PER	10/15/2020
Design Delay	05/17/2021
Design	05/19/2021
Bid Delay	02/11/2022
PreConstruction	05/02/2022
Construction	08/10/2022
Closeout	05/01/2024

COST ESTIMATE

Cost Estimate Class:	Class 1
PrePlanning	\$0
PER	\$44,864
Design	\$573,028
PreConstruction	\$17,938
Construction	\$4,950,000
Closeout	\$0
Est. Program Cost	\$5,585,830
Contingency Budget	\$525,000
Est. Project Costs	\$6,110,830



System: General
Type: Facilities, Buildings and Capital Equipment

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Pre Planning
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$2,868	\$2,718	\$150	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will provide for replacement of aging fleet vehicles and purchase of additional vehicles to meet the needs of the organization. An itemized list of vehicles to be replaced or added is maintained by the Support Systems Division.

PROJECT JUSTIFICATION

Replacement of aging vehicles will result in lower repair costs and the purchase of additional vehicles will provide for increased staff efficiency.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Operations-Support Systems
Contacts-Dept Contacts: Lee Heath
Contacts-Managing Dept: Operations-Support Systems

PROPOSED SCHEDULE START DATE

PrePlanning
PER
Design Delay
Design
Bid Delay
PreConstruction
Construction 07/01/2022
Closeout 08/01/2024

COST ESTIMATE

Cost Estimate Class:

PrePlanning	\$92,648
PER	\$0
Design	\$0
PreConstruction	\$0
Construction	\$2,775,272
Closeout	\$0
Est. Program Cost	\$2,867,920
Contingency Budget	\$0
Est. Project Costs	\$2,867,920



System: General
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$1,371	\$0	\$449	\$922	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project consists of the rehabilitation of existing cathodic protection systems (galvanic) intended to protect critical buried infrastructure from exterior corrosion. Phase I Rehabilitation will consist of eleven (11) higher risk (consequence of failure) interceptor force main cathodic protection (CP) systems identified to be currently providing inadequate protection in the FY21 Cathodic Protection Evaluations. Interceptor force main CP systems requiring rehabilitation will consist of NF-015, NF-170, NF-172, NF-197, NF-204, NF-205, NF-215, NF-216, NF-217, NF-223, NF-961. Galvanic anodes and test stations installed to provide hot spot protection at appurtenance and repair locations (Post initial pipeline construction) are identified to be lower priority and are not included in the rehabilitation phasing.

PROJECT JUSTIFICATION

HRSD's Management, Operations, and Maintenance (MOM) Program requires cathodic protection systems to be inspected and replaced as needed to reduce the rate of exterior corrosion of interceptor force main piping. Minor repairs are commonly performed during bi-annual evaluations to ensure the cathodic protection systems are functional and provide the ability for HRSD to monitor protection levels. While the systems are maintained on a regular basis, the level of protection provided by the identified galvanic systems are determined to be inadequate based on FY21 evaluation results. Rehabilitation of the existing galvanic systems (supplemental anodes) is required to increase protection of buried force mains and minimize the potential of future failures due to external corrosion.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Phil Hughes
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	12/01/2022
PER	02/02/2023
Design Delay	07/01/2023
Design	07/01/2023
Bid Delay	02/02/2024
PreConstruction	02/02/2024
Construction	05/02/2024
Closeout	01/01/2025

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	\$0
PER	\$0
Design	\$122,960
PreConstruction	\$18,444
Construction	\$1,229,600
Closeout	\$0
Est. Program Cost	\$1,371,004
Contingency Budget	\$245,920
Est. Project Costs	\$1,616,924



System: General
Type: Pipelines

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$1,548	\$0	\$0	\$153	\$1,396	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project consists of the rehabilitation of existing cathodic protection systems (galvanic) intended to protect critical buried infrastructure from exterior corrosion. Phase I Rehabilitation will consist of 12 of the 23 higher risk (consequence of failure) interceptor force main cathodic protection (CP) systems identified to be currently providing inadequate protection in the FY21 Cathodic Protection Evaluations. Interceptor force main CP systems requiring rehabilitation will consist of SF-024, SF-081, SF-082, SF-083, SF-283, SF-084, SF-126, SF-172, SF 225, SF-260, SF-268, and SF-281. Galvanic anodes and test stations installed to provide hot spot protection at appurtenance and repair locations (Post initial pipeline construction) are identified to be lower priority and are not included in the rehabilitation phasing.

