

Current FY 2020-2025 Stormwater CIP City Council Briefing

February 19, 2019

Stormwater

Public Works Engineering:

- Roadways
- ***STORMWATER MANAGEMENT***
- Coastal

OVERVIEW

- I. **Stormwater Program Funding: FY 18 – Present**
- II. **Current FY 2020-2025 Stormwater CIP
(Without Additional Funding)**
- III. **Flood Control**
 - *Program Overview*
 - *Fully Funded Projects*
 - *Unfunded/Partially Funded Projects*
- IV. **Water Quality Regulatory Compliance**
- V. **Operations and Maintenance**
- VI. **Accomplishments**



I. Stormwater Program Funding: FY 18 – Present

CITY OF VIRGINIA BEACH STORMWATER MANAGEMENT PROGRAM

PROGRAM REQUIREMENTS:

- Fund Major Flood Control Projects
- Support Operations & Maintenance Annual Activities
- Support Stormwater Quality Regulatory Annual Requirements
- Support Sea Level Rise & Stormwater Modeling Efforts

FY 18 STORMWATER CIP NEW FUNDING “BIG 7” FLOOD CONTROL PROJECTS FUNDING PLAN

Project	Estimated Total Project Cost	ATD	Funding in Years 1-6 FY 18-23	Funding in Years 7-10 FY 24-27	Funding in Years 11-15 FY 28-32	Remaining Balance to Complete
Windsor Woods	\$35M	\$3.8M	\$16.5M	\$8.3M	\$6.3M	0
Princess Anne Plaza	\$66M	0	\$20M	\$39.5M	\$6.5M	0
The Lakes	\$28M	0	\$2M	0	\$26M	0
Sherwood Lakes	\$20M	0	\$3M	0	0	\$17M
Eastern Shore Drive Drainage	\$83.2M	\$13.1M	\$35M	\$11.5M	\$6M	\$17.5M
Ashville Park	\$35M	0	\$9M	0	\$6.3M	\$19.7M
Central Resort	\$113M	\$0.3M	0	0	0	\$112.7M
Totals	\$380.2M	\$17.3	\$85.5M	\$59.3M	\$51.1M	\$166.9M

* Note: Operations & Maintenance and Water Quality is approximately \$104M
Flood Control is approximately \$196M

\$196 M

FY 18 STORMWATER CIP FUNDING PLAN BY SECTION

Section	Time Period	Funding Allocation	Remaining Balance
Flood Control	15 Years	\$196M	\$166.9M
Water Quality	15 Years	\$84M	Ongoing
O & M	15 Years	\$20M	Ongoing
Total		\$300M	

Note: ATD Not Included

“BIG 7” FLOOD CONTROL PROJECTS

CURRENT FY 2020-2025 FUNDING

Project	FY18	CURRENT FY 20			
	Estimated Total Project Cost	Estimated Total Project Cost	ATD	Current FY 20-25 Funding	Balance to Complete
Windsor Woods	\$35M	\$152.8M	\$12.7M	\$26.1M	\$114.0M
Princess Anne Plaza	\$66M	\$172.3M	\$5.1M	\$23.1M	\$144.1M
The Lakes	\$28M	\$28.7M	\$2.0M	\$2.4M	\$24.3M
Sherwood Lakes	\$20M	\$3M	\$3.0M	\$0M	\$0
Eastern Shore Drive Drainage	\$83.2M	\$72.5M	\$17.3M	\$37.1M	\$18.1M
Ashville Park	\$35M	\$12.0M	\$9.0M	\$3.0M	\$0
Central Resort	\$113M	\$113.0M	\$0.8M	\$5.2M	\$107.0M
Total	\$380.2M	\$554.3M	\$49.9M	\$96.9M	\$407.5M

CURRENT FY 2020-2025 STORMWATER PROGRAM FUNDING NEEDS

	Flood Control	Water Quality	Operations & Maintenance
“Big 7” Total Project Cost	\$554.3M	X	X
Remaining FC Projects Total Project Cost	\$204.5M	X	X
WQ Annual Need	X	\$10.1M/Yr	X
O&M Annual Need	X	X	\$34.8M/Yr
TOTAL NEED	\$758.8M	\$10.1M/Yr	\$34.8M/Yr
Current Funding	\$244.9M	\$8.6M/Yr	\$16.2M/Yr
TOTAL ADD’L. NEED	\$513.9M	\$1.5M/Yr	\$18.6M/Yr

FY18 STORMWATER PROGRAM – FTE NEED

2.5 CENTS PER YEAR OVER 5 YEARS

	FY18	FY19	FY20	FY21	FY22	FY23	Total
Surface Water Compliance (Water Quality) (Mandated)	4 Engineer III, Engineer I, Media Coordinator, Admin Tech	0	4 Engineer III	4 Engineer III			12
Stormwater Engineer Group	3 Engineer III	0	2 Engineer III	2 Engineer III			7
Flood Projects	2 Engineer III	0	3 Construction Inspector III, Engineer IV, Engineer III	0			5
Ops & Maintenance	4 Engineer III Construction Inspector III	0	1 Engineer III	5 Maintenance Supervisor MEO III, MEO II	2 MEO I		12
Total Positions	13	0	10	11	2		36

