



FLOOD PROTECTION PROGRAM

Status Report | December 2024

***All asterisks represent updated information.**

Prepared for
City of Virginia Beach

Issued January 8, 2025



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PROGRAM PROGRESS HIGHLIGHTS

The City of Virginia Beach citizens passed a bond referendum on November 2, 2021, to allow the utilization of real estate taxes to fund flood protection projects. The referendum specifically included the design and construction of flood protection strategies making up the Flood Protection Program (FPP). Since the approval of the referendum, a 10-year (2022-2032) implementation plan comprising seven (7) Master Projects was developed to design and construct projects city-wide to mitigate flooding impacts on the community.

This monthly report intends to inform the City Council and the Flood Prevention Bond Referendum Oversight Board (FPBROB) of the program's progress along with risk and strategic decisions that may require Council support.

inter



South Plaza Trail and Donna Wood Drive intersection installing 54 inch diameter stormwater pipe.

***Monthly Highlights**

- ✓ Old Forge Road & Red Lion Drainage Improvements completed construction.
- ✓ City Staff presented to the Bayfront Advisory Committee the Pleasure House Point Mitigation Bank project Thursday December 19, 2025
- ✓ Community Meetings:
 - District 2, Hosted by Councilmember Barbara Henley, Thursday, December 5, 2024, 5:15 PM – 7:00 PM, Municipal Center – Building 19, 2416 Courthouse Drive, Virginia Beach
 - District 7, Hosted by Councilmember Sabrina Wooten, Thursday, December 12, 2024, 6:30 PM – 8:00 PM, Tallwood High School, 1668 Kempsville Road, Virginia Beach

***Upcoming Activities**

- ✓ City Council discussion and vote to approve an ordinance to transfer funds within the Capital Improvement Program for the Pleasure House Point Wetland Mitigation Bank, to provide limitation upon the use of Mitigation Credits created by the Pleasure House Point Wetland Mitigation Bank project, and to provide for efforts to reduce tree loss on Tuesday January 7, 2025
- ✓ Community Meeting:
 - District 2, Hosted by Councilmember Barbara Henley, Thursday, January 23, 2025, 5:15 PM – 7:00 PM, Municipal Center – Building 19, 2416 Courthouse Drive, Virginia Beach

Program Estimates

***No estimate changes this month.** The table below presents the FPP estimates at the master project level showing the program level benchmark estimate at \$982M and the current program cost estimate of \$1,046M.

MASTER PROJECTS	BENCHMARK ESTIMATE (\$M)	CURRENT ESTIMATE (\$M)
WINDSOR WOODS/PAP/THE LAKES	\$467	\$501
EASTERN SHORE DRIVE	\$91	\$99
LAKE BRADFORD, CHUBB LAKE	\$149	\$152
CENTRAL RESORT DISTRICT	\$113	\$113
SOUTHERN RIVERS WATERSHED	\$110	\$111
STORMWATER GREEN INFRASTRUCTURE	\$38	\$55
LINKHORN BAY DRAINAGE BASIN	\$14	\$15
TOTAL	\$982	\$1,046

The table below identifies the 8 projects in planning totaling \$761M.

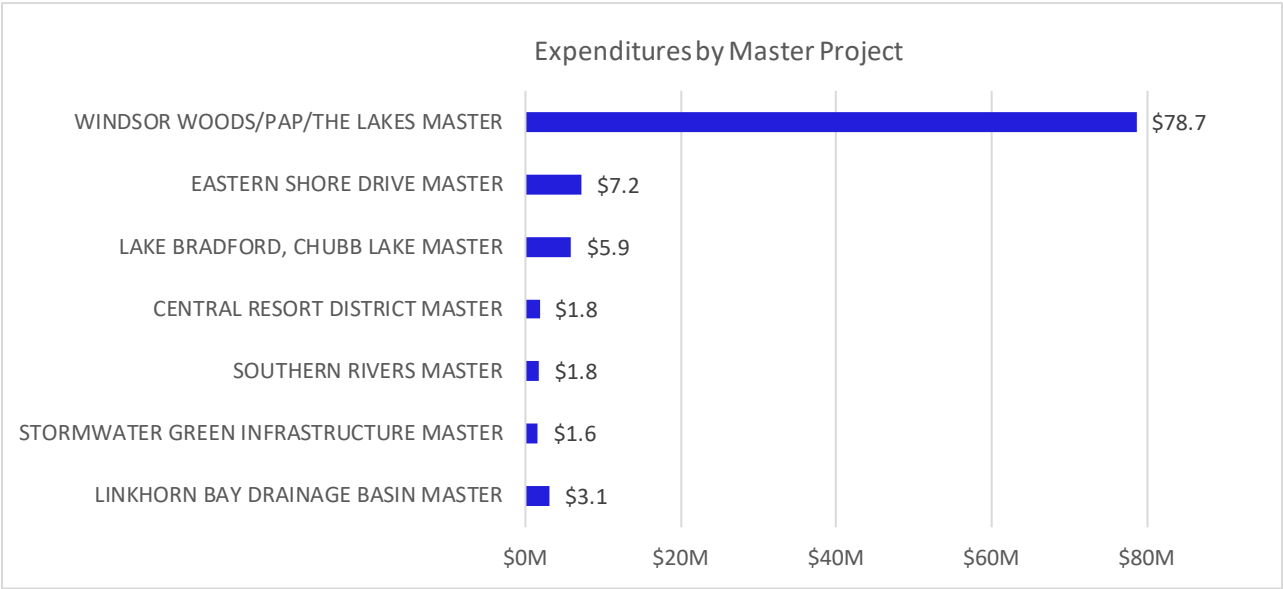
8 PROJECTS IN PLANNING	ESTIMATE PHASE	CURRENT ESTIMATE	VARIANCE
CENTRAL RESORT DISTRICT DRAINAGE IMPROVEMENTS (DESIGN-BUILD)	PLANNING	\$113,000,000	\$0
EASTERN SHORE DRIVE VISTA CIRCLE PUMP STATION 1A	PLANNING	\$18,100,000	\$0
EASTERN SHORE DRIVE BUNDLE	PLANNING	\$43,424,000	\$0
CHURCH POINT/THOROUGHGOOD BMP & CONVEYANCE	PLANNING	\$43,850,000	\$0
LAKE BRADFORD/ CHUBB LAKE PS & OUTFALL (DESIGN-BUILD)	PLANNING	\$102,400,000	\$0
PUNGO FERRY ROAD IMPROVEMENTS	PLANNING	\$33,220,000	\$0
WEST NECK BRIDGE (DESIGN-BUILD)	PLANNING	\$69,000,000	\$0
WINDSOR WOODS/PAP/THE LAKES BUNDLE (DESIGN-BUILD)	PLANNING	\$337,862,000	\$0
TOTALS		\$760,856,000	\$0