PROJECT JUSTIFICATION

HRSD's Management, Operations, and Maintenance (MOM) Program requires cathodic protection systems to be inspected and replaced as needed to reduce the rate of exterior corrosion of interceptor force main piping. Minor repairs are commonly performed during bi-annual evaluations to ensure the cathodic protection systems are functional and provide the ability for HRSD to monitor protection levels. While the systems are maintained on a regular basis, the level of protection provided by the identified galvanic systems are determined to be inadequate based on FY21 evaluation results. Rehabilitation of the existing galvanic systems (supplemental anodes) is required to increase protection of buried force mains and minimize the potential of future failures due to external corrosion.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Phil Hughes
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning 03/01/2024
PER 05/02/2024
Design Delay 10/02/2024
Design 10/02/2024
Bid Delay 05/01/2025
PreConstruction 05/01/2025
Construction 08/01/2025
Closeout 04/02/2026

COST ESTIMATE

Cost Estimate Class:
PrePlanning \$0
PER \$0
Design \$138,860
PreConstruction \$20,829
Construction \$1,388,600
Closeout \$0
Est. Program Cost \$1,548,289
Contingency Budget \$277,720
Est. Project Costs \$1,826,009



**South Shore Galvanic Cathodic Protection
Rehabilitation Phase II**

PR_GN018800

System: General
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$1,548	\$0	\$99	\$1,276	\$174	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project consists of the rehabilitation of existing cathodic protection systems (galvanic) intended to protect critical buried infrastructure from exterior corrosion. Phase 2 Rehabilitation will consist of 11 of the 23 higher risk (consequence of failure) interceptor force main cathodic protection (CP) systems identified to be currently providing inadequate protection in the FY21 Cathodic Protection Evaluations. Interceptor force main CP systems requiring rehabilitation will consist of SF-216, SF-223, SF-235, SF-261, SF-262, SF-263, SF-265, SF 270, SF-274, SF-275, and SF-284. Galvanic anodes and test stations installed to provide hot spot protection at appurtenance and repair locations (Post initial pipeline construction) are identified to be lower priority and are not included in the rehabilitation phasing.

PROJECT JUSTIFICATION

HRSD's Management, Operations, and Maintenance (MOM) Program requires cathodic protection systems to be inspected and replaced as needed to reduce the rate of exterior corrosion of interceptor force main piping. Minor repairs are commonly performed during bi-annual evaluations to ensure the cathodic protection systems are functional and provide the ability for HRSD to monitor protection levels. While the systems are maintained on regular basis, the level of protection provided by the identified galvanic systems are determined to be inadequate based on FY21 evaluation results. Rehabilitation of the existing galvanic systems (supplemental anodes) is required to increase protection of buried force mains and minimize the potential of future failures due to external corrosion.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Phil Hughes
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/03/2023
PER	09/01/2023
Design Delay	02/02/2024
Design	02/02/2024
Bid Delay	09/02/2024
PreConstruction	09/02/2024
Construction	12/01/2024
Closeout	08/04/2025

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	\$0
PER	\$0
Design	\$138,860
PreConstruction	\$20,829
Construction	\$1,388,600
Closeout	\$0
Est. Program Cost	\$1,548,289
Contingency Budget	\$277,720
Est. Project Costs	\$1,826,009



Pump Station Motor Control Center Replacements - Phase I

PR_GN018900

System: General
Type: Electrical

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$2,864	\$0	\$1,575	\$1,289	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project is to replace Motor Control Centers (MCCs) at various pump stations located on the North and South Shore that have exhibited signs of copper bus bar deterioration. The bus bar condition was identified while performing annual maintenance inspections.