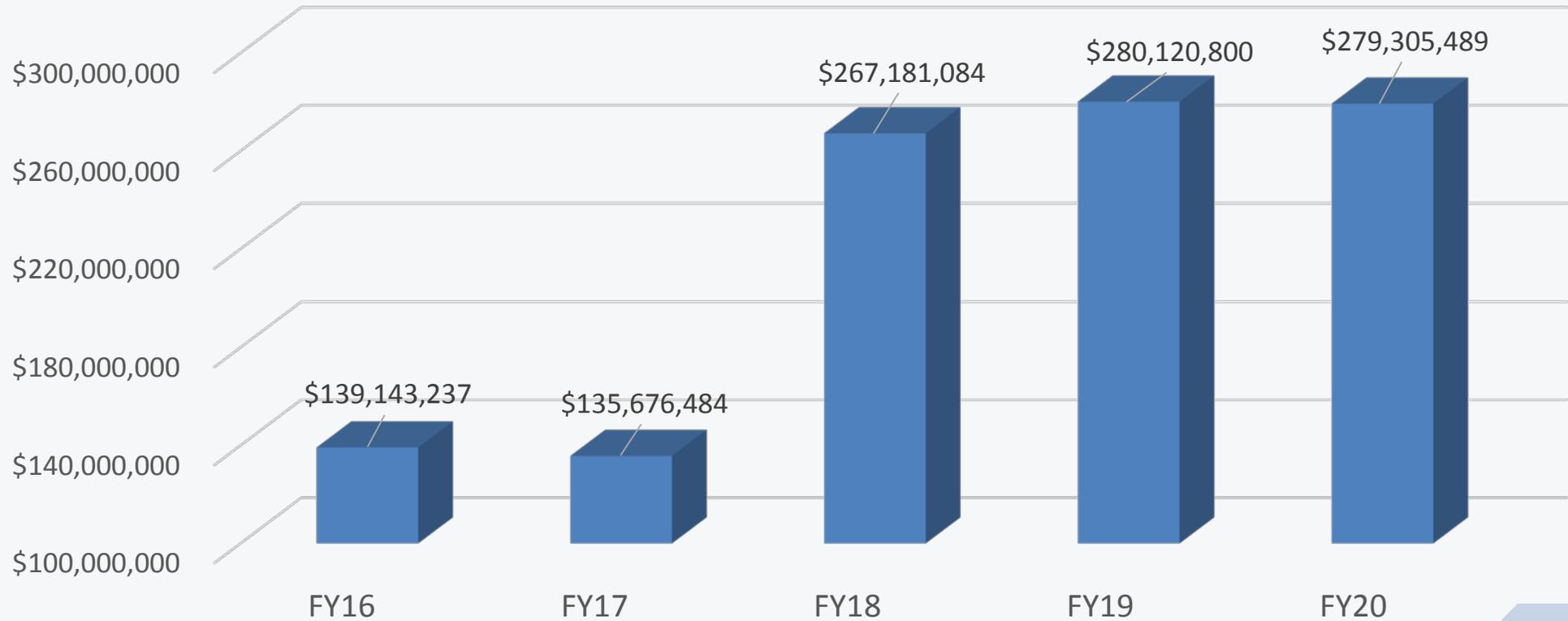
CURRENT FY 2020-2025 CIP (WITH NO ADDITIONAL FUNDING)

- 1 cent Real Estate Tax goes to CIP
- 2.5 cent ERU per year for 4 years

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total 6-Year
Flood Control	\$20,705,370	\$23,099,006	\$20,191,638	\$21,183,563	\$22,474,714	\$22,474,714	\$130,129,005
O&M	\$15,917,652	\$15,917,652	\$16,417,652	\$16,417,652	\$16,417,652	\$16,417,652	\$97,505,912
Water Quality	\$8,611,762	\$8,611,762	\$8,611,762	\$8,611,762	\$8,611,762	\$8,611,762	\$51,670,572
TOTALS	\$45,234,784	\$47,628,420	\$45,221,052	\$46,212,977	\$47,504,128	\$47,504,128	\$279,305,489