The table below identifies the 18 projects with baseline estimates totaling \$221M. Currently, these projects are estimated at \$285M with a variance of \$64M.

18 PROJECTS WITH BASELINES	ESTIMATE PHASE	BASELINE ESTIMATE	CURRENT ESTIMATE	VARIANCE
SANDBRIDGE/NEW BRIDGE INTERSECTION IMPROVEMENTS	60	\$7,990,000	\$8,385,470	\$395,470
ESD POINCIANA PUMP STATION	60	\$18,463,900	\$26,804,252	\$8,340,352
ESD CAPE HENRY CANAL DRAINAGE IMPROVEMENTS, 1F & 1G	90	\$8,396,065	\$7,946,971	-\$449,094
BOW CREEK STORMWATER PARK (SECTION 2)	90	\$60,117,860	\$68,015,345	\$7,897,485
MARSH RESTORATION IN BACK BAY	100	\$26,667,953	\$46,459,500	\$19,791,547
ELIZABETH RIVER FLOODPLAIN RESTORATION PROJECT	PS&E	\$10,864,300	\$8,351,900	-\$2,512,400
FIRST COLONIAL ROAD AND OCEANA BLVD DRAINAGE IMPROVEMENT	PS&E	\$6,971,196	\$7,737,088	\$765,892
SEATAK NEIGHBORHOOD DRAINAGE IMPROVEMENT	CONSTRUCTION	\$6,940,000	\$6,925,000	-\$15,000
SOUTH PLAZA TRAIL/PRESIDENTIAL BLVD	CONSTRUCTION	\$4,406,671	\$11,644,593	\$7,237,922
WINDSOR WOODS TIDE GATE	CONSTRUCTION	\$11,430,000	\$21,209,000	\$9,779,000
BOW CREEK STORMWATER PARK (SECTION 1)	CONSTRUCTION	\$42,089,000	\$41,729,000	-\$360,000
OLD FORGE RD & RED LION RD DRAINAGE IMPROVEMENTS	COMPLETE	\$2,711,309	\$5,093,416	\$2,382,107
LAKE BRADFORD DREDGING	COMPLETE	\$1,512,536	\$2,615,000	\$1,102,464
ESD CAPE HENRY CANAL PHASE II - GRAVITY SEWER RELOCATION 1C	COMPLETE	\$2,910,350	\$2,486,451	-\$423,899
LAKE PLEASURE HOUSE OUTFALL	COMPLETE	\$523,885	\$1,303,500	\$779,615
CLUB HOUSE ROAD STORM DRAINAGE	COMPLETE	\$4,902,084	\$4,134,071	-\$768,013
LAKE BRADFORD/CHUBB LAKE PER/DESIGN	COMPLETE	\$624,100	\$2,082,000	\$1,457,900
WINDSOR WOODS DRAINAGE	COMPLETE	\$3,606,310	\$11,921,448	\$8,315,138
TOTALS		\$221,127,519	\$284,844,005	\$63,716,486

Program Spending

Spending updates this reporting period: As detailed in the following graphic, the FPP Master Project expenditures through ***the end of December 2024**, totaling ***\$100.1M**.



Monthly Appropriation Project Transfers

There were no appropriation project transfers this month.

Program Schedule

***Old Forge Rd & Red Lion Rd Drainage Improvements completed construction FY24, schedule updated from FY25.** The table below represents a high-level summary of the planning (P), design (D), and construction (C) timeframes included in the Master Program Schedule by project.