PROJECT JUSTIFICATION

This project will improve the overall reliability of the North Shore and South Shore collection systems to prevent disruptions to the electrical distribution system, and safeguard HRSD employees from potential exposure to an arc flash event. This project will include the replacement of variable frequency drives (VFD's), motor control center (MCC), and associated electrical equipment. Lastly, the project will involve the installation of an air purification system to help mitigate hydrogen sulfide (H2S) gases which is the leading cause of copper bus bar deterioration.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-EEM
Contacts-Dept Contacts: Sherman Pressey
Contacts-Managing Dept: Operations-EEM

PROPOSED SCHEDULE START DATE

PrePlanning
PER
Design Delay
Design
Bid Delay
PreConstruction 05/19/2023
Construction 08/25/2023
Closeout 04/18/2025

COST ESTIMATE

Cost Estimate Class:
PrePlanning \$0
PER \$0
Design \$0
PreConstruction \$0
Construction \$2,863,500
Closeout \$0
Est. Program Cost \$2,863,500
Contingency Budget \$572,700
Est. Project Costs \$3,436,200



**Regional Granular Activated Carbon Reactivation
Facility Study Phase I**

PR_GN019100

System: General
Type: Water Reuse

Driver Category: Cost Recovery
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$410	\$345	\$65	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

Preliminary study to investigate the feasibility and practicality of developing a granular activated carbon (GAC) reactivation facility that would accept and treat exhausted GAC for the Hampton Roads region.

PROJECT JUSTIFICATION

With recent PFAS regulatory developments, the demand for GAC continues to grow. The U.S. EPA released lifetime health advisories (LHAs) for four PFAS in June of 2022 and is expected to provide draft maximum contaminant levels (MCLs) for multiple PFAS by Fall of 2022. These regulatory developments will advance implementation of GAC for several Virginia drinking water utilities trying to manage PFAS in finished waters. HRSD will also have GAC reactivation demands from its planned SWIFT facilities at James River and Nansemond. HRSD is considering serving the region with a centralized GAC reactivation facility that could accept, process, and redistribute reactivated GAC to water utilities in the area.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Shirley Smith
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning 11/01/2022
PER
Design Delay
Design
Bid Delay
PreConstruction
Construction
Closeout

COST ESTIMATE

Cost Estimate Class: Class 5
PrePlanning \$410,000
PER \$0
Design \$0
PreConstruction \$0
Construction \$0
Closeout \$0
Est. Program Cost \$410,000
Contingency Budget \$0
Est. Project Costs \$410,000



**Atlantic TP Digester and Nansemond TP Clarifier
Coating Improvements**

PR_GN019200

System: General
Type: Wastewater Treatment

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Pre Planning
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$1,200	\$667	\$533	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will provide services to coat the Clarifier Recycle Building at the Nansemond Treatment Plant and restoration of the #4 Digester at the Atlantic Treatment Plant.

PROJECT JUSTIFICATION

Project will provide for application and installation of protective coating systems to enhance the useability and structural integrity of digester #4 at the Atlantic Treatment Plant and the Clarifier Recycling Building at the Nansemond Treatment Plant.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Support Systems
Contacts-Dept Contacts: Ray Holmes
Contacts-Managing Dept: Operations-Support Systems

PROPOSED SCHEDULE START DATE

PrePlanning
PER
Design Delay
Design
Bid Delay
PreConstruction
Construction 11/01/2022
Closeout 11/01/2023

COST ESTIMATE

Cost Estimate Class:	Class 1
PrePlanning	\$0
PER	\$0
Design	\$0
PreConstruction	\$0
Construction	\$1,200,000
Closeout	\$0
Est. Program Cost	\$1,200,000
Contingency Budget	\$0
Est. Project Costs	\$1,200,000



System: General
Type: Facilities, Buildings and Capital Equipment

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$2,428	\$0	\$2,428	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will provide for replacement of aging fleet vehicles and purchase of additional vehicles to meet the needs of the organization. An itemized list of vehicles to be replaced or added is maintained by the Support Systems Division.