HISTORICAL CIP 6-YR STORMWATER FUNDING

Historical CIP Growth

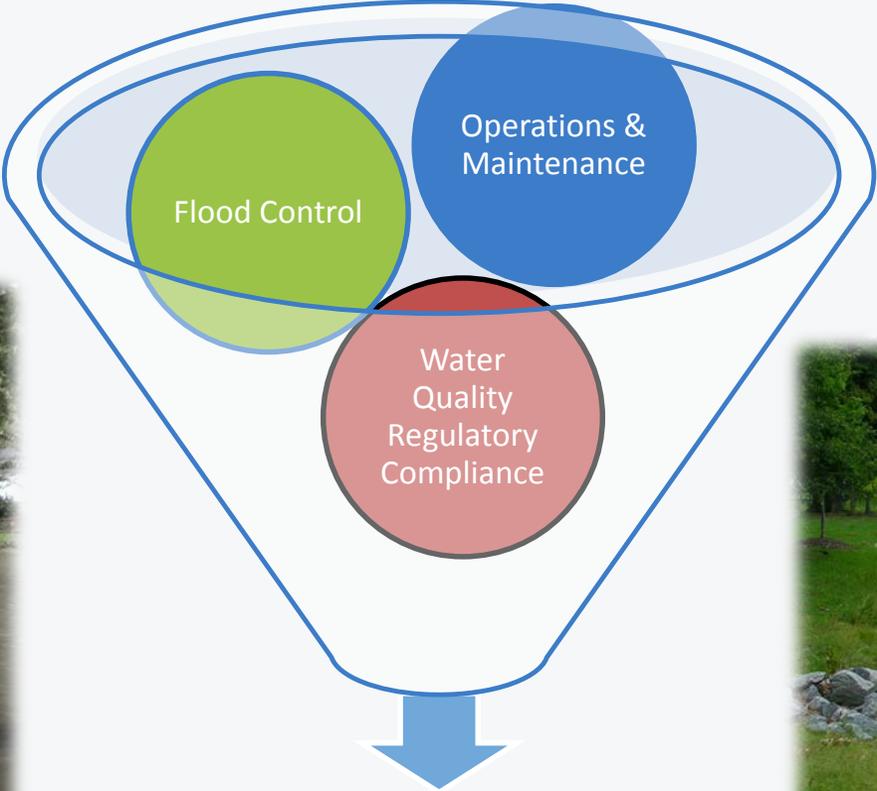


II. Current FY 2020-2025 Stormwater CIP

- Summary

STORMWATER PROGRAM

SUMMARY

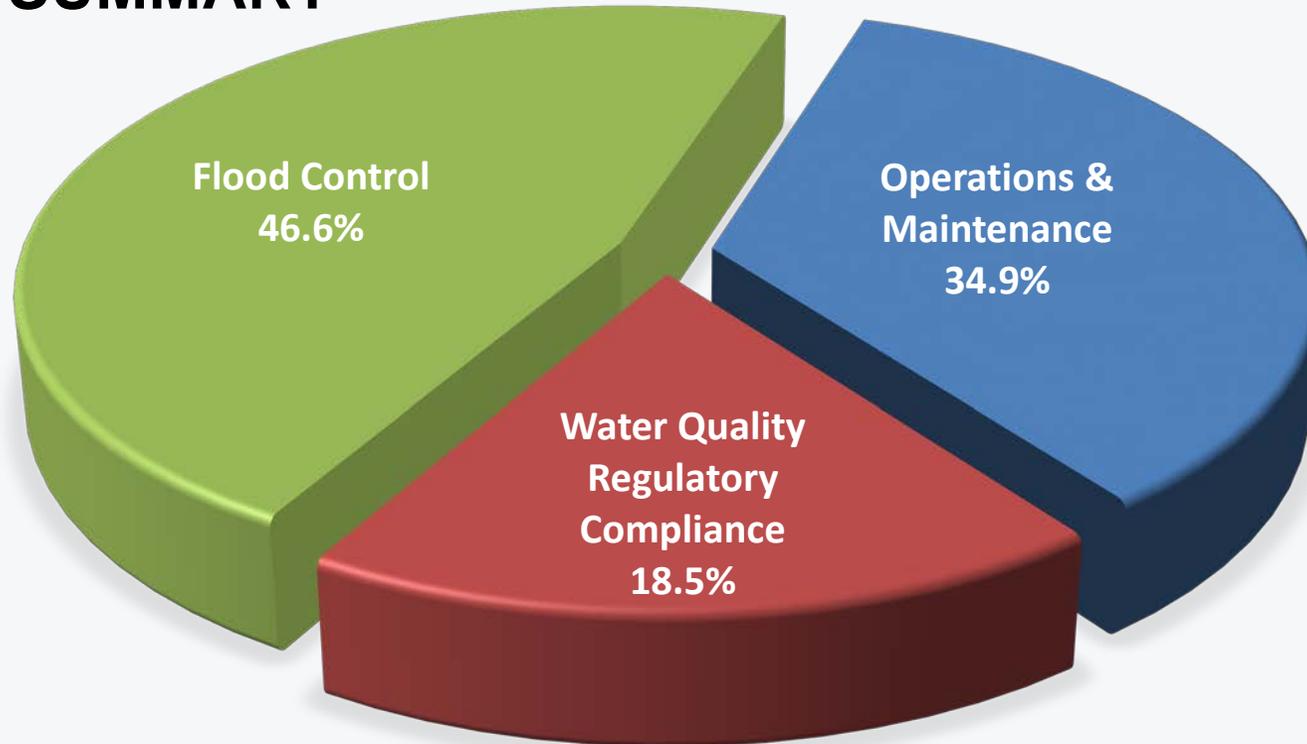


Stormwater Management



CURRENT FY 2020-2025 STORMWATER CIP

SUMMARY



-  Flood Control – \$130.1M
-  Operations & Maintenance – \$97.5M
-  Water Quality Regulatory Compliance – \$51.7M

Total 6-Year Funding - \$279.3M

III. Flood Control

- Program Overview
- Fully Funded Projects
- Unfunded/Partially Funded Projects

PROGRAM OVERVIEW

OVERALL FLOOD CONTROL PROGRAM

Total Project Cost: \$759M

* Projects shown in red are not fully funded in the 6-year CIP

1. Aragona Drainage Improvements
2. Ashville Park Drainage Improvements - Phase I
3. Ashville Park Phase II *
4. Atlantic Ocean Watershed Stormwater Projects *
5. Central Resort District Drainage Improvements *
6. Central Resort District – 24th Street Culvert
7. Central Resort District – Redirect SW to 16th St. Pump Station *
8. College Park and Level Green Drainage Improvements
9. Eastern Shore Drive Drainage Phase I
10. Eastern Shore Drive – Cape Henry Canal Phase II
11. Eastern Shore Drive – Elevate Lynnhaven Drive
12. Eastern Shore Drive – Lynnhaven Colony Park Pump Station
13. Eastern Shore Drive – Lynnhaven Drive Pump Station *
14. Eastern Shore Drive – Poinciana Pump Station *
15. Eastern Shore Drive – Vista Circle Pump Station *
16. Elizabeth River Watershed Stormwater Projects *
17. Lake Bradford/Chubb Lake *
18. Little Creek Watershed (1&31) Stormwater Projects *
19. Lynnhaven River Watershed (3-8 & 30) Stormwater Projects *
20. Neighborhood SW Infrastructure Improvements II *
21. North Lake Holly Watershed
22. Princess Anne Plaza Drainage Area
23. Princess Anne Plaza Drainage Improvements – Phase 5A *
24. Princess Anne Plaza Drainage Improvements – Phase 5B *
25. Princess Anne Plaza Drainage Improvements – Phase 5C *
26. Princess Anne Plaza Drainage Improvements – Phase II *
27. Princess Anne Plaza Golf Course Conversion *
28. Princess Anne Plaza Little League Ballfields Relocation
29. Princess Anne Plaza North London Bridge Creek Pump Station *

PROGRAM OVERVIEW (cont.)