FPP PROJECTS	2023	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
WINDSOR WOODS/PAP/THE LAKES MASTER PROJECT											
CLUB HOUSE ROAD STORM DRAINAGE	C	C									
SOUTH PLAZA TRAIL/PRESIDENTIAL BLVD	C	C	C								
*OLD FORGE RD & RED LION RD DRAINAGE IMPROVEMENTS	D	C									
BOW CREEK STORMWATER PARK (SECTIONS 1 AND 2)	D	C	C	C	C	C	C	C			
WINDSOR WOOD TIDE GATE	C	C	C								
WINDSOR WOODS/PAP/THE LAKES BUNDLE (DESIGN-BUILD)	P	D	D	D	C	C	C	C	C		
EASTERN SHORE DRIVE MASTER PROJECT											
ESD CAPE HENRY CANAL PHASE 1C	C	C									
EASTERN SHORE DRIVE BUNDLE	D	D	D	C	C	C					
ESD CAPE HENRY CANAL DRAINAGE IMPROVEMENTS IF, IG	D	D	D	C	C	C					
ESD POINCIANA PUMP STATION	D	D	D	C	C	C					
ESD VISTA CIRCLE PUMP STATION 1A			D	D	C	C	C	C			
LAKE BRADFORD/CHUBB LAKE MASTER PROJECT											
LAKE BRADFORD DREDGING	C	C									
LAKE PLEASURE HOUSE OUTFALL	C	C									
CHURCH POINT/THOROUGHGOOD BMP & CONVEYANCE	P	P	D	D	D	C	C	C	C		
LAKE BRADFORD/CHUBB LAKE PS & OUTFALL (DESIGN-BUILD)	P	P	D	D	D	C	C	C			
CENTRAL RESORT DISTRICT MASTER PROJECT											
CENTRAL RESORT DISTRICT DRAINAGE (DESIGN-BUILD)		P	P	D	D	D	C	C	C	C	C
SOUTHERN REIVERS MASTER PROJECT											
SANDBRIDGE/NEW BRIDGE INTERSECTION IMPROVEMENTS	D	D	D	D	D	D	C	C	C		
PUNGO FERRY ROAD IMPROVEMENTS	D	D	D	D	D	C	C	C	C		
WEST NECK BRIDGE (DESIGN-BUILD)		P	P	D	D	D	C	C	C	C	
STORMWATER GREEN INFRASTRUCTURE MASTER PROJECT											
MARSH RESTORATION IN BACK BAY	D	D	C	C	C	C					
ELIZABETH RIVER FLOODPLAIN RESTORATION	D	D	C								
LINKHORN BAY DRAINAGE MASTER PROJECT											
SEATACK NEIGHBORHOOD DRAINAGE IMPROVEMENT	D	C	C	C							
FIRST COLONIAL RD & OCEANA BLVD DRAINAGE	D	D	C	C							

Note: The dominant activity is shown for each fiscal year in the above table. Actual work phases are likely to span multiple FYs.

Program Phase Overview

The table below shows the current delivery phase for each FPP project. Project phases include future projects, preliminary engineering, design, design-build contracts, construction in progress, construction complete, and procurement.

Future Projects	Preliminary Engineering	Design	Design-Build	Construction In-Progress	Construction Complete
Vista Circle Pump Station	West Neck Creek Bridge	Eastern Shore Drive (ESD) Drainage Bundle	Windsor Wood, PAP, The Lakes Bundle	Windsor Woods Tide Gate	Club House Road Drainage
	Pungo Ferry Road Improvements	ESD Roadway Drainage 1F & 1G	Lake Bradford/Chubb Lake Pump Station & Outfall <i>(In Procurement)</i>	South Plaza Trail, Presidential Blvd Drainage	Cape Henry Canal Gravity Sewer Relocation
	Central Resort District Drainage Improvements	Poinciana Pump Station		Bow Creek Stormwater Park (Section 1)	Lake Pleasure House Outfall
		Sandbridge/ New Bridge Intersection <i>(On Hold)</i>		Seatack Drainage	Lake Bradford Dredging
		Bow Creek Stormwater Park (Section 2)			Old Forge Road & Red Lion Drainage
		Elizabeth River Floodplain Restoration			
		First Colonial Rd Oceana Blvd Drainage <i>(Bid & Award)</i>			
		Back Bay Marsh Restoration			
		Churchpoint/ Thoroughgood BMP & Conveyance			

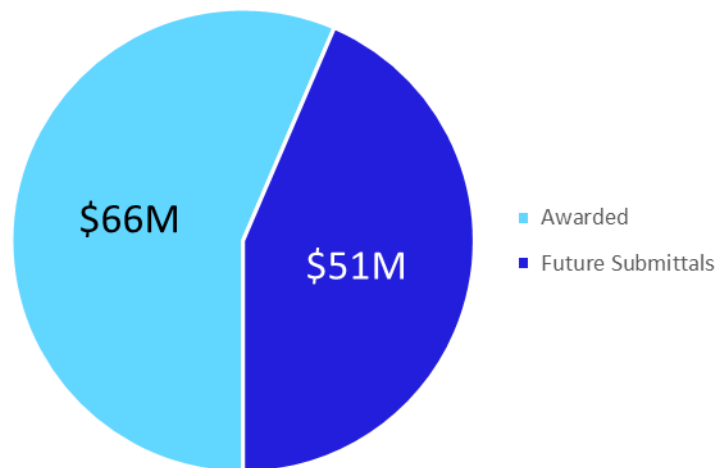
***Updated Since Last Report**

Procurement Activity

- The Lake Bradford/Chubb Lake Pump Station and Outfall Project is currently in procurement for the Design-Build Team. Team selection is scheduled for Q1 2025.
- First Colonial Road and Oceana Boulevard Drainage Improvements project is currently in the Bid & Award phase and is scheduled to begin construction in Q1 2025.

Grant Program

The City has received ~\$66M and continues to seek grant funding from various state and federal grant programs.