PROJECT JUSTIFICATION

Replacement of aging vehicles will result in lower repair costs and the purchase of additional vehicles will provide for increased staff efficiency.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Operations-Support Systems
Contacts-Dept Contacts: Lee Heath
Contacts-Managing Dept: Operations-Support Systems

PROPOSED SCHEDULE START DATE

PrePlanning
PER
Design Delay
Design
Bid Delay
PreConstruction
Construction 07/01/2023
Closeout

COST ESTIMATE

Cost Estimate Class:	Class 3
PrePlanning	\$0
PER	\$0
Design	\$0
PreConstruction	\$0
Construction	\$2,428,100
Closeout	\$0
Est. Program Cost	\$2,428,100
Contingency Budget	\$242,810
Est. Project Costs	\$2,670,910



System: General
 Type: Facilities, Buildings and Capital Equipment

Driver Category: Performance Upgrades
 Project Phase: Proposed
 Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$6,301	\$0	\$707	\$707	\$707	\$707	\$707	\$707	\$707	\$707	\$648	\$0

PROJECT DESCRIPTION

This project will provide funding for analytical equipment for the Water Quality Department.

PROJECT JUSTIFICATION

The sampling and analytical equipment will support various projects and programs led by the Water Quality Department. This program will ensure there is funding in each fiscal year to meet the Department's needs.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Water Quality
 Contacts-Dept Contacts: Jamie Mitchell
 Contacts-Managing Dept: Water Quality

PROPOSED SCHEDULE START DATE

PrePlanning
 PER
 Design Delay
 Design
 Bid Delay
 PreConstruction
 Construction 07/01/2023
 Closeout

COST ESTIMATE

Cost Estimate Class:	Class 1
PrePlanning	\$0
PER	\$0
Design	\$0
PreConstruction	\$0
Construction	\$6,301,000
Closeout	\$0
Est. Program Cost	\$6,301,000
Contingency Budget	\$0
Est. Project Costs	\$6,301,000



System: General
Type: Facilities, Buildings and Capital Equipment

Driver Category: Performance Upgrades
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$515	\$0	\$515	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will provide for analytical equipment for the Water Quality Department for Fiscal Year 2024.

PROJECT JUSTIFICATION

The sampling and analytical equipment will support various projects and programs led by the Water Quality Department.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Water Quality
Contacts-Dept Contacts: Jamie Mitchell
Contacts-Managing Dept: Water Quality

PROPOSED SCHEDULE START DATE

PrePlanning
PER
Design Delay
Design
Bid Delay
PreConstruction
Construction 07/01/2023
Closeout

COST ESTIMATE

Cost Estimate Class: Class 3
PrePlanning \$0
PER \$0
Design \$0
PreConstruction \$0
Construction \$515,000
Closeout \$0
Est. Program Cost \$515,000
Contingency Budget \$0
Est. Project Costs \$515,000



System: General
Type: Pump Stations

Driver Category: Performance Upgrades
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$9,900	\$0	\$0	\$3,588	\$6,312	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project includes the upgrades necessary to complete the SCADA project and provides additional, necessary functionality. Additional functionality will include VeeterRoot (Emergency Generator - Diesel UST) levels, leak detection, and total fuel quantities; Emergency Generator and ATS Power Management connectivity and graphics; as well as individual VFD network cards and ethernet modbus communication to pump station variable frequency drives.

PROJECT JUSTIFICATION

The original SCADA project was designed and implemented with mostly hard-wired connectivity to the physical hardware and equipment. With today's electronics, ethernet modbus communications are available to this equipment and provide for a more robust and complete operational awareness within the SCADA system. Currently HRSD's VeeterRoot UST Lead detection systems include a wide range of mostly outdated models and alarms. This project will update all systems to the latest model (TLS-350R) and provide the network cards to communicate this data to the top-end SCADA system in a standard format. Leak detection, inner wall annular floats, sump floats, belly tanks, and fuel transfer pump conditions are a necessity for proper management, alarming, and upkeep for each pump station. USTs are regulated by DEQ and these project improvements will provide a means for required leak detection and alarming, and ultimately better fuel management. Emergency Generator, ATS, VFD, and Power Management connectivity is required for total visibility into each pump station's operation and power consumption. Availability of this data through network cards and modbus communications will provide for complete awareness and better overall operations at each pump station.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Chris Stephan
Contacts-Managing Dept: Operations-Interceptors

