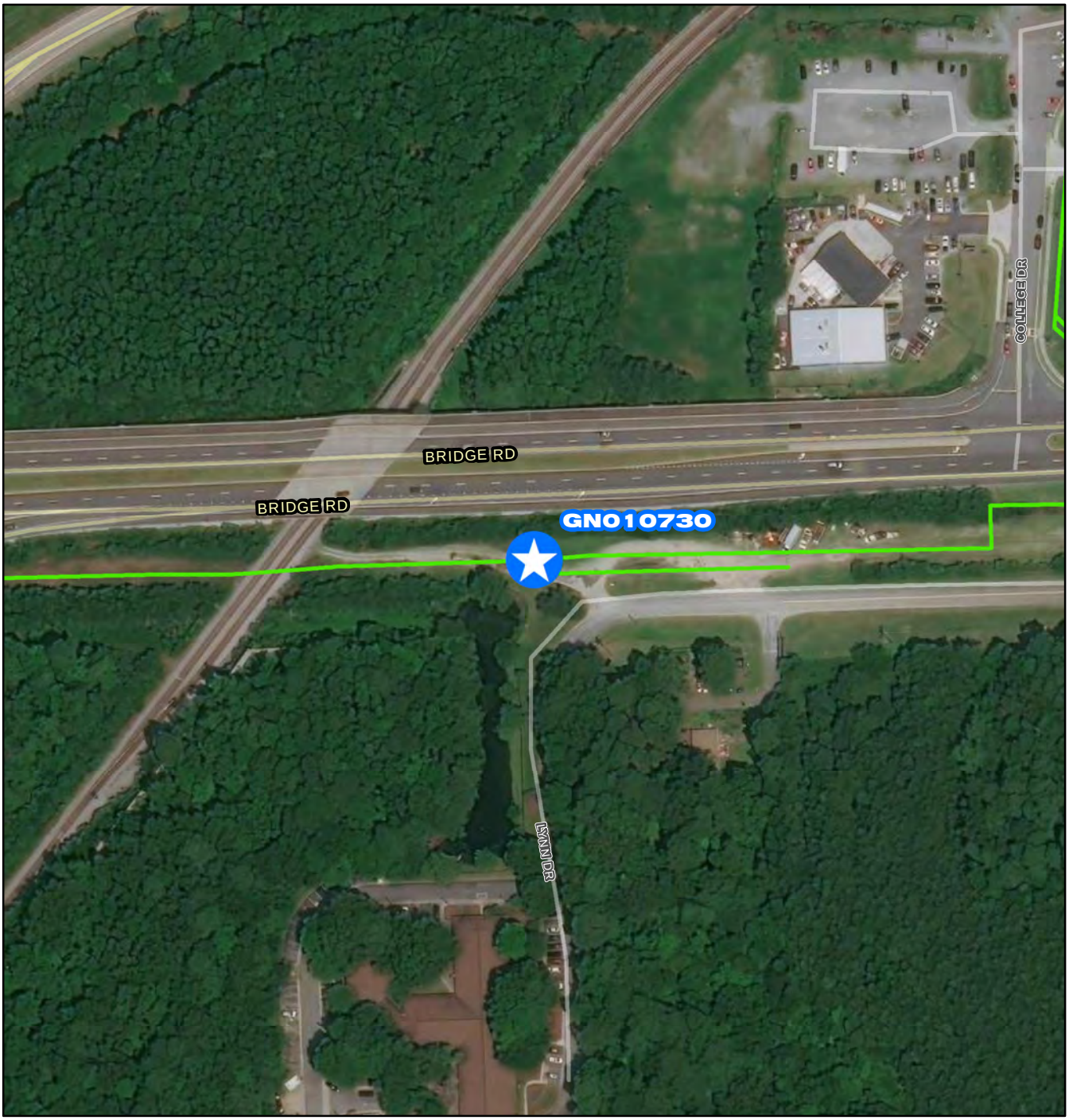
General



GN010730

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 55 110 220 330 440 Feet

GN010730

Horizontal Valve Replacement Phase III

HRSD

N
W E
S

CIP Location

Horizontal Valve Replacement Phase III

PR_GN010730

System: General
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$1,213	$0	$45	$159	$1,009	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will replace a 42-inch Horizontal Valve located at valve guide NA105.
The material of the pipe in this location appears to be 42-inch ductile iron. This valve is on the south side of Route 17, which is located on the west side of the casing.
This valve will require line stops and by-pass to replace.

PROJECT JUSTIFICATION

This project will replace a valve that has experienced operational difficulty.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Jeff Scarano
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2022
PER	08/01/2022
Design Delay	10/01/2022
Design	06/01/2023
Bid Delay	09/01/2023
PreConstruction	05/01/2024
Construction	06/01/2024
Closeout	04/01/2025

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$22,428
Design	$67,286
PreConstruction	$1,683
Construction	$1,121,429
Closeout	$0
Est. Program Cost	**$1,212,826**
Contingency Budget	$121,283
Est. Project Costs	**$1,334,109**

GN013300

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 55 110 220 330 440 Feet

GN013300

Treatment Plant Grease Handling Facilities

HRSD

N
W E
S

CIP Location

Treatment Plant Grease Handling Facilities

PR_GN013300

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$11,826	$9,571	$2,255	$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: Matt Poe
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	10/30/2020
Closeout	11/01/2022

COST ESTIMATE

Cost Estimate Class:	**Class 1**
PrePlanning	$0
PER	$108,672
Design	$1,184,904
PreConstruction	$0
Construction	$10,522,423
Closeout	$10,000
Est. Program Cost	**$11,825,999**
Contingency Budget	$700,000
Est. Project Costs	**$12,525,999**

North Shore Gravity Sewer Improvements Phase I

PR_GN014900

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$5,944	$518	$4,332	$1,091	$3	$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	11/09/2020
Design	11/09/2020
Bid Delay	04/01/2022
PreConstruction	04/01/2022
Construction	07/01/2022
Closeout	10/02/2023

COST ESTIMATE

Cost Estimate Class:	**Class 2**
PrePlanning	$952
PER	$155,712
Design	$348,731
PreConstruction	$12,514
Construction	$5,415,000
Closeout	$10,619
Est. Program Cost	**$5,943,528**
Contingency Budget	$1,083,000
Est. Project Costs	**$7,026,528**

South Shore Gravity Sewer Improvements Phase I

PR_GN015000

System: General
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$845	$59	$130	$656	$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: Jeff Scarano
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

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

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$42,515
Design	$75,311
PreConstruction	$12,147
Construction	$715,454
Closeout	$0
Est. Program Cost	**$845,426**
Contingency Budget	$178,864
Est. Project Costs	**$1,024,290**

Interceptor System Valve Improvements Phase I

PR_GN015300

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$2,621	$119	$236	$1,596	$668	$2	$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	06/29/2021
Design Delay	03/17/2022
Design	03/17/2022
Bid Delay	03/21/2023
PreConstruction	03/21/2023
Construction	06/29/2023
Closeout	12/31/2024

COST ESTIMATE

Cost Estimate Class:	**Class 4**
PrePlanning	$0
PER	$70,643
Design	$145,153
PreConstruction	$6,000
Construction	$2,393,845
Closeout	$5,000
Est. Program Cost	**$2,620,641**
Contingency Budget	$598,462
Est. Project Costs	**$3,219,103**

South Shore Aerial Crossing Improvements

PR_GN015400

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$295	$52	$243	$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

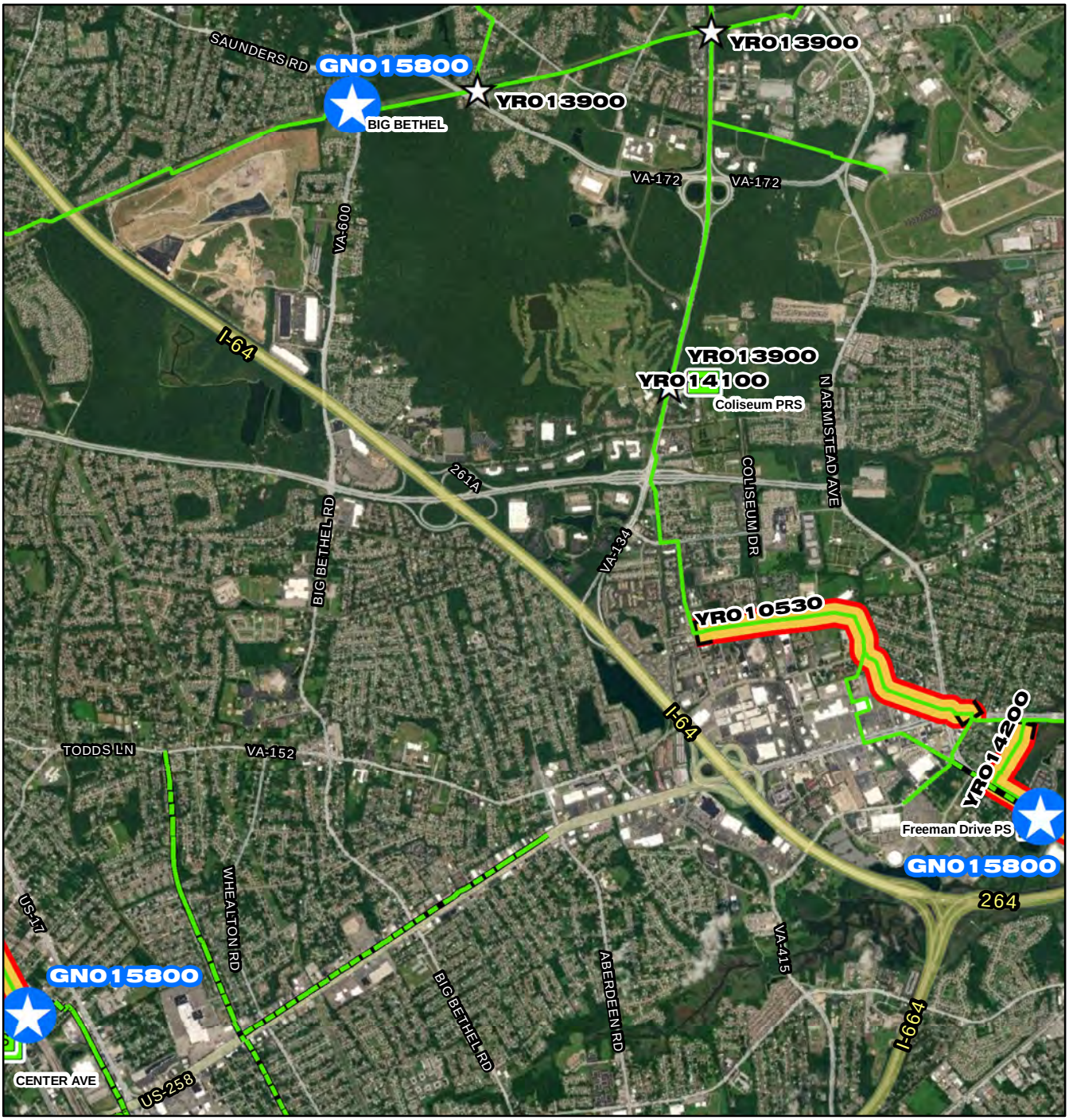
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Jeff Scarano
Contacts-Managing Dept: Engineering