The Federal Emergency Management Agency (FEMA) awarded \$25.1M to the Eastern Shore Drive Drainage Bundle from the Building Resilient Infrastructure and Communities (BRIC) fund. The Virginia Department of Conservation and Recreation (DCR) awarded grants from the Virginia Community Flood Preparedness Fund (CFPF) for the following projects: \$3.0M for Elizabeth River Floodplain Restoration, \$1.9M for Seatack Neighborhood Drainage Improvements, \$2.0M for First Colonial Road and Oceana Boulevard Drainage Improvements and, \$5.0M for Marsh Restoration project in Back Bay. The Marsh Restoration project in Back Bay also received a \$9.9M grant from the National Coastal Resilience Fund through the National Fish and Wildlife Foundation (NFWF). The U.S. Department of Transportation Federal Highway Administration (FHWA) awarded \$19.0M to the Pungo Ferry Road project from the Promoting Resilient Operations for Transportation (PROTECT) Discretionary Grant Program.

The Lake Bradford/Chubb Lake Pump Station and Outfall project was not selected to receive funding from the Building Resilient Infrastructure and Communities (BRIC) grant from the Federal Emergency Management Agency (FEMA). The project will reapply during the next open application period.

The West Neck Creek Bridge project is still under consideration for the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grants.

The Bow Creek Stormwater Park Section 2 Project will be included in applications for potential grants through the National Fish and Wildlife Foundation and the Community Flood Preparedness Fund (CFPF).

***Updated Since Last Report**

The following table summarizes the total grant amounts awarded for a specific FPP Master Schedule and anticipated grant funding to be acquired from future grant applications.

FPP Master Projects	Awarded	Future Submittals
Eastern Shore Drive	\$25M	
Southern Rivers	\$19M	
**Stormwater Green Infrastructure	\$18M	
Linkhorn Bay Drainage	\$4M	
Lake Bradford/Chubb Lake		\$35M
Windsor Woods, Princess Anne Plaza, The Lakes		\$11M
Central Resort District		\$5M

**The Marsh Restoration Project in Back Bay and the Elizabeth River Floodplain Restoration Project are included in the Stormwater Green Infrastructure Master Project

Program Communications

* December 2024 Highlights and Upcoming January Activities

- The [Instagram reel](#) about the Pleasure House Point Wetlands Mitigation Bank Project uses on-site video and provides a project overview. Since it was posted on December 2, it has garnered 17,975 plays and reached 10,851 accounts.
- The [Pleasure House Point Wetlands Restoration Project](#) webpage was created and made live on December 5. To date, it's received 1,811 views.
- The ["Preserving Pleasure House Point: A Return to Natural Wetlands"](#) long-form video was posted to YouTube on December 6 and shared on social media. The video received 9,950 views across all platforms.
- The ["The Ripple Effect: Fourth Quarter 2024 Update on the Flood Protection Program and a Stormwater Overview"](#) blog article was posted to the City website on December 12 and has 297 views. It was shared on social media and included in the City newsletter sent on December 13.
- The ["Bayfront Advisory Commission Meeting on Pleasure House Point Wetland Restoration Project"](#) video was posted to YouTube on December 20 and has received 656 views.
- On December 20, the ["Preserving Pleasure House Point"](#) blog article posted to the City website, was shared on social media and sent in the City newsletter. The blog received 490 views. It was also shared on social media and received over 11,400 impressions (number of times the content was shown on a screen).
- On December 23, the ["The Real Deal: Debunking 13 Myths about the Pleasure House Point Wetlands Restoration Project"](#) blog article posted to the City website on December 23 and received 1,693 views. It was shared on social media and received over 14,800 impressions (number of times the content was shown on a screen).
- Of note, the two Pleasure House Point wetlands Facebook posts from the December 20 and December 23 blogs were the City's most engaging posts of the month. The engagement rate was 25.3% and 23.1 % respectively. On average, the City's Facebook posts this month (all posts, not just for the Flood Protection Program) had an average engagement rate of 8.2%.
- Future blog articles planned for January:
 - Wetlands credits and how they work
 - Recap of the Virginia Beach Coastal Storm Risk Management Study virtual webinars to help educate residents about the study and future coastal flood mitigation strategies
- The next "How It Works" video will be planned around details from a January 7 meeting with City Communications and Kyle Coolbaugh.
- The Virginia Beach City Public Schools Elementary Science Coordinator is working on lesson plans using the Ripple Effect Teacher's Resource Guide. Suggested topics for the lesson plans include: informing future residents, promoting awareness of a local problem, showcasing City efforts, and helping students realize their potential impact. The Communications Office is finalizing an ADA compliant version of the guide for digital use.

*Updated Since Last Report

PROJECT LEVEL INFORMATION

Windsor Woods, Princess Anne Plaza, and The Lakes Master Project

The Windsor Woods, Princess Anne Plaza, and The Lakes Master Project has contractually obligated ***\$126.0M** of which ***\$78.7M** has been spent.

The anticipated project schedules are illustrated below. South Plaza and Presidential Blvd Drainage schedule delay due to weather delays. Old Forge Rd and Red Lion Rd Drainage schedule delay due to weather, franchise utilities and design changes due to site conditions.