OVERALL FLOOD CONTROL PROGRAM

Total Project Cost: \$759M

* Projects shown in red are not fully funded in the 6-year CIP

30. Princess Anne Plaza Northgate Ballfields Conversion
31. Sea Level Rise/Recurrent Flooding Analysis
32. Sherwood Lakes Drainage Improvements
33. South Lake Holly Watershed
34. Southern Canal/Lead Ditch and Culvert Improvements
35. Southern Rivers Watershed Stormwater Projects *
36. SWM Master Planning, Analysis, and Inventory
37. The Lakes Drainage Improvements
38. The Lakes – South London Bridge Creek Channels and Gate *
39. The Lakes Drainage Imps. – Ashaway Rd & Stoneshore Rd *
40. The Lakes Drainage Improvements – Holland Road Gate *
41. The Lakes Drainage Imps. – Lynnhaven Pkwy Flood Barrier *
42. Windsor Woods Drainage
43. Windsor Woods – Thalia Creek/Lake Trashmore Improvements
44. Windsor Woods Drainage Improvements – Flood Barriers Ph I *
45. Windsor Woods Drainage Improvements – Flood Barriers Ph II *
46. Windsor Woods Drainage Improvements – Phase I *
47. Windsor Woods Drainage Improvements – Phase II *
48. Windsor Woods Drainage Improvements – Phase IV *
49. Windsor Woods Drainage Improvements – Phase IX *
50. Windsor Woods Drainage Improvements – Phase V *
51. Windsor Woods Drainage Improvements – Phase VI *
52. Windsor Woods Drainage Improvements – Phase VII *
53. Windsor Woods Drainage Improvements – Phase VIII *
54. Windsor Woods Drainage Improvements – Phase X *
55. Windsor Woods Drainage Improvements – Phase XI *
56. Windsor Woods Drainage Improvements – Phase XII *
57. Windsor Woods Pump Station *
58. Windsor Woods Tide Gate *

FULLY FUNDED FLOOD CONTROL PROJECTS

CURRENT FY 2020-2025 CIP

	CIP	PROJECT	TOTAL PROJECT COST
1	7400	Aragona Drainage Improvements	\$4,400,000
2	7047	Ashville Park Drainage Improvements - Phase I	\$12,000,000
3	7064	Central Resort District - 24th Street Culvert *	\$5,200,000
4	7402	College Park and Level Green Drainage Improvements	\$2,289,000
5	7065	Eastern Shore Drive - Cape Henry Canal Phase II	\$4,300,000
6	7066	Eastern Shore Drive - Elevate Lynnhaven Drive	\$3,600,000
7	7068	Eastern Shore Drive - Lynnhaven Colony Park Pump Station *	\$10,900,000
8	7151	Eastern Shore Drive Drainage Phase I	\$17,500,000
9	7005	North Lake Holly Watershed	\$23,471,135
10	7050	Princess Anne Plaza Drainage Area	\$5,073,597
11	7074	Princess Anne Plaza Little League Ballfields Relocation *	\$3,834,000
12	7075	Princess Anne Plaza Northgate Ballfields Conversion *	\$6,074,000
13	7030	Sea Level Rise/Recurrent Flooding Analysis	\$5,044,447
14	7048	Sherwood Lakes Drainage Improvements	\$3,000,000
15	7016	South Lake Holly Watershed	\$16,609,587
16	7024	Southern Canal/Lead Ditch and Culvert Improvements	\$12,080,000
17	7027	SWM Master Planning, Analysis, and Inventory	\$14,788,056
18	7051	The Lakes Drainage Improvements	\$2,000,000
19	7028	Windsor Woods Drainage	\$12,677,237
20	7076	Windsor Woods - Thalia Creek/Lake Trashmore Improvements *	\$5,106,000
		TOTAL	\$169,947,059

* Project Detail Sheets Follow



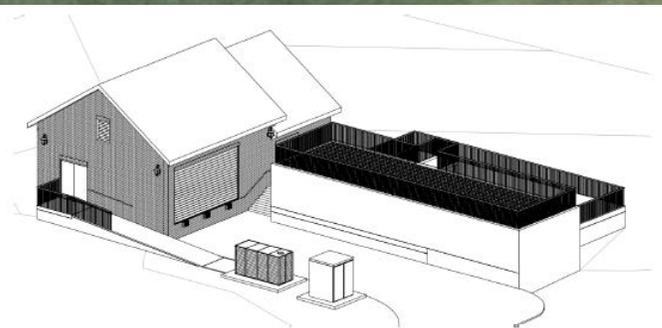
Central Resort District – 24th Street Culvert, CIP 7-064

- A Breakout project of CIP 7-041, Central Resort District
- Replace existing 42” pipe located under 24th Street with box culvert or bridge
- Investigate 2 upstream culvert crossings
- Survey and design are underway

Total Project Cost: \$5.2M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Current Program	\$1,200,000	\$4,000,000					\$5,200,000