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	03/01/2022
Construction	08/01/2022
Closeout	02/01/2023

COST ESTIMATE

Cost Estimate Class:	**Class 3**
PrePlanning	$0
PER	$32,513
Design	$16,031
PreConstruction	$4,274
Construction	$242,240
Closeout	$0
Est. Program Cost	**$295,058**
Contingency Budget	$60,560
Est. Project Costs	**$355,618**



GN01 5800

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 1,200 2,400 4,800 7,200 9,600 Feet

N
W E
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CIP Location

GN01 5800

North Shore Automated Diversion Facilities

HRSD

North Shore Automated Diversion Facilities

PR_GN015800

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$2,252	$436	$1,671	$144	$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: Matt Poe
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	10/03/2016
PER	10/31/2016
Design Delay	12/20/2016
Design	05/01/2021
Bid Delay	03/01/2022
PreConstruction	03/01/2022
Construction	06/01/2022
Closeout	08/01/2023

COST ESTIMATE

Cost Estimate Class:	**Class 1**
PrePlanning	$0
PER	$89,250
Design	$197,592
PreConstruction	$10,000
Construction	$1,950,000
Closeout	$5,000
Est. Program Cost	**$2,251,842**
Contingency Budget	$440,000
Est. Project Costs	**$2,691,842**

SWIFT Research Center Full Scale MAR Well Integration

PR_GN016220

System: General
Type: SWIFT

Driver Category: Nutrient Reduction
Project Phase: Construction
Regulatory: Integrated Plan-SWIFT

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$1,916	$1,058	$859	$0	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project includes the integration of a full scale managed aquifer recharge (MAR) well (NP-RW-1) into the SWIFT Research Center.
The process piping, mechanical equipment, backflush pump, instrumentation, and electrical work required to convey SWIFT Water from the Research Center to the new well will be included.
Site work at the Research Center may be required.

PROJECT JUSTIFICATION

The SWIFT Research Center was designed to utilize the first test well (TW-1) drilled in 2016 during the development of the SWIFT initiative for recharge of the Potomac Aquifer. TW-1 consists of a 12-inch steel casing with multiple screened sections.
Operation of the Research Center, including recharge through a single well, has highlighted the need for additional operational experience with a full-scale recharge well with a larger casing (18-24 inch), different well screening material, an orifice plate for back pressure control, provisions for more appropriate water level measurement, provisions for recharge through the well anulus in addition to the pump casing, and other appurtenances.
Operation of a full-scale recharge well at the Research Center will provide the following: Flexibility of recharge operation at the Research Center that alleviates the challenges associated with reliance on a single asset for groundwater recharge; Validation of the well design and operating approach prior to full-scale recharge well installations; and Training of staff related to operation of a full scale recharge well.

FUNDING TYPE

Funding Type: Cash

CONTACTS

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

PROPOSED SCHEDULE START DATE

PrePlanning	10/01/2020
PER	10/01/2020
Design Delay	10/01/2020
Design	10/01/2020
Bid Delay	03/31/2021
PreConstruction	03/31/2021
Construction	05/04/2021
Closeout	11/01/2022

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$0
Design	$311,032
PreConstruction	$9,178
Construction	$1,596,222
Closeout	$0
Est. Program Cost	**$1,916,432**
Contingency Budget	$136,923
Est. Project Costs	**$2,053,355**

Outfall Dispersion Modeling for Full Scale SWIFT

PR_GN016311

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$1,122	$107	$100	$101	$102	$102	$102	$102	$101	$101	$102	$102

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	07/01/2018
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**

Program Management of SWIFT Full Scale Implementation

PR_GN016320

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$75,347	$19,742	$5,603	$5,863	$5,688	$5,688	$5,688	$5,688	$5,688	$5,688	$5,220	$4,790

PROJECT DESCRIPTION

SWIFT Facility 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 injection wells, monitoring wells, and associated pumping and piping systems to support groundwater augmentation. The Program Management team may also deliver the wastewater treatment plant improvements and outfall modifications 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 manage the transition of the new SWIFT assets to HRSD operations and life cycle asset management.

PROJECT JUSTIFICATION

The permitting, design, procurement and construction of advanced water treatment facilities, groundwater recharge facilities, wastewater treatment upgrades, and outfall modifications required to implement up to 100 million gallons per day (MGD) of SWIFT capacity by 2030 will require additional resources and expertise to augment HRSD's 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	04/01/2020
PER	04/01/2022
Design Delay	04/01/2022
Design	08/01/2018
Bid Delay	
PreConstruction	
Construction	
Closeout	

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$485,633
PER	$700
Design	$76,374,540
PreConstruction	$0
Construction	$0
Closeout	$0
Est. Program Cost	**$76,860,873**
Contingency Budget	$0
Est. Project Costs	**$76,860,873**

SWIFT Managed Aquifer Recharge Services

PR_GN016331

System: General
Type: SWIFT

Driver Category: Nutrient Reduction
Project Phase: Pre Planning
Regulatory: Integrated Plan-SWIFT

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$750	$330	$275	$145	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project includes engineering services necessary to advance the conceptual design and planning for Managed Aquifer Recharge (MAR) wells at each SWIFT facility. Tasks include evaluating the suitability of locations for well sites, preparing preliminary site layouts with respect to well installation and site planning requirements, supporting real estate acquisition, planning well installation logistics, testing, and aquifer conditioning fluid management, developing the overall MAR well data management structure, and supporting contractor and stakeholder outreach.

PROJECT JUSTIFICATION

This project is necessary to inform the selection of individual MAR sites and provide information critical to planning and subsequently installing successful MAR wells. Information developed during this project will support SWIFT recharge and monitoring well land acquisition efforts and locality site planning requirements.

FUNDING TYPE

Funding Type: Cash

CONTACTS

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

PROPOSED SCHEDULE START DATE

PrePlanning	01/22/2022
PER	
Design Delay	
Design	
Bid Delay	
PreConstruction	
Construction	
Closeout	03/01/2024

COST ESTIMATE

Cost Estimate Class:	**Class 3**
PrePlanning	$750,000
PER	$0
Design	$0
PreConstruction	$0
Construction	$0
Closeout	$0
Est. Program Cost	**$750,000**
Contingency Budget	$38,000
Est. Project Costs	**$788,000**

GNO16342

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 55 110 220 330 440 Feet

N
W E
S

CIP Location

GNO16342

Williamsburg SWIFT Land Acquisition

HRSD

Williamsburg SWIFT Land Acquisition

PR_GN016342

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$1,500	$3	$0	$0	$0	$0	$0	$0	$0	$0	$642	$856

PROJECT DESCRIPTION

This project will fund the purchase of land adjacent to the Williamsburg Treatment Plant that is needed for expansion of treatment facilities.

PROJECT JUSTIFICATION

The current Williamsburg Treatment Plant site is land constrained. The purchase of additional directly adjacent property is necessary to support facility expansion, including advanced treatment facilities for SWIFT.

FUNDING TYPE

Funding Type: Cash

CONTACTS

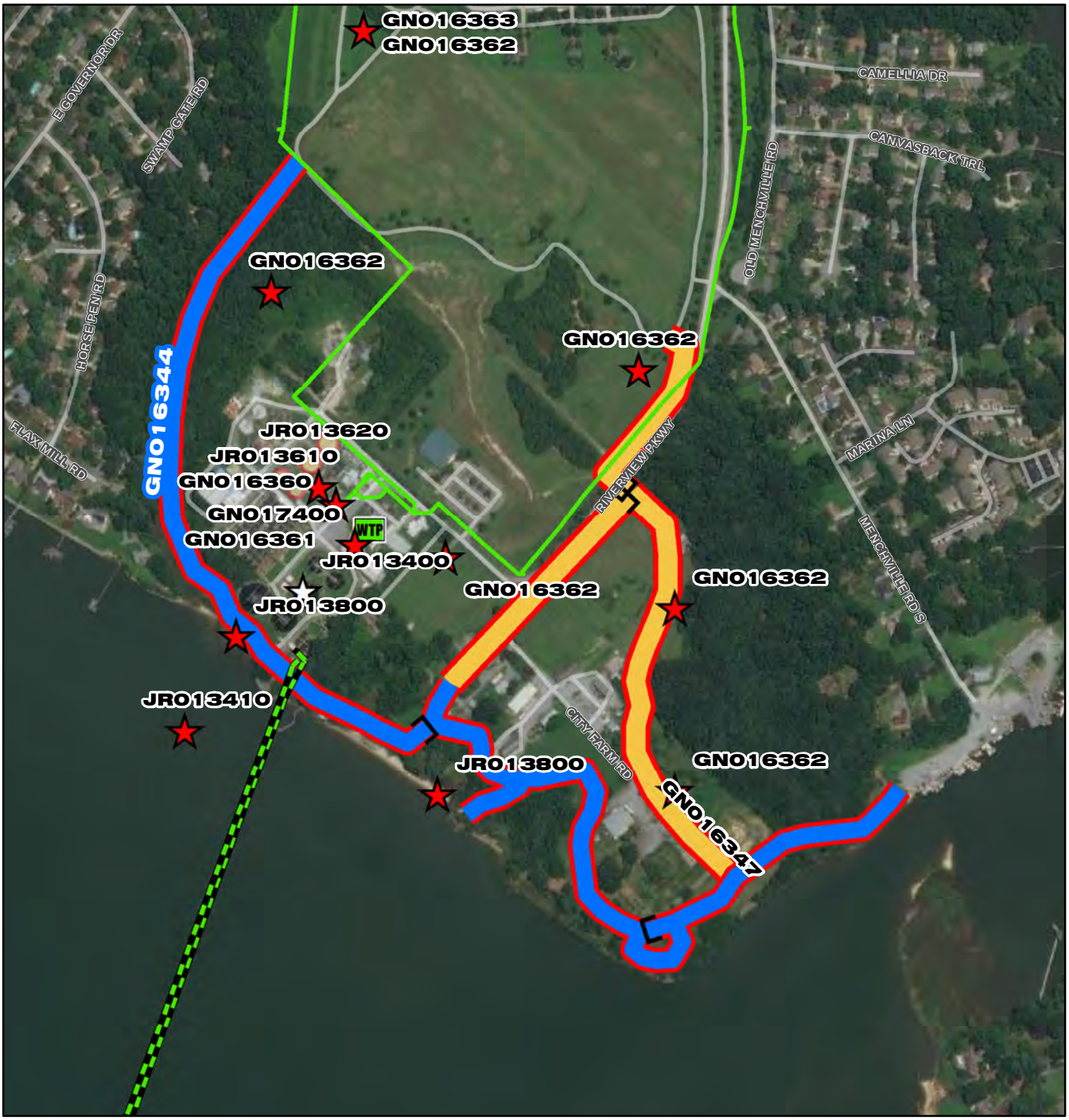
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	01/02/2026
PER	01/02/2026
Design Delay	01/02/2026
Design	01/12/2031
Bid Delay	
PreConstruction	
Construction	
Closeout	