Anticipated Schedule Design-Bid-Build		Preliminary Engineering	Design Start	Invitation to Bid	Construction Start	Construction Complete
Club House Road	BL	Q1 2017	Q1 2018	Q3 2020	Q1 2021	Q4 2022
	Current	√	√	√	√	√
Windsor Woods Tide Gate	BL	Q3 2019	Q4 2021	Q2 2022	Q4 2022	Q2 2025
	Current	√	√	√	√	→
South Plaza Trail and Presidential Blvd Drainage Improvements	BL	Q1 2017	Q1 2018	Q2 2022	Q2 2023	Q2 2025
	Current	√	√	√	√	Q3 2025
Old Forge Rd and Red Lion Rd Drainage Improvements	BL	Q1 2017	Q1 2018	Q1 2023	Q3 2023	Q3 2024
	Current	√	√	√	√	Q4 2024 *√
Bow Creek Stormwater Park Section I	BL	Q4 2019	Q3 2020	Q1 2023	Q3 2023	Q4 2026
	Current	√	√	√	√	→
Bow Creek Stormwater Park Section II	BL	Q4 2019	Q3 2023	Q1 2026	Q3 2026	Q2 2030
	Current	√	→			

Projects Identified in the Bond Referendum

*Updated Since Last Report

Variance

Baseline (BL)

Activity complete √

Activity in-progress →

Windsor Woods, Princess Anne Plaza, and The Lakes Master Project (Continued)

Anticipated Schedule Design- Build		Bridging Documents	RFQ Advertisement	Design- Builder Selected	Construction Start	Construction Complete
Windsor Woods, Princess Anne Plaza, and The Lake Bundle*	No BL Current	Q2 2022 √	Q1 2023 √	Q3 2023 √	TBD	TBD



*Windsor Woods, Princess Anne Plaza, and The Lakes Bundle includes the following projects:

1. Windsor Woods Pump Station
2. Windsor Woods Flood Barriers
3. Windsor Woods Thalia Creek/Lake Trashmore Improvements
4. PAP North London Bridge Creek Tide Gate, Pump Station, and Barriers
5. The Lakes Holland Road Gate
6. The Lakes Flood Barriers
7. The Lakes South London Bridge Creek Channels and Gate

Projects Identified in the Bond Referendum

*Updated Since Last Report

Variance

Baseline (BL)

Activity complete ✓

Activity in-progress →

Eastern Shore Drive Master Project

The Eastern Shore Drive Master Project has contractually obligated \$8.5M of which ***\$7.2M** has been spent. The anticipated project schedules are illustrated below:

Anticipated Schedule Design-Bid-Build		Preliminary Engineering	Design Start	Invitation to Bid	Construction Start	Construction Complete
Cape Henry Canal Phase II – Gravity Sewer Relocation	BL Current	Q2 2017 √	Q1 2020 √	Q4 2021 √	Q2 2022 √	Q3 2023 √
North Shore Street (1F) & Cape Henry Drive (1G) Drainage Improvements	BL Current	Q2 2017 √	Q2 2023 →	Q2 2025	Q3 2025	Q2 2027
Poinciana Pump Station	BL Current	Q2 2017 √	Q2 2023 →	Q2 2025	Q3 2025	Q3 2028
Vista Circle Pump Station	No BL Current	Q2 2017 √	TBD	TBD	TBD	TBD
Eastern Shore Drive Bundle*	No BL Current	Q2 2017 √	Q4 2022 →	Q2 2025	Q3 2025	Q1 2028

*Eastern Shore Bundle includes the following projects:

1. Elevate Lynnhaven
2. Lynnhaven Colony Park Pump Station
3. Lynnhaven Drive Pump Station
4. Cape Henry Canal Phase II – Widen and Deepen Canal

Projects Identified in the Bond Referendum

*Updated Since Last Report

Variance

Baseline (BL)

Activity complete √

Activity in-progress →

Lake Bradford/Chubb Lake Master Project

The Lake Bradford/Chubb Lake Master Project has contractually obligated ***\$8.1M** of which \$5.9M has been spent. The anticipated project schedules are illustrated below:

Anticipated Schedule Design-Bid-Build		Preliminary Engineering	Design Start	Invitation to Bid	Construction Start	Construction Complete
Lake Pleasure House Outfall	BL	Q2 2018	Q2 2019	Q3 2021	Q3 2022	Q3 2023
	Current	√	√	√	√	√
Lake Bradford Dredging	BL	Q2 2018	Q2 2019	Q2 2022	Q4 2022	Q4 2023
	Current	√	√	√	√	√
Church Point/ Thoroughgood BMP and Drainage Improvements	No BL	Q1 2022	Q2 2024	TBD	TBD	TBD
	Current	√	→			

Anticipated Schedule Design-Build		Bridging Documents	Design- Builder RFP	Design- Builder Selected	Construction Start	Construction Complete
Lake Bradford/Pump Station & Outfall	No BL	Q3 2022	Q2 2024	TBD	TBD	TBD
	Current	√	→			

Projects Identified in the Bond Referendum

*Updated Since Last Report

Variance

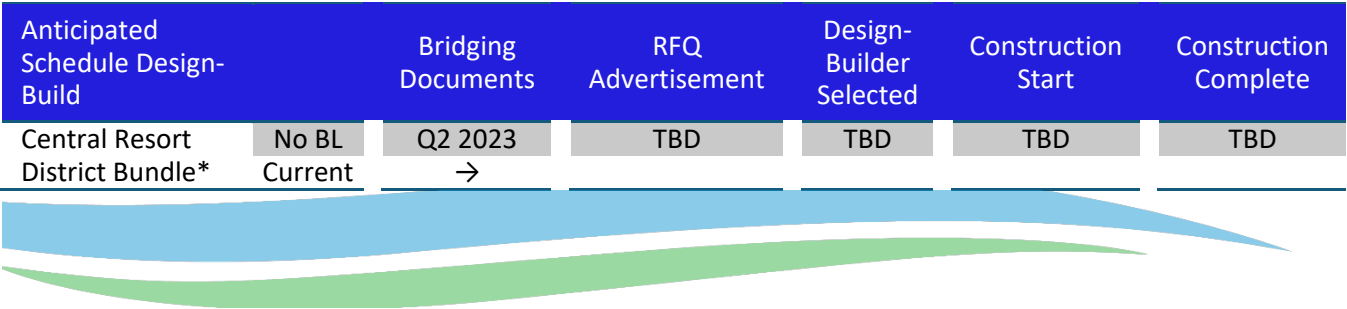
Baseline (BL)

Activity complete √

Activity in-progress →

Central Resort District Master Project

The Central Resort District Master Project has contractually obligated \$2.7M of which \$1.8M has been spent. The anticipated project schedules are illustrated below:



*Central Resort Bundle includes:

1. 21st and Baltic
2. 24th Street Culvert
3. Central Resort District Drainage Improvements

Southern Rivers Master Project

The Southern Rivers Master Project has contractually obligated \$4.1M of which ***\$1.8M** has been spent.