Eastern Shore Drive – Lynnhaven Colony Park Pump Station, CIP 7-068

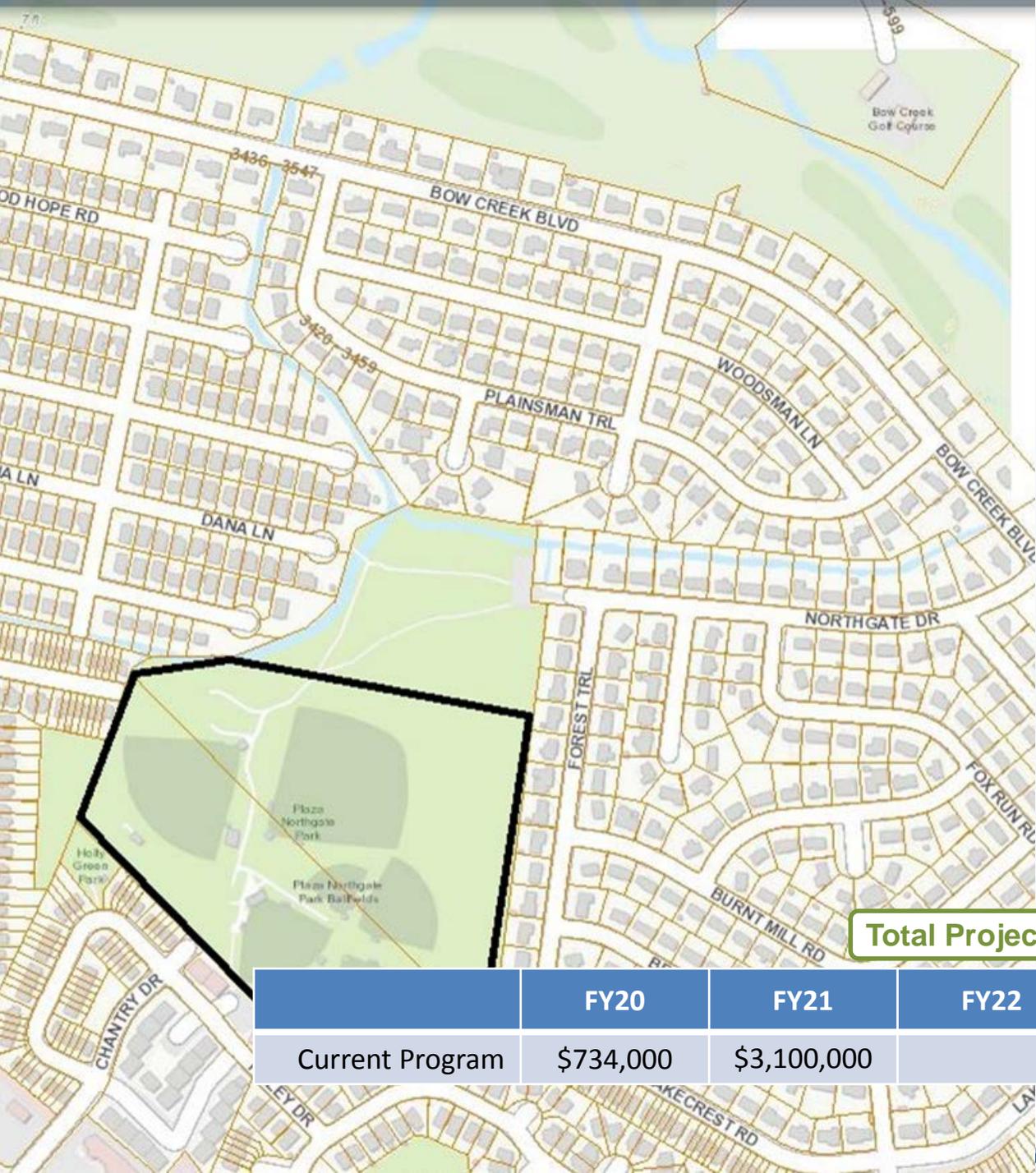


- A Breakout project of CIP 7-151, Eastern Shore Drive Drainage
- Stormwater pump station on the south side of Lynnhaven Colony Park adjacent to existing City sanitary sewer pump station #200
- The project includes the construction of an outfall energy dissipation structure in Lynnhaven Municipal Marina

Total Project Cost: \$10.9M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Current Program	\$500,000		\$5,300,000	\$5,100,000			\$10,900,000

Princess Anne Plaza Little League Ballfields Relocation, CIP 7-074



Total Project Cost: \$3.8M

- A breakout phase of the Princess Anne Plaza Drainage project (CIP 7-050)
- This ballfield relocation of Princess Anne Plaza Little League will be the first step taken before converting the existing ballfield into a stormwater storage area.
- Design: July 2019 to June 2022
- Permitting: July 2020 to June 2022
- Acquisition: None
- Construction: July 2020 to June 2022

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Current Program	\$734,000	\$3,100,000					\$3,834,000

Princess Anne Plaza Northgate Ballfields Conversion, CIP 7-075



- A breakout phase of the Princess Anne Plaza Drainage project (CIP 7-050)
- Convert Northgate Plaza Ballfields into a stormwater storage area
- Park amenities will be included
- Design: July 2019 to June 2025
- Permitting: July 2023 to June 2024
- Acquisition: None
- Construction: July 2022 to June 2025

Total Project Cost: \$6.1M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Current Program	\$934,000			\$5,140,000			\$6,074,000



Windsor Woods – Thalia Creek/ Lake Trashmore Improvements, CIP 7-076

- A breakout phase of the Windsor Woods Drainage project (CIP 7-028)
- Allows Lake Trashmore to be pumped down to Elevation - 1.0 Feet when 750 cfs pumps are operating
- Design: July 2019 to June 2024
- Permitting: July 2023 to June 2024
- Acquisition: None
- Construction: July 2024 to June 2026

Total Project Cost: \$5.1M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Current Program					\$1,106,000	\$4,000,000	\$5,106,000