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$0
Design	$1,500,000
PreConstruction	$0
Construction	$0
Closeout	$0
Est. Program Cost	**$1,500,000**
Contingency Budget	$0
Est. Project Costs	**$1,500,000**



GN016344

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 200 400 800 1,200 1,600 Feet

N W E S

CIP Location

GN016344

James River Land Improvements

HRSD

James River Land Improvements

PR_GN016344

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$5,434	$1,046	$4,032	$356	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will provide for improvements to the land surrounding the James River Treatment Plant that are needed to enhance public accessibility.

PROJECT JUSTIFICATION

This project will makes improvements that were agreed upon with the community when purchasing land for SWIFT facilities.

FUNDING TYPE

Funding Type: Cash

CONTACTS

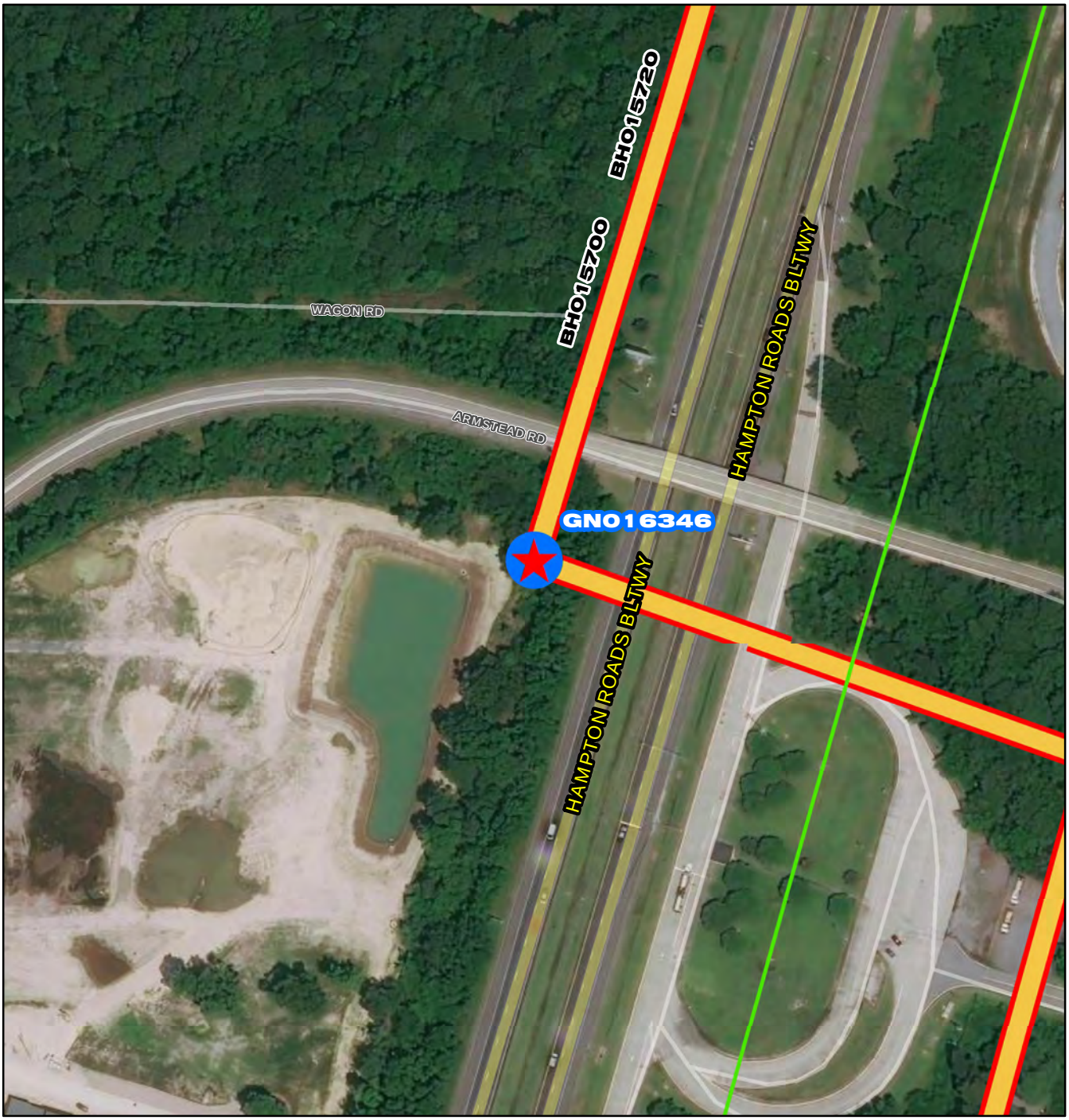
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	03/04/2021
PER	02/17/2021
Design Delay	05/10/2021
Design	05/10/2021
Bid Delay	08/16/2021
PreConstruction	08/16/2021
Construction	06/01/2022
Closeout	07/01/2023

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$1,197
PER	$197,659
Design	$558,509
PreConstruction	$31,784
Construction	$4,388,300
Closeout	$0
Est. Program Cost	**$5,177,449**
Contingency Budget	$51,542
Est. Project Costs	**$5,228,991**



GN016346

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 55 110 220 330 440 Feet

GN016346

Boat Harbor Transmission Force Main Land Acquisition

HRSD

N
W E
S

CIP Location

Boat Harbor Transmission Force Main Land Acquisition

PR_GN016346

System: Boat Harbor
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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$2,500	$1,250	$1,250	$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

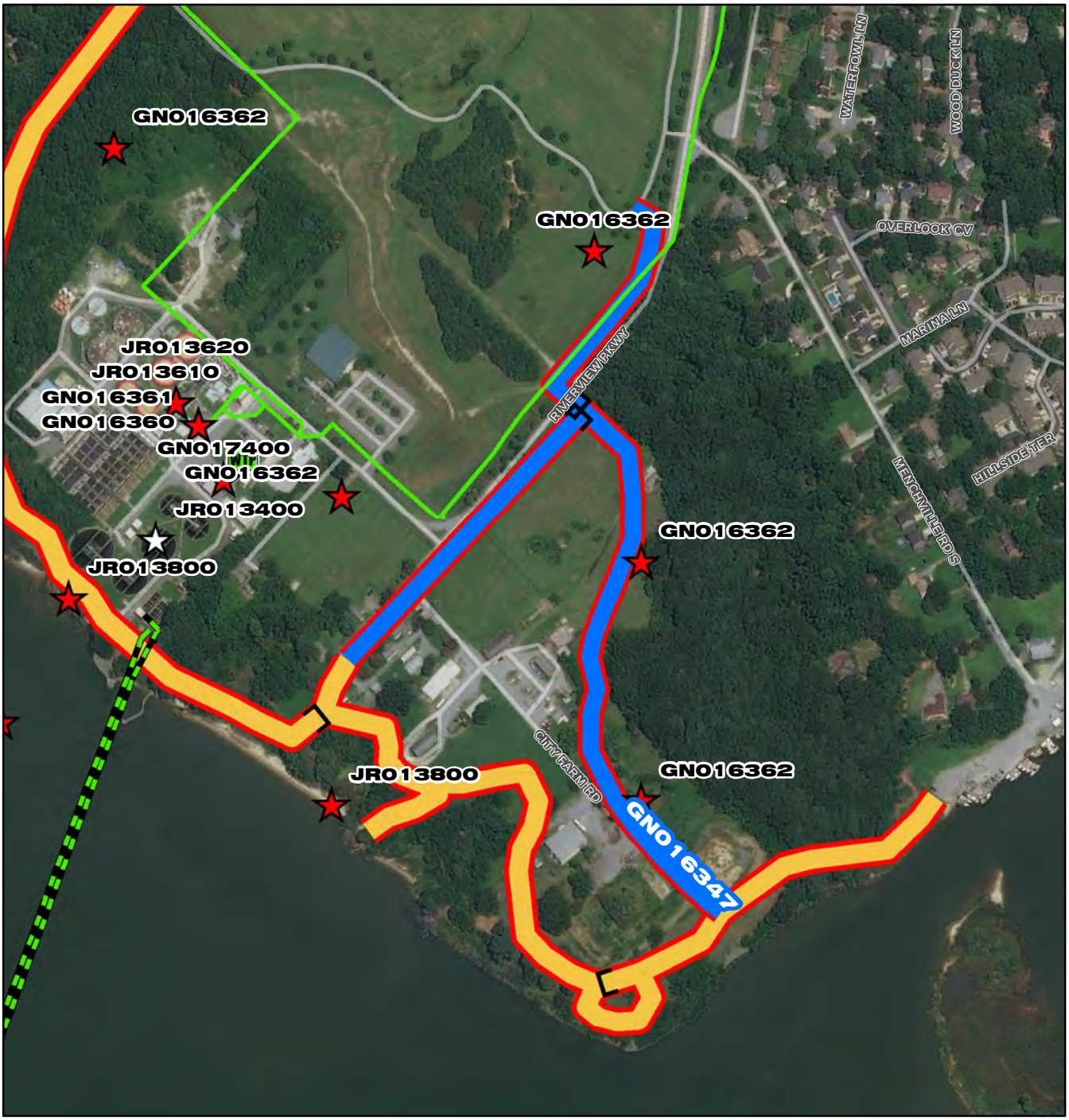
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	10/01/2021
PER	10/01/2021
Design Delay	10/26/2021
Design	01/27/2022
Bid Delay	01/01/2023
PreConstruction	01/01/2023
Construction	01/01/2023
Closeout	01/01/2023