The anticipated project schedules are illustrated below:

Anticipated Schedule Design-Bid-Build		Preliminary Engineering	Design Start	Invitation to Bid	Construction Start	Construction Complete
Sandbridge/New Bridge Intersection Improvements	BL Current	Q2 2018 √	Q4 2022 →	Q3 2027	Q1 2028	Q1 2030
Pungo Ferry Road Improvements	No BL Current	Q1 2023 →	TBD	TBD	TBD	TBD

Anticipated Schedule Design-Build		Bridging Documents	RFQ Advertisement	Design- Builder Selected	Construction Start	Construction Complete
West Neck Bridge (Design-Build)	No BL Current	Q4 2023 →	TBD	TBD	TBD	TBD

The Sandbridge/New Bridge Intersection Improvements Project is on hold pending the completion of the Environmental Impact Statement for the Nimmo Parkway VIIIB road project.

Stormwater Green Infrastructure Master Project

The Stormwater Green Infrastructure Master Project has contractually obligated \$3.8M of which \$1.6M has been spent.

The anticipated project schedules are illustrated below. The City has still not received the critical environmental permits for projects Marsh Restoration in Back Bay and Elizabeth River Flood Restoration. While The City is working diligently with the regulators, we must also look realistically at the project schedule. Due to the construction moratorium for environmental concerns that must be considered annually from October to March, we are now forecasting the Marsh Restoration in Back Bay project will need a third construction season in 2027.

Anticipated Schedule Design-Bid-Build		Preliminary Engineering	Design Start	Invitation to Bid	Construction Start	Construction Complete
Marsh Restoration in Back Bay	BL	Q3 2021	Q4 2021	Q4 2023	Q2 2024	Q4 2026
	Current	√	→	*Q2 2025	*Q3 2025	Q4 2027
Elizabeth River Floodplain Restoration	BL	Q3 2021	Q2 2022	Q1 2024	Q3 2024	Q1 2025
	Current	√	→	*Q1 2025	*Q2 2025	*Q1 2026

Projects Identified in the Bond Referendum

*Updated Since Last Report

Variance

Baseline (BL)

Activity complete √

Activity in-progress →

Linkhorn Bay Master Project

The Linkhorn Bay Master Project has contractually obligated \$6.7M of which ***\$3.1M** has been spent.

The anticipated project schedules are illustrated below. The schedule delay for the First Colonial Road and Oceana Boulevard project is due to coordination with an existing transportation project. ***Seatack Drainage Improvement delay to the completion of construction is due to unforeseen private utility conflicts.**

Anticipated Schedule Design-Bid-Build		Preliminary Engineering	Design Start	Invitation to Bid	Construction Start	Construction Complete
Seatack Neighborhood Drainage Improvements	BL	Q4 2020	Q3 2022	Q4 2023	Q1 2024	Q1 2025
	Current	✓	✓	✓	✓	*Q3 2025 →
First Colonial Road and Oceana Boulevard Drainage Improvements	BL	Q4 2020	Q1 2023	Q1 2024	Q2 2024	Q3 2025
	Current	✓	✓	Q4 2024 *✓	Q1 2025	Q4 2025

Projects Identified in the Bond Referendum

***Updated Since Last Report**

Variance

Baseline (BL)