UNFUNDED/PARTIALLY FUNDED FLOOD CONTROL PROJECTS IN CURRENT FY 2020-2025 CIP

Note: New projects shown in **bold**

	CIP	PROJECT	TOTAL PROJECT COST
1	7080	Ashville Park Phase II *	\$18,853,000
2	7081	Atlantic Ocean Watershed Stormwater Projects	\$3,255,000
3	7084	Central Resort District - Redirect Stormwater to 16th St. Pump Station	\$15,000,000
4	7041	Central Resort District Drainage Improvements	\$92,800,000
5	7069	Eastern Shore Drive - Lynnhaven Drive Pump Station *	\$13,700,000
6	7085	Eastern Shore Drive - Poinciana Pump Station	\$8,200,000
7	7070	Eastern Shore Drive - Vista Circle Pump Station	\$14,300,000
8	7086	Elizabeth River Watershed Stormwater Projects	\$22,800,000
9	7053	Lake Bradford/Chubb Lake	\$32,000,000
10	7071	Little Creek Watershed (1&31) Stormwater Projects *	\$6,600,000
11	7072	Lynnhaven River Watershed (3-8 & 30) Stormwater Projects *	\$22,800,000
12	7413	Neighborhood SW Infrastructure Improvements II	\$8,139,554
13	SWU29FC	Princess Anne Plaza Drainage Improvements - Phase 5A	\$1,340,000
14	SWU30FC	Princess Anne Plaza Drainage Improvements - Phase 5B	\$2,898,000
15	SWU31FC	Princess Anne Plaza Drainage Improvements - Phase 5C	\$11,402,000
16	7090	Princess Anne Plaza Drainage Improvements - Phase II	\$3,730,000
17	7073	Princess Anne Plaza Golf Course Conversion *	\$83,633,966
18	7089	Princess Anne Plaza North London Bridge Creek Pump Station *	\$54,364,200
19	7092	Southern Rivers Watershed Stormwater Projects *	\$11,400,000
20	7094	The Lakes - South London Bridge Creek Channels and Gate *	\$15,070,100

* Project Detail Sheets Follow

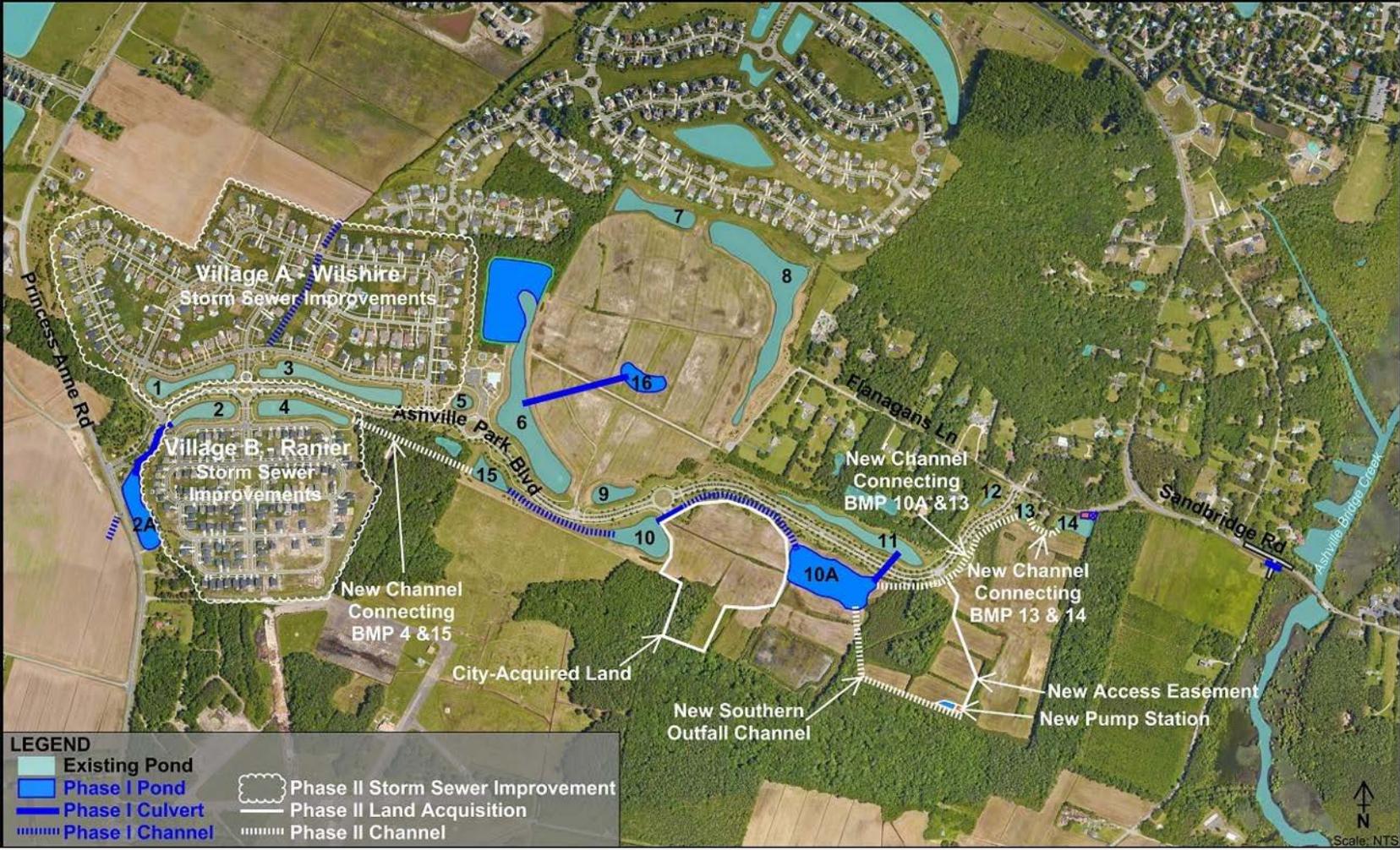
UNFUNDED/PARTIALLY FUNDED FLOOD CONTROL PROJECTS IN CURRENT FY 2020-2025 CIP (cont.)