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$0
Design	$2,500,000
PreConstruction	$0
Construction	$0
Closeout	$0
Est. Program Cost	**$2,500,000**
Contingency Budget	$500,000
Est. Project Costs	**$3,000,000**



GN016347

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 150 300 600 900 1,200 Feet

GN016347

James River Land Improvements, Phase II Trails

HRSD

N
W E
S

CIP Location

James River Land Improvements, Phase II Trails

PR_GN016347

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$1,489	$0	$0	$0	$681	$808	$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 HRSD's 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	
PER	
Design Delay	
Design	07/01/2024
Bid Delay	
PreConstruction	10/01/2024
Construction	11/01/2024
Closeout	

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$0
Design	$138,000
PreConstruction	$5,000
Construction	$1,346,200
Closeout	$0
Est. Program Cost	**$1,489,200**
Contingency Budget	$257,840
Est. Project Costs	**$1,747,040**

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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 55 110 220 330 440 Feet

GNO16350

Williamsburg SWIFT Facility

N
W E
S

CIP Location

Williamsburg SWIFT Facility

PR_GN016350

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$2,859	$684	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,175

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 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	07/01/2030
PER	07/03/2031
Design Delay	11/05/2032
Design	11/12/2032
Bid Delay	
PreConstruction	
Construction	08/23/2033
Closeout	12/04/2036

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$226
PER	$2,111,774
Design	$3,741,600
PreConstruction	$121,000
Construction	$125,216,900
Closeout	$0
Est. Program Cost	**$131,191,500**
Contingency Budget	$14,925,000
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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 55 110 220 330 440 Feet

GNO16351

Williamsburg Recharge Wells

N
W E
S

CIP Location

Williamsburg Recharge Wells

PR_GN016351

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$467	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$467

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	03/01/2032
PER	04/23/2032
Design Delay	05/07/2032
Design	04/23/2032
Bid Delay	05/06/2033
PreConstruction	05/06/2033
Construction	07/28/2033
Closeout	04/06/2035

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$420,000
Design	$696,000
PreConstruction	$24,000
Construction	$23,304,000
Closeout	$0
Est. Program Cost	**$24,444,000**
Contingency Budget	$3,090,000
Est. Project Costs	**$27,534,000**

GN016360

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 55 110 220 330 440 Feet

GN016360

James River SWIFT Facility

HRSD

N
W E
S

CIP Location

James River SWIFT Facility

PR_GN016360

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$268,311	$29,386	$69,435	$96,891	$53,133	$18,697	$768	$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 Virginia's economy.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

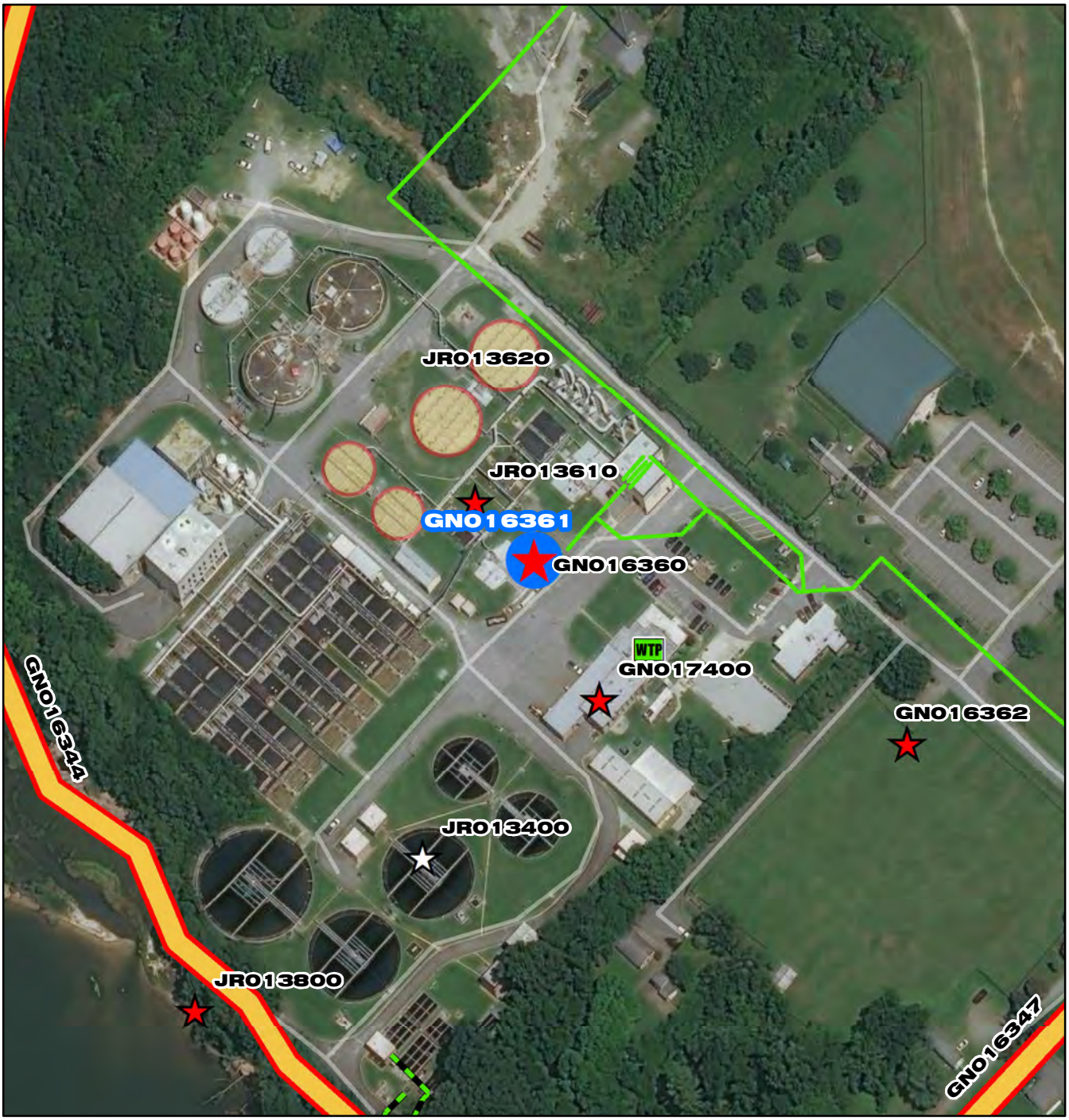
Contacts-Requesting Dept: General Manager
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	08/01/2019
PER	07/01/2019
Design Delay	
Design	03/01/2021
Bid Delay	07/31/2020
PreConstruction	08/01/2019
Construction	11/24/2021
Closeout	04/21/2026

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$4,079,276
Design	$18,818,205
PreConstruction	$288,289
Construction	$245,124,895
Closeout	$0
Est. Program Cost	**$268,310,665**
Contingency Budget	$3,153,518
Est. Project Costs	**$271,464,183**



GN016361

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 55 110 220 330 440 Feet

GN016361

James River Recharge Wells (On Site)

HRSD

N
W E
S

CIP Location

James River Recharge Wells (On Site)

PR_GN016361

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$17,839	$5,213	$12,355	$271	$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

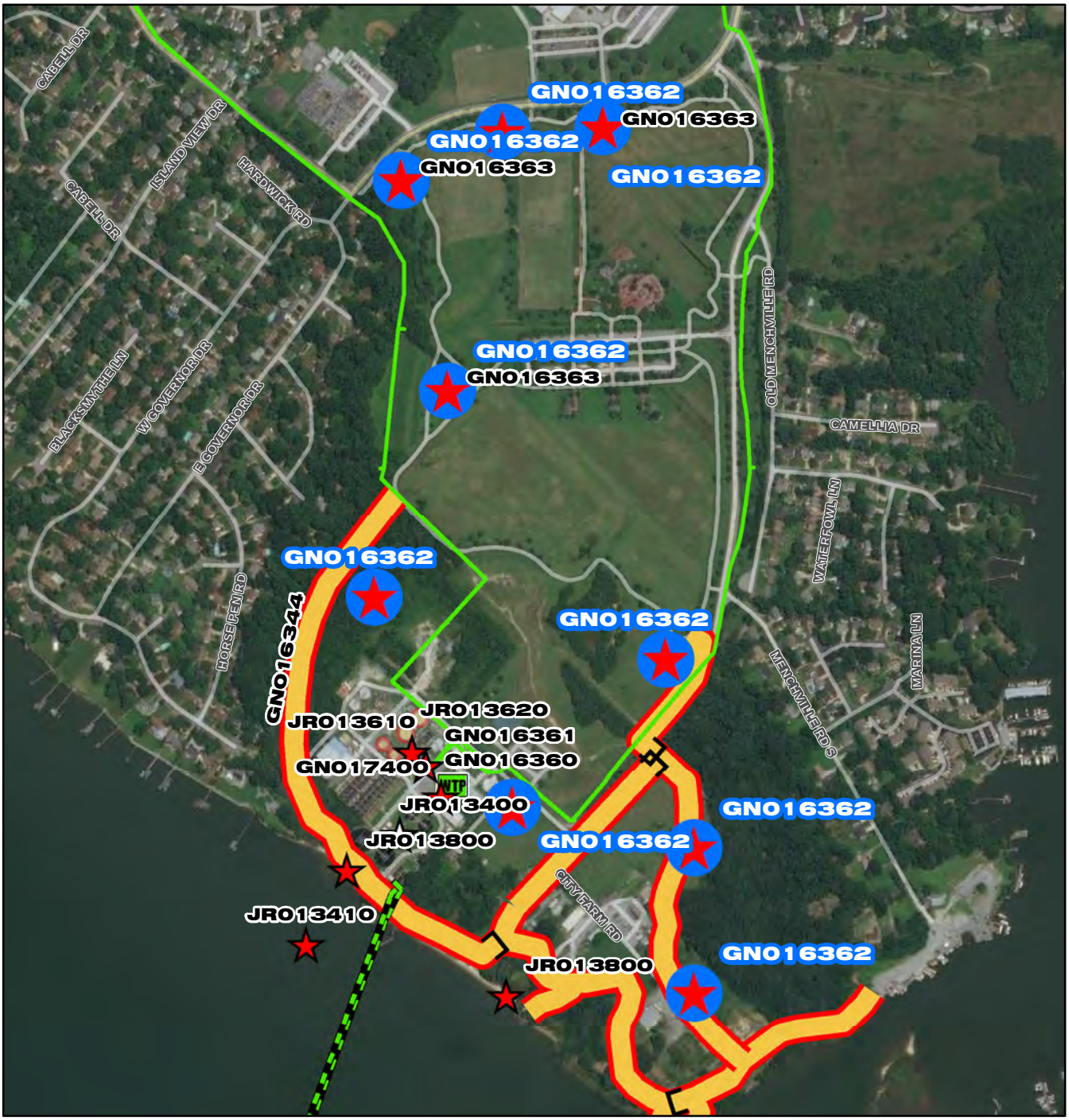
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	01/01/2021
PER	09/01/2021
Design Delay	09/01/2021
Design	11/01/2020
Bid Delay	06/01/2021
PreConstruction	06/01/2021
Construction	12/01/2021
Closeout	09/01/2023