PROPOSED SCHEDULE START DATE

PrePlanning 07/01/2024
PER 07/01/2024
Design Delay 11/01/2024
Design 11/01/2024
Bid Delay 01/01/2025
PreConstruction 01/01/2025
Construction 03/01/2025
Closeout 06/01/2026

COST ESTIMATE

Cost Estimate Class: Class 5
PrePlanning \$0
PER \$290,000
Design \$1,000,000
PreConstruction \$5,000
Construction \$8,600,000
Closeout \$5,000
Est. Program Cost \$9,900,000
Contingency Budget \$1,710,000
Est. Project Costs \$11,610,000



GNO 19700

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station

Feet

0 155 310 620 930 1,240

GNO 19700

Treatment Plant Dewatering Improvement Phase IV

N
W E
S

CIP Location



System: General
Type: Biosolids

Driver Category: Performance Upgrades
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$3,344	\$0	\$316	\$1,062	\$1,966	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will design and install improvements at the Virginia Initiative Plant to include the addition of two gravity belt thickeners for waste-activated sludge thickening and provide necessary electrical, control, and mechanical improvements to make the system operable.

PROJECT JUSTIFICATION

Wastage of Activated Sludge from the VIP Biological Nutrient Removal (BNR) process is intermittently hydraulically limited by the capacity of dewatering centrifuges and centrate management systems. This project will un-bottleneck the treatment process and allow on-demand wastage of solids from the BNR process, which will improve treatment performance at VIP and stabilize solids handling operations, including centrifuge dewatering and incineration. This improvement will also help VIP to better accommodate hauled liquid primary solids from Army Base Treatment Plant (ABTP) by reducing the overall hydraulic load on the VIP dewatering centrifuges. Feasibility of the proposed improvements has been previously investigated under GN017400 in support of the budget and schedule estimates shown.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