	CIP	PROJECT	TOTAL PROJECT COST
21	SWU32FC	The Lakes Drainage Improvements - Ashaway Rd and Stoneshore Rd	\$1,328,200
22	SWU33FC	The Lakes Drainage Improvements - Holland Road Gate	\$8,646,000
23	SWU34FC	The Lakes Drainage Improvements - Lynnhaven Pkwy Flood Barrier	\$1,630,694
24	SWU35FC	Windsor Woods Drainage Improvements - Flood Barriers Phase I	\$11,400,000
25	SWU36FC	Windsor Woods Drainage Improvements - Flood Barriers Phase II	\$2,257,500
26	7095	Windsor Woods Drainage Improvements - Phase I	\$5,612,000
27	7096	Windsor Woods Drainage Improvements - Phase II	\$3,930,000
28	SWU37FC	Windsor Woods Drainage Improvements - Phase IV	\$5,906,636
29	SWU41FC	Windsor Woods Drainage Improvements - Phase IX	\$6,479,720
30	SWU38FC	Windsor Woods Drainage Improvements - Phase V	\$5,256,000
31	SWU39FC	Windsor Woods Drainage Improvements - Phase VI	\$10,132,000
32	SWU40FC	Windsor Woods Drainage Improvements - Phase VII	\$10,441,000
33	7097	Windsor Woods Drainage Improvements - Phase VIII	\$4,890,500
34	SWU42FC	Windsor Woods Drainage Improvements - Phase X	\$15,074,644
35	7098	Windsor Woods Drainage Improvements - Phase XI	\$4,236,000
36	7099	Windsor Woods Drainage Improvements - Phase XII	\$9,560,000
37	7077	Windsor Woods Pump Station *	\$33,116,000
38	7078	Windsor Woods Tide Gate *	\$6,700,000
TOTAL			\$588,882,714

* Project Detail Sheets Follow

Ashville Park Phase II, CIP 7-080

- Village A – *Wilshire* Storm Drain Improvements and Connection to Expanded BMP #6
- Village B – *Ranier* Storm Drain Improvements and Connection to New Channel
- 4 Large Open Channels for Connectivity
- Potential Southern Outfall Channel & Pump Station



Total Project Cost: \$18.9M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Funding Requested	\$1,770,000		\$7,495,000	\$7,375,000	\$2,213,000		\$18,853,000

Eastern Shore Drive – Lynnhaven Drive Pump Station, CIP 7-069

- A Breakout project of CIP 7-151, Eastern Shore Drive Drainage
- Relieves widespread flooding
- Pump Station will provide protection by pumping stormwater out of upstream Cape Henry Canal before, during, and after moderate to severe rain storm events

P.S. 1D

Total Project Cost: \$13.7M

BTC: \$7.4M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Current Program	\$2,539,357	\$2,100,000	\$1,700,000				\$6,339,357
Funding Requested	\$960,643	\$6,400,000					\$7,360,643
Total	\$3,500,000	\$8,500,000	\$1,700,000				\$13,700,000



Little Creek Watershed Stormwater Projects, CIP 7-071

- CIP 7-027, Stormwater Master Planning, Analysis and Inventory identifies deficiencies within the existing stormwater network that require improvements
- Project will implement stormwater management improvement projects identified in the Little Creek Watershed

Total Project Cost: \$6.6M

BTC: \$5.5M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Current Program						\$1,100,000	\$1,100,000
Funding Requested	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000		\$5,500,000
Total	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000	\$6,600,000



Lynnhaven River Watershed Stormwater Projects, CIP 7-072

- CIP 7-027, Stormwater Master Planning, Analysis and Inventory identifies deficiencies within the existing stormwater network that require improvements
- Project will implement stormwater management improvement projects in the Lynnhaven River Watershed

Total Project Cost: \$22.8M

BTC: \$20.52M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Current Program						\$2,280,000	\$2,280,000
Funding Requested	\$3,800,000	\$3,800,000	\$3,800,000	\$3,800,000	\$3,800,000	\$1,520,000	\$20,520,000
Total	\$3,800,000	\$3,800,000	\$3,800,000	\$3,800,000	\$3,800,000	\$3,800,000	\$22,800,000

Princess Anne Plaza Golf Course Conversion, CIP 7-073



- A breakout phase of the Princess Anne Plaza Drainage project (CIP 7-050)
- Converts golf course into a park with a lake and amenities
- Creates stormwater storage
- 14-Year project
- Design: July 2019 to June 2033
- Permitting: July 2019 to June 2033
- Construction: July 2019 to June 2033

Total Project Cost: \$83.6M **BTC: \$70.4M**

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Current Program		\$1,245,000	\$5,407,257	\$757,570	\$5,850,000		\$13,259,827
Funding Requested		\$4,605,000	\$442,743	\$5,092,430		\$3,033,966	\$13,174,139
Total		\$5,850,000	\$5,850,000	\$5,850,000	\$5,850,000	\$3,033,966	\$26,433,966

**Beyond 6-yr
BTC: \$57.2M**



Princess Anne Plaza North London Bridge Creek Pump Station, CIP 7-089

- A breakout phase of the Princess Anne Plaza Drainage project (CIP 7-050)
- Pump station, tide gate, tide barriers
- Northeast of London Bridge Creek crossing South Lynnhaven Road
- Design: July 2019 to June 2024
- Acquisition: July 2020 to June 2022
- Permitting: July 2020 to June 2022
- Construction: July 2022 to June 2027

Total Project Cost: \$54.4M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Funding Requested	\$12,672,000	\$1,490,000	\$2,200,000	\$5,660,000		\$32,342,200	\$54,364,200