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$158,874
PER	$0
Design	$980,178
PreConstruction	$25,648
Construction	$16,670,000
Closeout	$0
Est. Program Cost	**$17,834,700**
Contingency Budget	$900,000
Est. Project Costs	**$18,734,700**



GN016362

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

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

GN016362

James River Recharge Wells (Off Site)

HRSD

N
W E
S

CIP Location

James River Recharge Wells (Off Site)

PR_GN016362

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$43,029	$263	$12,896	$21,874	$7,996	$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

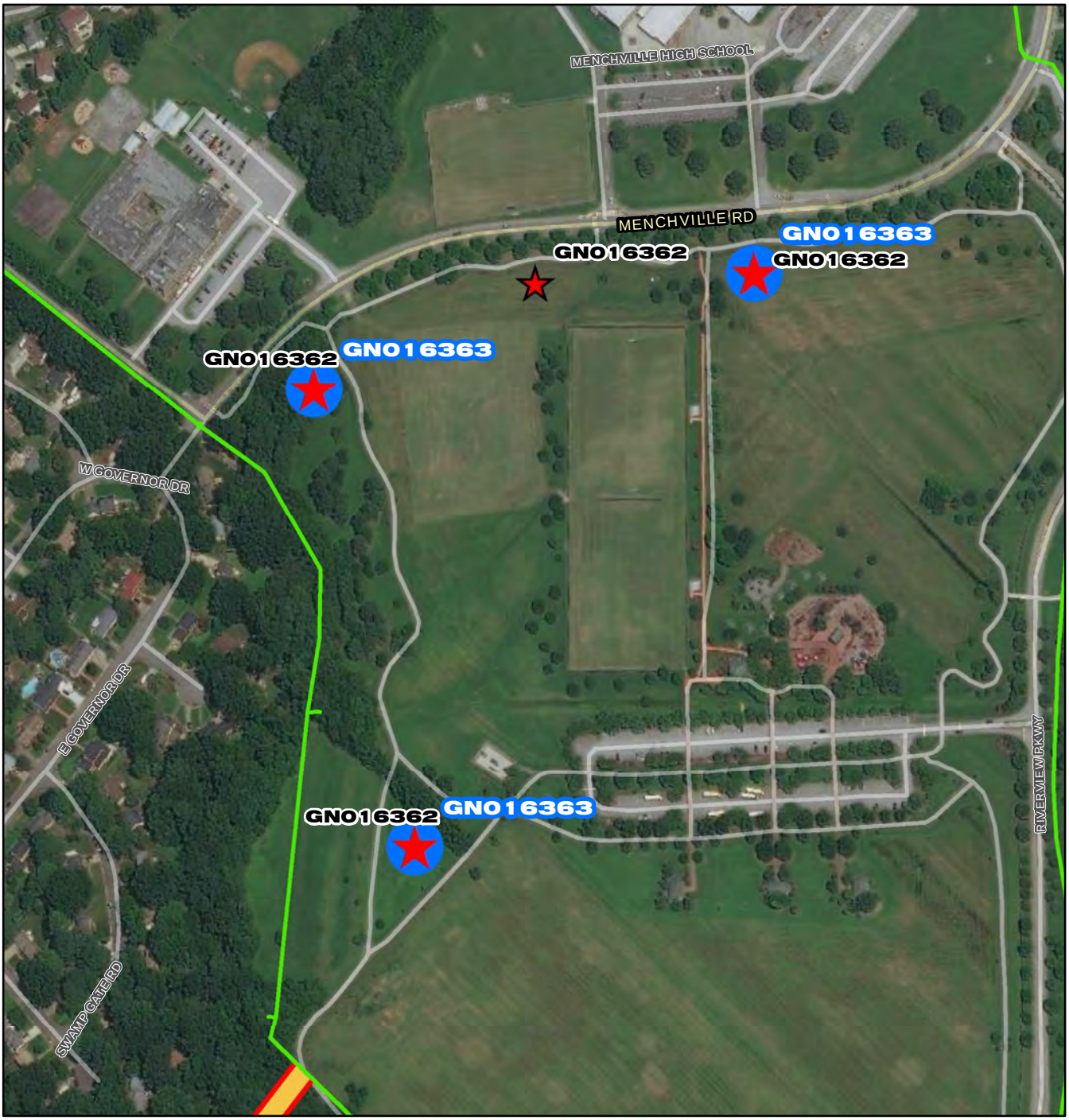
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	01/01/2021
PER	09/01/2021
Design Delay	12/01/2021
Design	06/01/2021
Bid Delay	01/01/2022
PreConstruction	01/01/2022
Construction	05/01/2022
Closeout	06/01/2025

COST ESTIMATE

Cost Estimate Class:	**Class 3**
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$30,000
Construction	$42,999,000
Closeout	$0
Est. Program Cost	**$43,029,000**
Contingency Budget	$4,305,000
Est. Project Costs	**$47,334,000**



GN016363

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 115 230 460 690 920 Feet

GN016363

James River Recharge Well Enhancements

HRSD

N
W E
S

CIP Location

James River Recharge Well Enhancements

PR_GN016363

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$305	$0	$0	$0	$103	$203	$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	
PER	
Design Delay	
Design	07/01/2024
Bid Delay	
PreConstruction	06/01/2025
Construction	08/01/2025
Closeout	

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
WTP HRSD Treatment Plant
PRS HRSD Pressure Reducing Station
PS HRSD Pump Station

0 55 110 220 330 440 Feet

GNO16370

York River SWIFT Facility

N
W E
S

CIP Location

York River SWIFT Facility

PR_GN016370

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$2,983	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,413	$1,571

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 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	07/01/2030
PER	03/17/2031
Design Delay	07/28/2032
Design	08/20/2032
Bid Delay	
PreConstruction	11/01/2031
Construction	06/13/2033
Closeout	06/26/2036

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$2,825,000
Design	$5,004,500
PreConstruction	$162,000
Construction	$167,564,000
Closeout	$0
Est. Program Cost	**$175,555,500**
Contingency Budget	$28,615,000
Est. Project Costs	**$204,170,500**

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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 55 110 220 330 440 Feet

GNO16371

York River Recharge Wells

N
W E
S

CIP Location

York River Recharge Wells

PR_GN016371

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$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

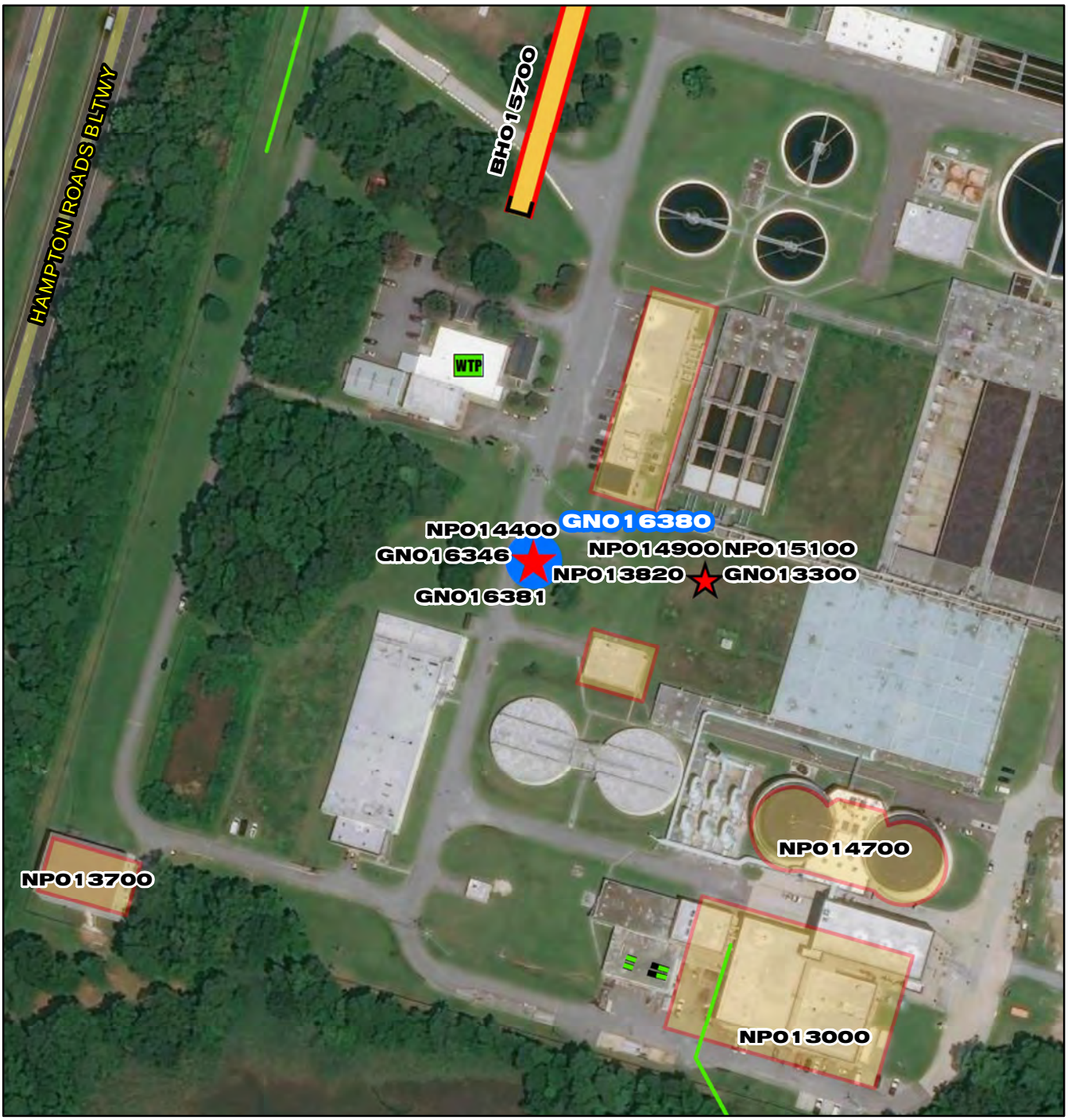
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	04/02/2032
PER	08/25/2032
Design Delay	09/08/2032
Design	07/01/2032
Bid Delay	07/08/2033
PreConstruction	07/08/2033
Construction	09/16/2033
Closeout	07/01/2036

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$472,500
Design	$783,000
PreConstruction	$27,000
Construction	$26,217,000
Closeout	$0
Est. Program Cost	**$27,499,500**
Contingency Budget	$4,182,000
Est. Project Costs	**$31,681,500**



GN016380

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 55 110 220 330 440 Feet

GN016380

Nansemond SWIFT Facility

HRSD

N
W E
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CIP Location

Nansemond SWIFT Facility

PR_GN016380

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$307,013	$663	$4,453	$4,964	$19,128	$86,017	$120,574	$50,944	$20,270	$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.