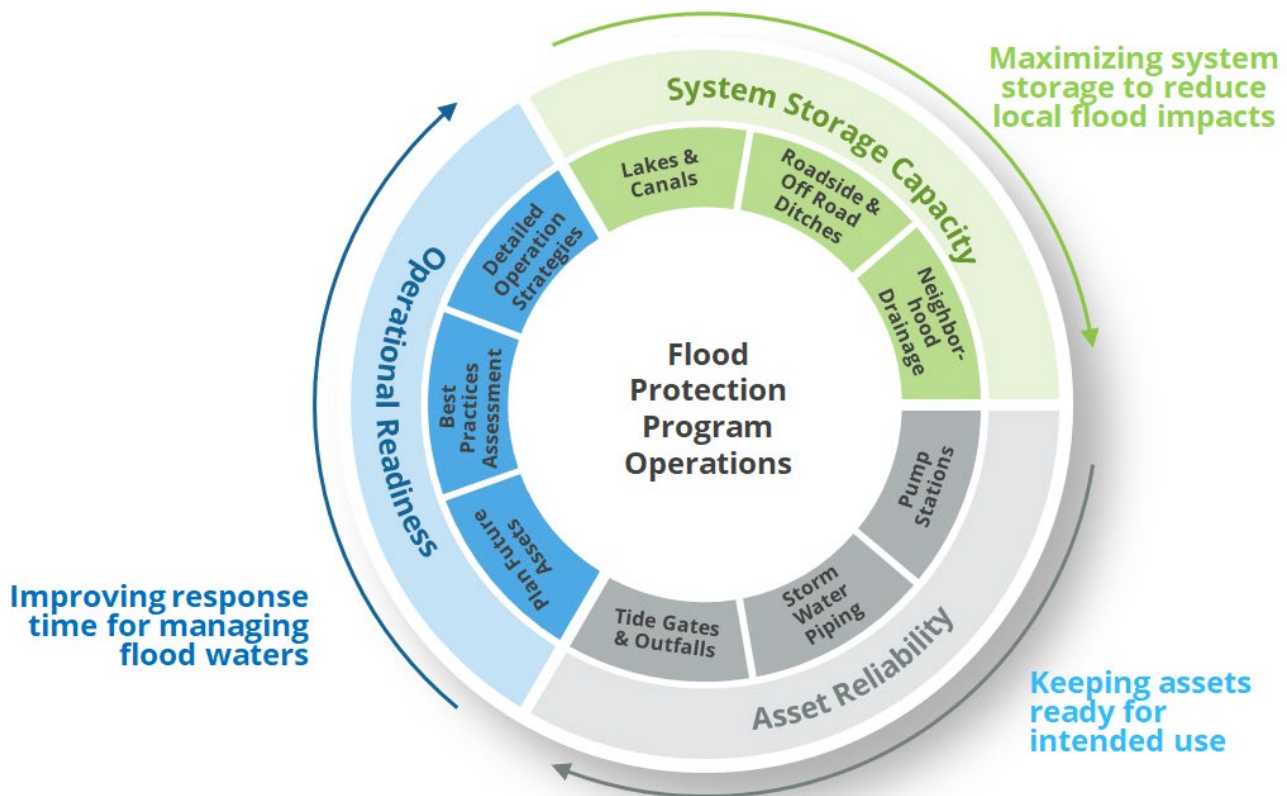
Activity complete ✓

Activity in-progress →

SUPPORTING CAPITAL INVESTMENTS

The Phase 1 FPP Master projects are not the only flood mitigation and protection work underway in the City. This section lists other capital investment projects and operational activities that support key flood protection drivers such as maximizing system storage to reduce local flood impacts; keeping assets ready for their intended use; and maintaining operational readiness that continuously improves the City's response time for managing flood waters.

The following figure presents how the system storage capacity projects, such as lakes, canals, roadside ditches, off-road ditches, and neighborhood drainage improvements, help maximize available system storage to reduce local flood impacts. Also shown are the asset reliability improvements to tide gates, outfalls, stormwater piping, and pump stations to keep assets ready for their intended use. Finally, the figure connects how activities such as planning for future assets; best practices; and detailed operation strategies help improve response time for managing flood waters.



***Updated Since Last Report**

System Storage Capacity

Ashville Park Drainage Improvements Phase 1 Projects

- Princess Anne Farm Ditch Stabilization – Complete
- Roadway/Drainage/Intersection Improvements – Complete
- Stormwater Pump Station – ***Complete**
 - ~99% Complete – ***Anticipated finish Q1 2025**
 - Under Budget: ~\$12M vs ~\$10.3M
- Cost Participation Ashville Developer – Under Construction
 - 3 new Stormwater Ponds (BMPs)
 - Existing Pond Expansion
 - Channels Connecting Ponds
 - Regrade and Stabilize Existing Ditches
- ~99% Complete – ***Anticipated finish Q1 2025**

***South Lake Holly Watershed Section IIIB Project**

- Remaining construction areas include the 500 and 800 blocks of Maryland Avenue, the 800 block of Delaware Avenue, and the intersection of Delaware and Cypress Avenues.
- Under construction ~99% Complete – Anticipated finish Q2 2025

Operations Activities for System Maintaining Storage Capacity

- Canal Management Program
- Lake Management Program
- Off-Road Ditch Cleaning Program
- Roadside Ditch Cleaning Program

ARPA Funded Lake Dredging Projects

- The Stormwater Operations Group is working on completing \$14.3 million of lake dredging projects funded by the American Rescue Plan Act (ARPA). Funds for these projects must be encumbered by December 2024 and fully spent by December 2026. The status of each lake dredging project is presented in the following table.
- The scope of this program currently includes dredging at 13 sites. The overall program estimate currently exceeds the allocated ARPA funding. Authorization to remove Package #4 from the ARPA funded projects list is pending as it is not needed to exceed the level of ARPA funding and will be completed utilizing CIP funds in the future.
- ***Through the reporting period, the City has spent \$3.56 million and encumbered an additional \$10.74 million for these projects.**
- There are currently no concerns with the timeline and all projects remain on schedule for completion by December 31, 2026.

The following table lists the Lake Dredging bid packages and the status and estimated project completion quarter for each location.

***Updated Since Last Report**

Lake Dredging Bid Package	Lake to be Dredged	Project Status	Estimated Project Completion
1	Indian Lakes #2	Under Construction	Q4 2025
	Lynnhaven Mall #1		Q4 2025
	Lynnhaven Mall #3		Q4 2025
	Sabre Street Ext #1		*Q4 2025
2	Chandler Creek Canal	Under Construction	Q4 2025
	Green Meadows Lake		Q4 2025
	Rosemont Road Lake Dredging		Q4 2025
3	Chapel Lake	Ready for Construction - to begin after Package #2 in October 2025	Q4 2026
	Salem Lakes #1		
4	Charlestowne Lake South #3	Removed from Program	N/A
	Turtle Lake		
5	Reedtown Lake	Pending Completion of Post Stabilization	Completed
	John B. Dey Lake		Completed
	Lovetts Pond		Completed
	Great Neck Lake #2		Completed

Asset Reliability

Neighborhood Stormwater Infrastructure Improvements Phase II Projects

- ***Country Club Circle Drainage Improvement: Construction started in October 2024.**
- Goodspeed Road Pump Station Upgrade: ~100% Design, anticipate construction beginning in Q4 2024. The construction Start Date delayed as the construction work orders are higher than estimated and are under review.