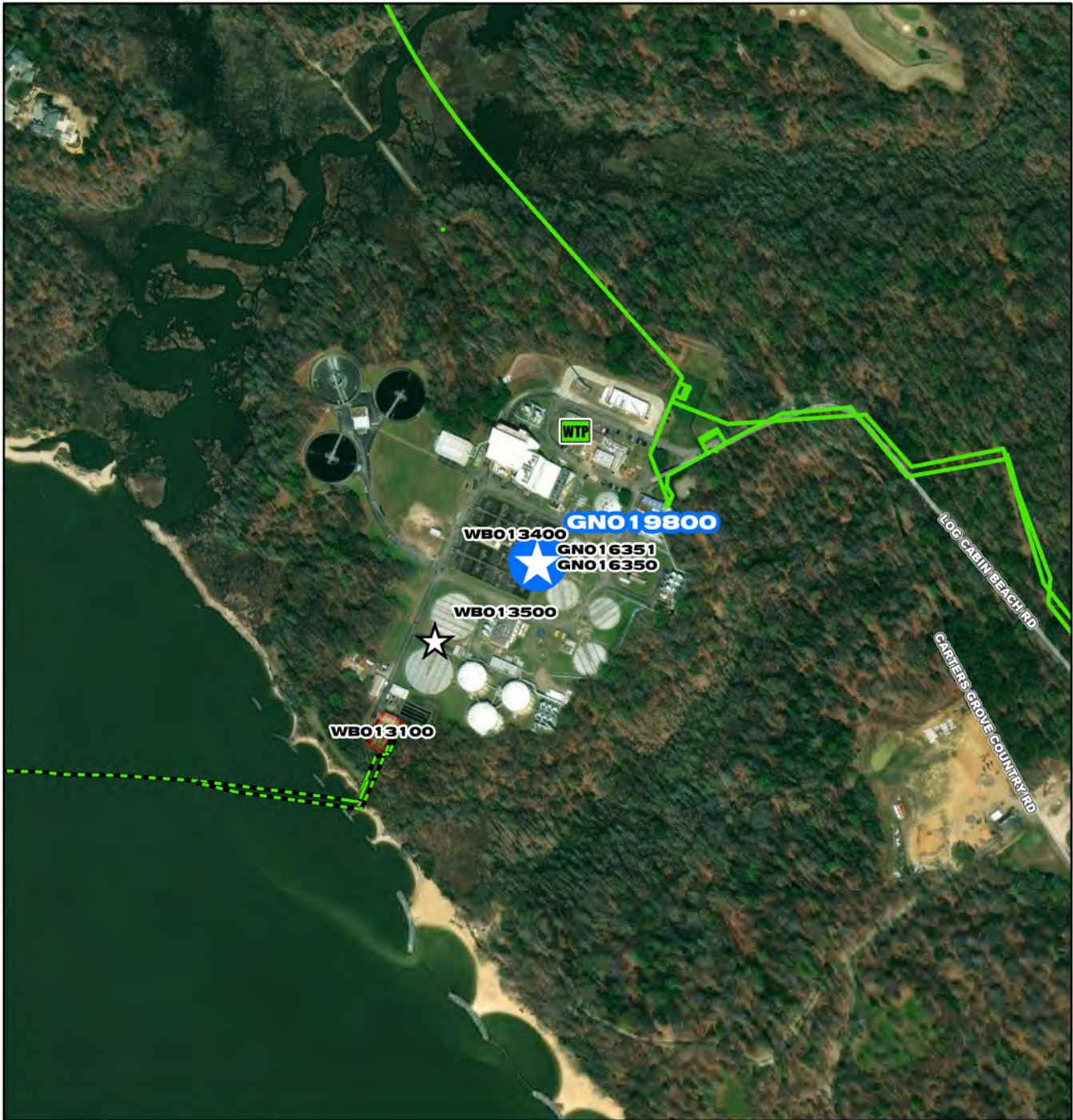
Contacts-Requesting Dept: Operations
Contacts-Dept Contacts: Christopher Wilson
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning
PER 07/01/2023
Design Delay
Design 12/01/2023
Bid Delay
PreConstruction 10/01/2024
Construction 01/01/2025
Closeout 07/01/2026

COST ESTIMATE

Cost Estimate Class:	Class 5
PrePlanning	\$0
PER	\$131,650
Design	\$263,300
PreConstruction	\$0
Construction	\$2,949,231
Closeout	\$0
Est. Program Cost	\$3,344,181
Contingency Budget	\$1,003,000
Est. Project Costs	\$4,347,181

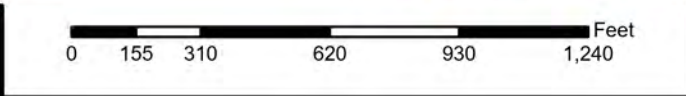


GNO1980

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station



GNO 1980

**Treatment Plant Dewatering
Improvement Phase V**

N
W —+— E
S

CIP Location



System: General
Type: Biosolids

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$3,492	\$0	\$0	\$0	\$330	\$1,109	\$2,053	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will design and install improvements the the Williamsburg Treatment Plant (WBTP) to improve the reliability and operability of existing final dewatering facilities, including conveyance of dewatered solids between dewatering centrifuges and multiple hearth furnace, building ventilation, and improved equipment removal from the dewatering building and from floor-to-floor. The scope of this project will be further developed and optimized under the Conceptual Project Development project.