FUNDING TYPE

Funding Type: WIFIA

CONTACTS

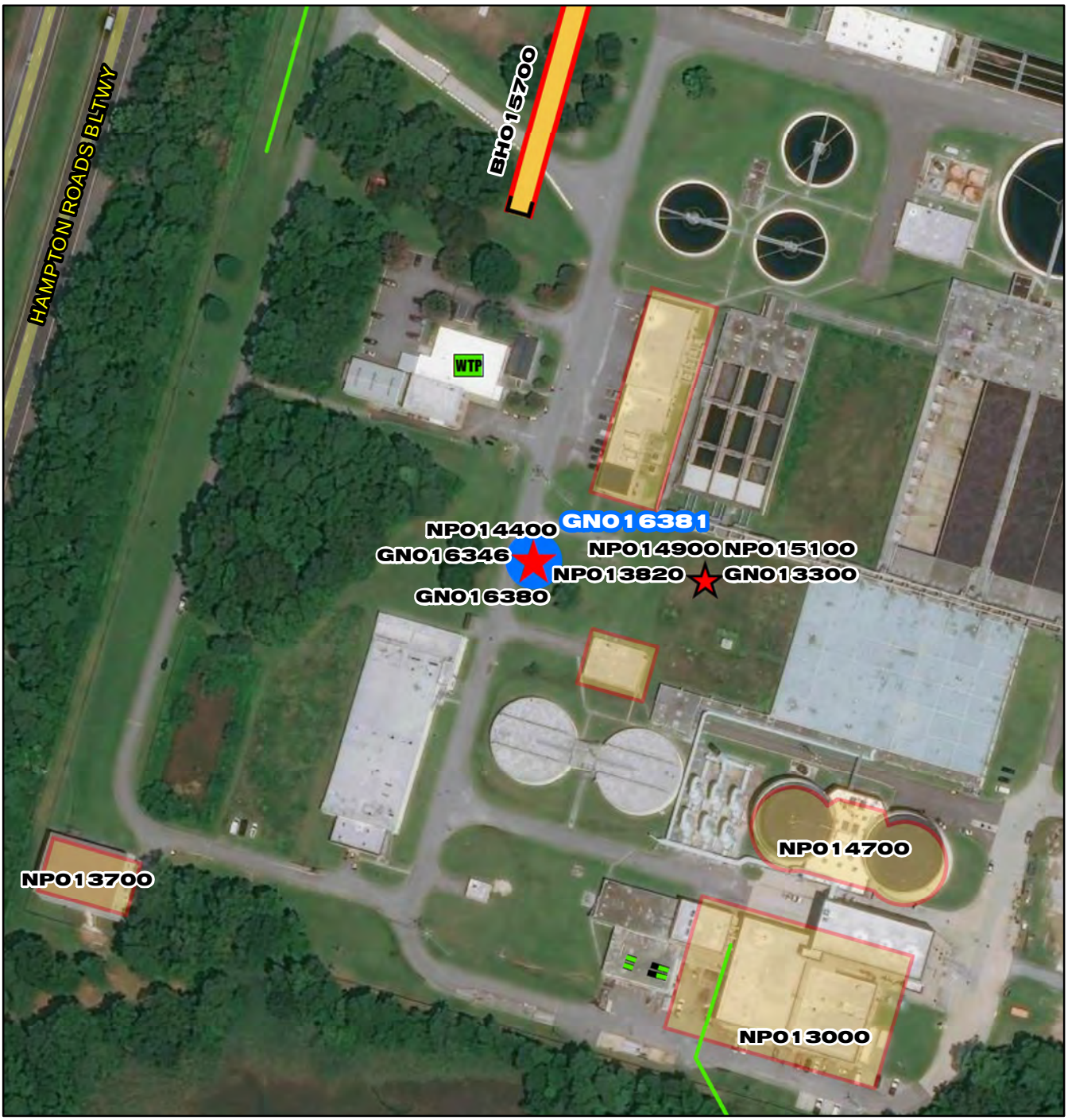
Contacts-Requesting Dept: General Manager
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	09/03/2021
PER	04/15/2022
Design Delay	07/16/2024
Design	07/24/2024
Bid Delay	
PreConstruction	12/01/2022
Construction	06/23/2025
Closeout	07/19/2028

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$4,941,000
Design	$8,752,200
PreConstruction	$283,000
Construction	$293,037,200
Closeout	$0
Est. Program Cost	**$307,013,400**
Contingency Budget	$58,476,000
Est. Project Costs	**$365,489,400**



GN016381

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 55 110 220 330 440 Feet

GN016381

Nansemond Recharge Wells

N
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CIP Location

Nansemond Recharge Wells

PR_GN016381

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$48,048	$0	$940	$714	$5,501	$13,066	$14,671	$10,680	$2,476	$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

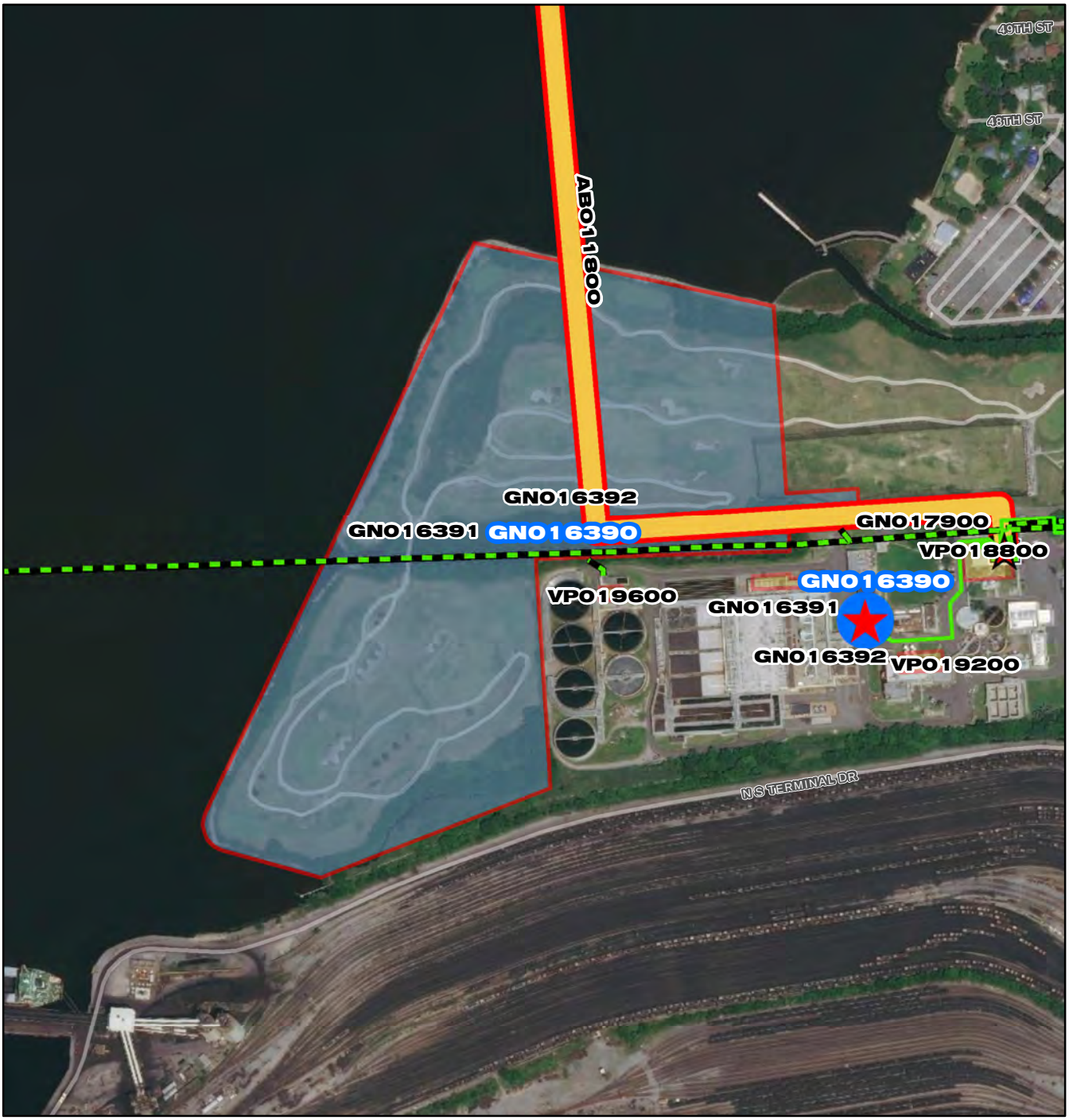
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Lauren Zuravnsky
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	02/01/2022
PER	07/01/2022
Design Delay	10/01/2022
Design	10/01/2022
Bid Delay	01/01/2024
PreConstruction	01/01/2024
Construction	04/01/2024
Closeout	05/01/2029

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$0
Design	$1,392,000
PreConstruction	$48,000
Construction	$46,608,000
Closeout	$0
Est. Program Cost	**$48,048,000**
Contingency Budget	$7,389,000
Est. Project Costs	**$55,437,000**



GN01 6390

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 155 310 620 930 1,240 Feet

GN01 6390

VIP SWIFT Facility

HRSD

N
W E
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CIP Location

VIP SWIFT Facility

PR_GN016390

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$334,132	$0	$0	$5,506	$328	$8,312	$8,132	$45,000	$94,954	$94,531	$55,024	$22,345

PROJECT DESCRIPTION

VIP SWIFT will include advanced water treatment facilities needed to produce SWIFT water at the VIP 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

VIP 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.