College Park and Level Green Drainage Improvement Project

- ***Drainage improvement project construction is complete. Public Works Operations will perform additional storm drain pipe cleaning.**

Operations Activities for Asset Reliability

- BMP/SWMF Maintenance Program
- Stormwater Pump Station Improvements
- Pipe Cleaning and Repair: Operations continues to transition from reactive work to proactive work.

***Updated Since Last Report**

ARPA Funded Neighborhood Drainage Rehabilitation Projects

- The Stormwater Operations Group is working on completing \$30.58 million of neighborhood stormwater infrastructure rehabilitation. This amount increased from \$25 million given the City Council's approval to transfer ARPA funds from lake dredging to drainage improvements.
- The scope of this project currently includes CCTV inspection, cleaning, and point repairs of the stormwater infrastructure system in 27 neighborhoods. The overall project estimate currently exceeds allocated ARPA funding and CIP funds will supplement to fully fund the projects. Authorization to remove packages #12, #13, #14, and #15 that have not yet been spent or encumbered funding was approved as they are not needed to exceed the level of ARPA funding.
- Projects funded by the American Rescue Plan Act (ARPA). Funds for these projects must be encumbered by December 2024 and fully spent by December 2026. The status of each neighborhood drainage project is presented in the following table.
- ***Through the current reporting period, the City has spent \$23.42 million and encumbered an additional \$7.16 million for these neighborhood drainage rehabilitation projects.** A total of 100% of ARPA funds have been spent/encumbered.
- There are currently no concerns with the timeline and all projects remain on schedule for completion by December 31, 2026.

The following table lists the neighborhood drainage rehabilitation bid packages and the status and estimated project completion quarter for each location.

Package #	Neighborhood Drainage Rehabilitation Project Name	Project Status	Estimated Project Completion
1	Redwing Rehab	Completed	Completed
	Upton Estates Rehab	Completed	Completed
2	Great Neck Meadows Rehab	Completed	Completed
	Seatack Rehab	Completed	Completed
3	Birchwood Gardens Rehab	Completed	Completed
	Pembroke Meadows Rehab	Completed	Completed
	Thalia Manor Rehab	Completed	Completed
4	Courthouse Estates Rehab	Completed	Completed
5	Charlestown Lake South Rehab	Under Construction	Q1 2025
	Hillcrest Farm Rehab	Under Construction	Q1 2025
6	Red Mill Farms Rehab	Under Construction	*Q1 2025
7	Foxfire Rehab	Under Construction	Q1 2025
8	Rock Creek Rehab	Ready for Construction	Q4 2025
	Salem Village Rehab	Ready for Construction	Q4 2025
9	Southgate Rehab	Under Construction	Q1 2025
	Three Oaks Rehab	Under Construction	Q1 2025
10	Lynnhaven Colony Rehab	Completed	Completed
	Northeast Basin - Bay Colony Rehab	Completed	Completed
	Northeast Basin - Birdneck Point	Under Construction	Completed
	Northeast Basin - Great Neck Estate	Completed	Completed
11	Groveland Park	Completed	Completed
12	Bellwood Estates, Lamplight Manor, Princess Anne Crossing	Removed from Program	N/A
13	Kempsville Colony, Point of View		
14	Broad Bay Estates, Laurel Cove	Primary Work Completed, Only Surface Work Remains	

***Updated Since Last Report**

Package #	Neighborhood Drainage Rehabilitation Project Name	Project Status	Estimated Project Completion
15	Cypress Point North, Hudgins Shores, L&J Gardens, Lakeville Estates	Removed from Program	N/A
16	Tier 2 repairs for Green Run, Magic Hollow, Windsor Woods	Under Construction	Q3 2025
17	Ferrell Parkway South	Under Construction	Q3 2025
All	Construction Inspection Services #1	Completed	
All	Construction Inspection Services #2	Ongoing	
All	Staff Augmentation Services	Ongoing	

Operational Readiness

Asset Management Program Development

- Arcadis and Kennedy-Jenks have developed the asset management framework related to the stormwater pump stations. A total of 384 individual assets have been entered into Cartegraph with maintenance schedules. Asset inventory efforts are continuing for non-pump station equipment.
- The following tasks have been completed under this program:
 - (a) Pump Station Operational Plans
 - (b) Review/update asset inventory
 - (c) Develop asset hierarchy
 - (d) Risk assessment
- The following asset management program tasks are currently underway:
 - (a) Benchmark O&M Practices.
 - (b) Confirm AM program goals and levels of service.
 - (c) Formalize an Asset Management Plan.
 - (d) Tracking and Reporting template development.

Quarterly Stormwater Engineering-Operations Coordination Meeting

- ***The next coordination meeting will be held in January or February 2025.**

System-wide Sensor Network Evaluation

- SCADA and sensor components are being coordinated by Stormwater Operations staff with vendors and City IT staff.
- System-wide storm impact maps were created and reviewed as post-storm action reports with the Stormwater Operations Team.

Stormwater Master Planning

- All stormwater master plans have been completed.
- The City is in the process of having the consultants update the master plans to meet ADA Accessibility requirements.

***Updated Since Last Report**