PROJECT JUSTIFICATION

Currently installed dewatering equipment at WBTP has substantial remaining life, however reliability and operability of peripheral building systems have resulted in downtime in final dewatering and incineration of waste solids. Without improvements to these building systems, continued lack of reliability and deterioration of dewatering equipment is expected leading to additional operational and capital costs.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations
Contacts-Dept Contacts: Christopher Wilson
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	
PER	07/01/2025
Design Delay	
Design	12/01/2025
Bid Delay	
PreConstruction	10/01/2026
Construction	01/01/2027
Closeout	07/01/2028

COST ESTIMATE

Cost Estimate Class:	Class 5
PrePlanning	\$0
PER	\$137,000
Design	\$275,000
PreConstruction	\$0
Construction	\$3,080,000
Closeout	\$0
Est. Program Cost	\$3,492,000
Contingency Budget	\$1,048,000
Est. Project Costs	\$4,540,000



System: General
Type: Biosolids

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$3,492	\$0	\$0	\$0	\$0	\$330	\$1,109	\$2,053	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will serve as Phase VI of the Treatment Plant Dewatering Improvement Program (GN017300). The project scope will be identified closer to project initiation.

PROJECT JUSTIFICATION

This project will allow for the replacement of aging dewatering equipment.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations
Contacts-Dept Contacts: Christopher Wilson
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	
PER	07/01/2026
Design Delay	
Design	12/01/2026
Bid Delay	
PreConstruction	10/01/2027
Construction	01/01/2028
Closeout	07/01/2029

COST ESTIMATE

Cost Estimate Class:	Class 5
PrePlanning	\$0
PER	\$137,000
Design	\$275,000
PreConstruction	\$0
Construction	\$3,080,000
Closeout	\$0
Est. Program Cost	\$3,492,000
Contingency Budget	\$1,048,000
Est. Project Costs	\$4,540,000



System: General
Type: Facilities, Buildings and Capital Equipment

Driver Category: Cost Recovery
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$1,046	\$0	\$0	\$0	\$0	\$0	\$0	\$697	\$349	\$0	\$0	\$0

PROJECT DESCRIPTION

This project is to install solar panels on the roofs of two buildings of the South Shore Operation complex: buildings 1434 and 1436.

PROJECT JUSTIFICATION

As part of HRSD's Resource Recovery initiatives, solar-powered systems provide a sustainable, renewable source of power at a reduced operating cost. The payback is 8 years and the cost includes a 20-year labor and maintenance warranty.

FUNDING TYPE

Funding Type: Cash

CONTACTS

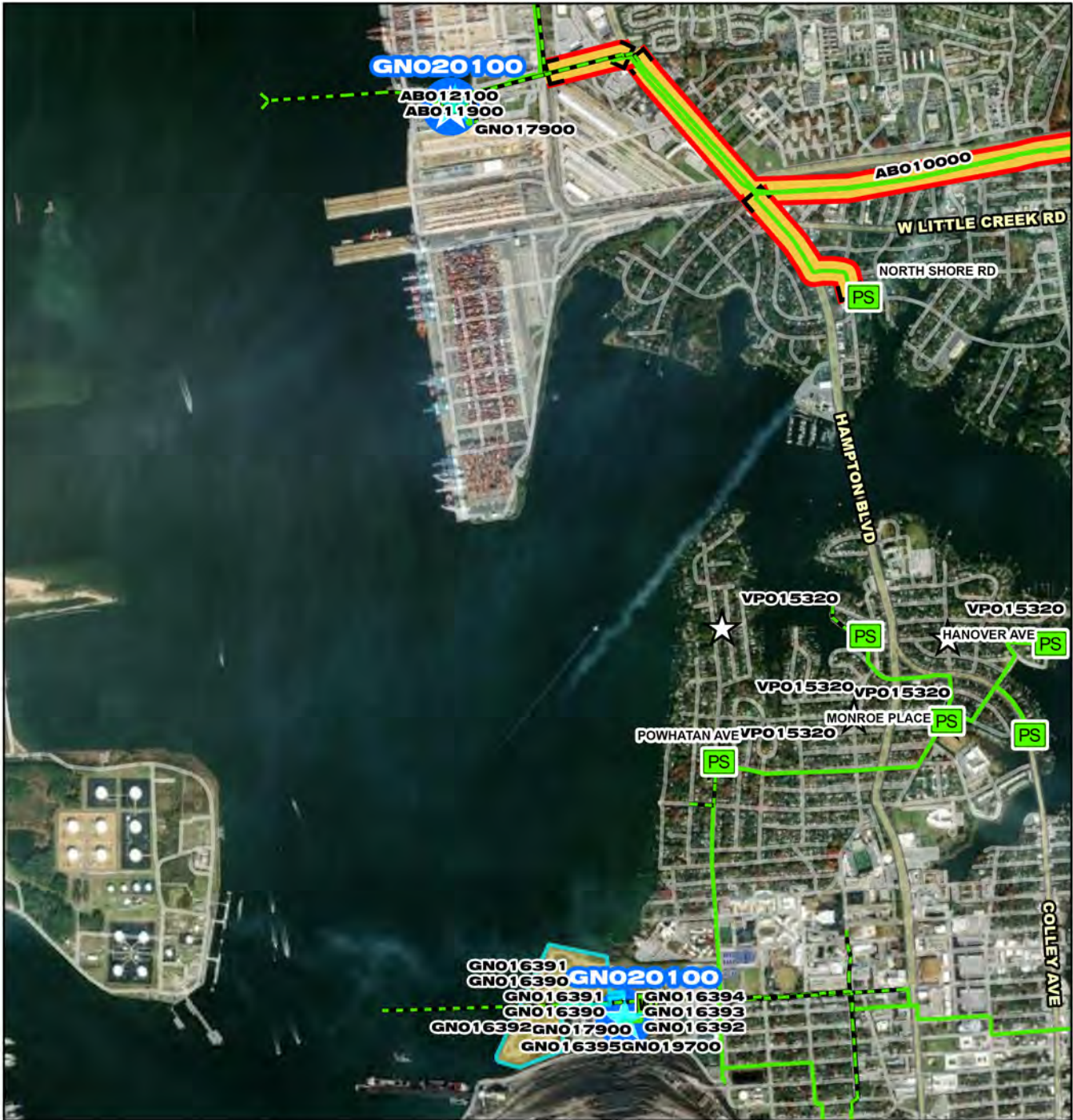
Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Sami Ghosn
Contacts-Managing Dept: Operations