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	12/01/2021
PER	09/01/2023
Design Delay	07/01/2024
Design	05/01/2025
Bid Delay	11/01/2026
PreConstruction	11/01/2023
Construction	11/01/2026
Closeout	02/01/2032

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$5,377,000
Design	$9,525,100
PreConstruction	$308,000
Construction	$318,922,300
Closeout	$0
Est. Program Cost	**$334,132,400**
Contingency Budget	$69,705,000
Est. Project Costs	**$403,837,400**

GN01 6391

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 155 310 620 930 1,240 Feet

GN01 6391

VIP Recharge Wells

N
W E
S

CIP Location

VIP Recharge Wells

PR_GN016391

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$57,156	$0	$0	$188	$1,948	$688	$592	$10,626	$10,749	$10,749	$10,792	$10,824

PROJECT DESCRIPTION

VIP 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 VIP 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

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	05/02/2022
PER	03/19/2025
Design Delay	03/26/2024
Design	03/26/2024
Bid Delay	
PreConstruction	04/08/2027
Construction	07/08/2027
Closeout	12/21/2033

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$1,260,000
Design	$2,088,000
PreConstruction	$72,000
Construction	$69,912,000
Closeout	$0
Est. Program Cost	**$73,332,000**
Contingency Budget	$12,507,000
Est. Project Costs	**$85,839,000**

GN01 6392

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 155 310 620 930 1,240 Feet

GN01 6392

VIP SWIFT Site Work

N
W E
S

CIP Location

VIP SWIFT Site Work

PR_GN016392

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$38,894	$1	$702	$583	$2,600	$31,110	$3,897	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will provide for necessary grading and debris removal to prepare the site adjacent to the VIP Treatment Plant for SWIFT facility installation.

PROJECT JUSTIFICATION

The VIP Treatment Plant is land constrained. A parcel of land was purchased adjacent to the plant that will be used for SWIFT 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	01/01/2021
PER	08/01/2022
Design Delay	02/01/2023
Design	02/01/2023
Bid Delay	04/01/2025
PreConstruction	07/01/2022
Construction	04/01/2025
Closeout	11/01/2026

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$669,000
Design	$1,108,000
PreConstruction	$39,000
Construction	$37,078,000
Closeout	$0
Est. Program Cost	**$38,894,000**
Contingency Budget	$8,250,000
Est. Project Costs	**$47,144,000**

Treatment Plant Solids Handling Replacement Phase II

PR_GN016700

System: General
Type: Biosolids

Driver Category: Capacity Improvements
Project Phase: Pre Planning
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$5,848	$1,493	$2,750	$1,604	$0	$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: Jeff Layne
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/02/2018
PER	01/01/2020
Design Delay	04/01/2020
Design	09/01/2020
Bid Delay	01/01/2022
PreConstruction	01/01/2022
Construction	06/01/2022
Closeout	02/01/2024

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$0
Design	$577,540
PreConstruction	$0
Construction	$5,270,000
Closeout	$0
Est. Program Cost	**$5,847,540**
Contingency Budget	$685,000
Est. Project Costs	**$6,532,540**

Climate Change Planning

PR_GN017100

System: General
Type: Facilities, Buildings and Capital Equipment

Driver Category: Risk Mitigation
Project Phase: Pre Planning
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$4,826	$3,555	$1,271	$0	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

The Hampton Roads Planning District Commission (HRPDC) has adopted a range of 3 to 4.5 feet as the planning range for sea level rise by 2100 to use in the region. When you put the 4 foot rise together with the Virginia Institute of Marine Science (VIMS) 100-year flood projections, the Hampton Roads region could be severely impacted by the year 2060.
In addition, there are several other climate change scenarios that will also have impacts to our facilities. These include recurrent flooding and extreme storm events (those beyond the level of service) which could cause damage to HRSD equipment. This study will look at ensuring continuing operation of HRSD facilities during these events and to prepare for Sea Level Rise. From this analysis, additional CIP projects will be determined in order to prepare HRSD for resiliency today and future climate change.

PROJECT JUSTIFICATION

This project will analyze the impacts of climate change (which includes sea level rise and recurrent flooding) on HRSD infrastructure including treatment plants, pump stations, gravity sewers, and will prepare future CIP's that will allow for the protection of those assets.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Robert Martz
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	08/01/2019
PER	03/01/2023
Design Delay	03/01/2023
Design	03/01/2023
Bid Delay	03/01/2023
PreConstruction	03/01/2023
Construction	03/01/2023
Closeout	03/01/2023

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$4,825,910
PER	$0
Design	$0
PreConstruction	$0
Construction	$0
Closeout	$0
Est. Program Cost	**$4,825,910**
Contingency Budget	$0
Est. Project Costs	**$4,825,910**

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$9,270	$4,204	$1,223	$1,223	$1,223	$1,223	$172	$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 1990's. 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: Matt Poe
Contacts-Managing Dept: Engineering

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	08/01/2026

COST ESTIMATE

Cost Estimate Class:	**Class 1**
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**

Treatment Plant Dewatering Replacement Program

PR_GN017300

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$31,500	$0	$0	$0	$4,540	$4,540	$4,540	$4,540	$4,540	$4,540	$4,259	$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

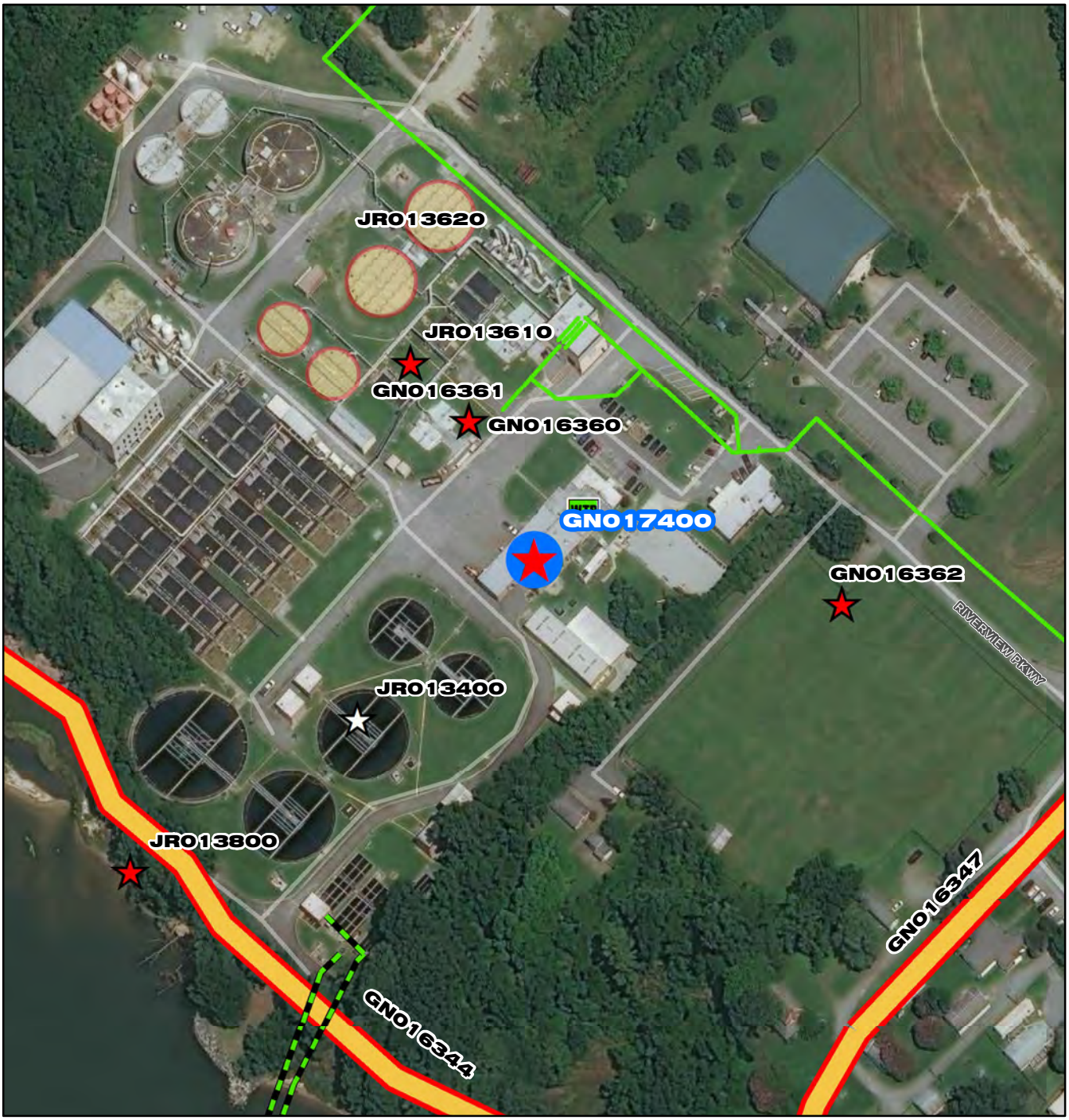
Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Christel Dyer
Contacts-Managing Dept: Engineering

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	07/01/2024
Closeout	06/02/2031

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$0
Construction	$31,500,000
Closeout	$0
Est. Program Cost	**$31,500,000**
Contingency Budget	$0
Est. Project Costs	**$31,500,000**



GN017400

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 55 110 220 330 440 Feet

GN017400

Treatment Plant Dewatering Replacement Phase III

HRSD

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CIP Location

Treatment Plant Dewatering Replacement Phase III

PR_GN017400

System: General
Type: Biosolids

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$3,911	$315	$346	$3,250	$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: Christopher Wilson
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2021
PER	02/01/2022
Design Delay	07/01/2022
Design	08/01/2022
Bid Delay	
PreConstruction	04/01/2023
Construction	07/01/2023
Closeout	06/01/2024