PROPOSED SCHEDULE START DATE

PrePlanning
PER
Design Delay
Design
Bid Delay
PreConstruction
Construction 07/01/2028
Closeout

COST ESTIMATE

Cost Estimate Class:	Class 3
PrePlanning	\$0
PER	\$0
Design	\$0
PreConstruction	\$0
Construction	\$1,046,114
Closeout	\$0
Est. Program Cost	\$1,046,114
Contingency Budget	\$0
Est. Project Costs	\$1,046,114



GNO20100

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station

0 500 1,000 2,000 3,000 4,000 Feet

GNO20100

VIP and Army Base Treatment Plant Secondary Clarifier Weir Cover Installation

N
W E
S

CIP Location



VIP and Army Base Treatment Plant Secondary Clarifier
Weir Cover Installation

PR_GN020100

System: General
Type: Wastewater Treatment

Driver Category: Performance Upgrades
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$1,300	\$0	\$650	\$650	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECT DESCRIPTION

This project will involve procurement and installation of covers on the secondary clarifier effluent weir channels at both VIP and ABTP.

PROJECT JUSTIFICATION

The covers will prevent algae growth from occurring in the quiescent portion of clarifier by eliminating exposure to sunlight. At ABTP the current protocol is to assign Maintenance Operators to the task of removing algae once every week equating to \$34,000 per year. VIP currently utilizes sodium hypochlorite to prevent algae growth, which with recent increases in chemical costs equates to \$150,000 per year. The prevention of algae growth is necessary to reduce adverse impacts on effluent quality and downstream mechanical equipment.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Matt Poe
Contacts-Managing Dept: Operations

PROPOSED SCHEDULE START DATE

PrePlanning
PER
Design Delay
Design
Bid Delay
PreConstruction
Construction 07/01/2023
Closeout 07/01/2025

COST ESTIMATE

Cost Estimate Class: Class 5
PrePlanning \$0
PER \$0
Design \$0
PreConstruction \$0
Construction \$1,300,000
Closeout \$0
Est. Program Cost \$1,300,000
Contingency Budget \$260,000
Est. Project Costs \$1,560,000