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$315,000
Design	$336,000
PreConstruction	$10,000
Construction	$3,250,000
Closeout	$0
Est. Program Cost	**$3,911,000**
Contingency Budget	$1,000,000
Est. Project Costs	**$4,911,000**

Fleet Management Program

PR_GN017500

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$13,088	$0	$0	$2,392	$2,698	$2,469	$1,833	$1,843	$1,853	$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

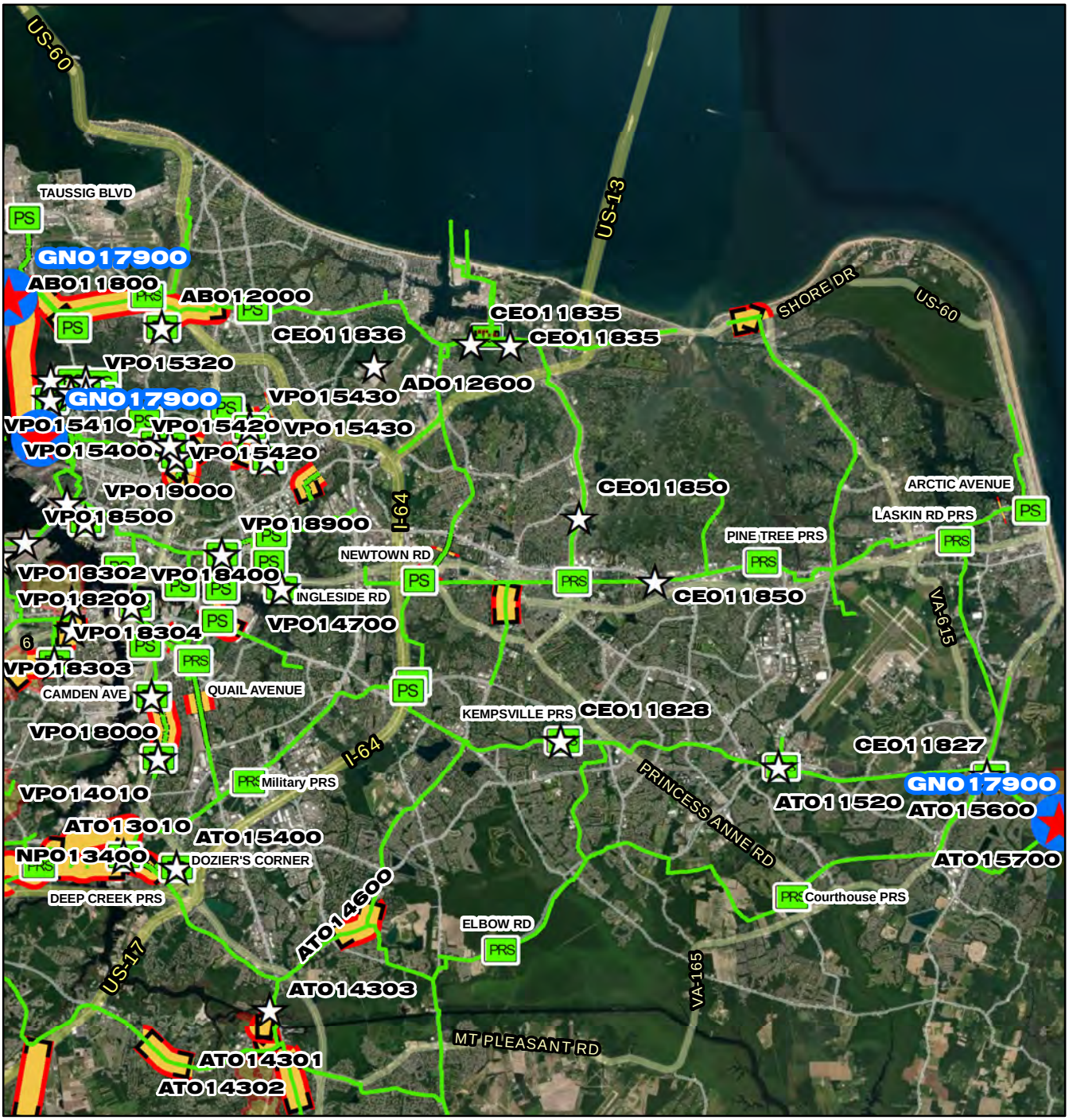
Contacts-Requesting Dept: Operations-Support Systems
Contacts-Dept Contacts: Lee Heath
Contacts-Managing Dept: Operations-Support Systems

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	$13,087,716
Closeout	$0
Est. Program Cost	**$13,087,716**
Contingency Budget	$0
Est. Project Costs	**$13,087,716**



GN01 7900

- 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
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 5,000 10,000 20,000 30,000 40,000 Feet

GN01 7900

Solids System Improvements for Army Base MHI Offline

HRSD

N
W E
S

CIP Location

Solids System Improvements for Army Base MHI Offline

PR_GN017900

System: General
Type: Biosolids

Driver Category: Clean Air Act
Project Phase: Pre Planning
Regulatory: Clean Air Act

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$4,680	$680	$2,667	$1,333	$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: Jeff Layne
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2020
PER	10/15/2020
Design Delay	05/17/2021
Design	06/01/2021
Bid Delay	04/01/2022
PreConstruction	05/01/2022
Construction	07/01/2022
Closeout	01/01/2024

COST ESTIMATE

Cost Estimate Class:	**Class 1**
PrePlanning	$0
PER	$44,864
Design	$605,100
PreConstruction	$30,000
Construction	$4,000,000
Closeout	$0
Est. Program Cost	**$4,679,964**
Contingency Budget	$525,000
Est. Project Costs	**$5,204,964**

Inflow Reduction Program - Phase I

PR_GN018000

System: General
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$1,951	$1,036	$753	$163	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

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

PROJECT JUSTIFICATION

Hydrographs, flow monitoring, and conductivity monitoring indicate that rapid increases in flow occur during wet weather and high tide events. The rapid inflow of water into the system increases the risk of locality overflows due to limited hydraulic capacity and increases the risk of force main failures due to increased force main operating pressures. In addition, the inflow of saltwater during high tide events creates settling problems at the treatment plants and poses a threat to efficient SWIFT implementation due to the bromide in the saltwater being converted to bromate during ozonation. Sea Level Rise projections and predictions of more frequent high intensity rain events point to a future of increased inflow and inflow events. This project will develop and test inflow reduction techniques and inform HRSD's inflow reduction program into the future.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Ryan Radspinner
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2020
PER	07/29/2020
Design Delay	09/17/2020
Design	05/27/2021
Bid Delay	08/30/2021
PreConstruction	05/09/2022
Construction	06/01/2021
Closeout	08/01/2023

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$500,000
PER	$0
Design	$0
PreConstruction	$0
Construction	$1,400,000
Closeout	$100,000
Est. Program Cost	**$2,000,000**
Contingency Budget	$0
Est. Project Costs	**$2,000,000**

Conceptual Project Development (FY23)

PR_GN018400

System: General
Type: Strategic Planning

Driver Category: Risk Mitigation
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$413	$0	$413	$0	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

Studies included in this project are: Willoughby Pump Station, Providence Creek Force Main, Plume Pump Station, WBTP FOG, WBTP Clarifier Effluent

PROJECT JUSTIFICATION

This project will provide funding to take a concept for a CIP project to a level that it can be chartered, budgeted, and scheduled appropriately.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Finance
Contacts-Dept Contacts: Erin Girardi
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

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

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$413,000
PER	$0
Design	$0
PreConstruction	$0
Construction	$0
Closeout	$0
Est. Program Cost	**$413,000**
Contingency Budget	$0
Est. Project Costs	**$413,000**

Fleet Management (FY23)

PR_GN018500

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$2,623	$0	$2,623	$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	

COST ESTIMATE

Cost Estimate Class:	**Class 3**
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$0
Construction	$2,622,525
Closeout	$0
Est. Program Cost	**$2,622,525**
Contingency Budget	$0
Est. Project Costs	**$2,622,525**

North Shore Galvanic Cathodic Protection Rehabilitation

PR_GN018600

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$1,293	$0	$0	$423	$870	$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	02/01/2023
Design Delay	07/01/2023
Design	07/01/2023
Bid Delay	02/01/2024
PreConstruction	02/01/2024
Construction	05/01/2024
Closeout	01/01/2025

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$0
Design	$116,000
PreConstruction	$17,400
Construction	$1,160,000
Closeout	$0
Est. Program Cost	**$1,293,400**
Contingency Budget	$232,000
Est. Project Costs	**$1,525,400**

South Shore Galvanic Cathodic Protection Rehabilitation Phase I

PR_GN018700

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$1,461	$0	$0	$0	$144	$1,317	$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	05/01/2024
Design Delay	10/01/2024
Design	10/01/2024
Bid Delay	05/01/2025
PreConstruction	05/01/2025
Construction	08/01/2025
Closeout	04/01/2026

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$0
Design	$131,000
PreConstruction	$19,650
Construction	$1,310,000
Closeout	$0
Est. Program Cost	**$1,460,650**
Contingency Budget	$262,000
Est. Project Costs	**$1,722,650**

South Shore Galvanic Cathodic Protection Rehabilitation Phase II

PR_GN018800

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$1,461	$0	$0	$94	$1,203	$164	$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	07/01/2023
PER	09/01/2023
Design Delay	02/01/2024
Design	02/01/2024
Bid Delay	09/01/2024
PreConstruction	09/01/2024
Construction	12/01/2024
Closeout	08/01/2025

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$0
Design	$131,000
PreConstruction	$19,650
Construction	$1,310,000
Closeout	$0
Est. Program Cost	**$1,460,650**
Contingency Budget	$262,000
Est. Project Costs	**$1,722,650**

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$2,490	$0	$830	$415	$415	$415	$415	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

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

PROJECT JUSTIFICATION

This project will improve the overall reliability of the North Shore collection system, 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	12/01/2022
Construction	08/01/2023
Closeout	12/01/2027

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$0
Construction	$2,490,000
Closeout	$0
Est. Program Cost	**$2,490,000**
Contingency Budget	$498,000
Est. Project Costs	**$2,988,000**

Water Quality Department Instrumentation Equipment (FY23)

PR_GN019000

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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$104	$0	$104	$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 2023.

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 07/01/2022
Closeout

COST ESTIMATE

Cost Estimate Class:	**Class 2**
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$0
Construction	$103,500
Closeout	$0
Est. Program Cost	**$103,500**
Contingency Budget	$0
Est. Project Costs	**$103,500**