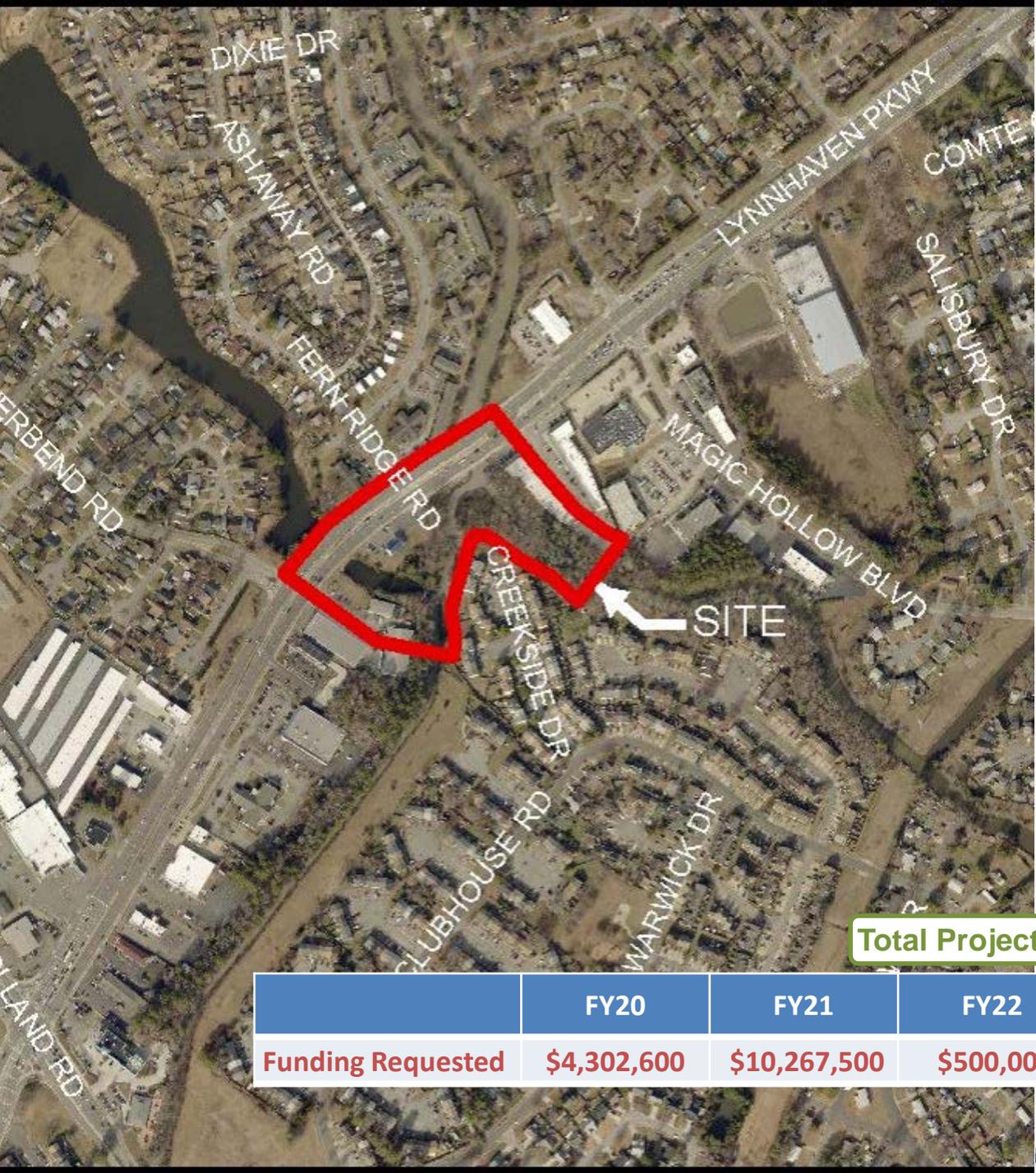


Southern Rivers Watershed Stormwater Projects, CIP 7-092

- CIP 7-027, Stormwater Master Planning, Analysis and Inventory identifies deficiencies within the existing stormwater network that require improvements
- Project will implement stormwater management improvement projects in the Southern Rivers Watershed

Total Project Cost: \$11.4M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Funding Requested		\$1,900,000	\$1,900,000	\$1,900,000	\$1,900,000	\$1,900,000	\$11,400,000



The Lakes Drainage Improvements South London Bridge Creek Channels & Gate, CIP 7-094

- A breakout phase of The Lakes Drainage Improvement project (CIP 7-051)
- Channel improvements and tide gate
- Located along the Lakes and Green run canals and London Bridge Creek immediately south of Lynnhaven Pkwy
- Design: July 2019 to June 2023
- Acquisition: July 2019 to June 2022
- Permitting: July 2019 to June 2020
- Construction: July 2020 to June 2023

Total Project Cost: \$15.1M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Funding Requested	\$4,302,600	\$10,267,500	\$500,000				\$15,070,100



Windsor Woods Pump Station, CIP 7-077

- A breakout phase of the Windsor Woods Drainage project (CIP 7-028)
- Five 150 cfs pumps, 750 cfs total discharge
- Works with Thalia Creek Tide Gate
- Lowers Lake Windsor to Elevation -1.0 feet
- Design: July 2022 to June 2024
- Acquisition: None
- Construction: July 2024 to June 2027

Total Project Cost: \$33.12M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Current Program	\$500,000	\$4,300,000			\$1,197,286		\$5,997,286
Funding Requested				\$14,000,000	\$13,118,714		\$27,118,714
Total		\$4,300,000		\$14,000,000	\$14,316,000		\$33,116,000



Windsor Woods Tide Gate, CIP 7-078

- A breakout phase of the Windsor Woods Drainage project (CIP 7-028)
- Design funded by CIP 7-028
- Design: January 2019 to July 2021
- Permitting: January 2019 to June 2020
- Acquisition: None
- Construction: July 2020 to January 2022

Total Project Cost: \$6.7M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Current Program	\$1,900,000						\$1,900,000
Funding Requested	\$2,600,000	\$2,200,000					\$4,800,000
Total	\$4,500,000	\$2,200,000					\$6,700,000

IV. Water Quality Regulatory Compliance

- Program Overview
- New Projects
- Requested Above Target Projects

OVERVIEW OF WATER QUALITY REGULATORY COMPLIANCE PROGRAM IN CURRENT FY 2020-2025 CIP

1. Storm Water Quality Enhancements II
2. Lynnhaven River Watershed II
3. Lynnhaven River Basin Ecosystem Restoration
4. Elizabeth River Watershed
5. Southern Rivers Watershed
6. Surface Water Regulatory Compliance Program
7. Water Quality Cost Participation Projects II

Total Water Quality 6 Year Program: \$51.7M



Bayville Lake Water Quality Improvement

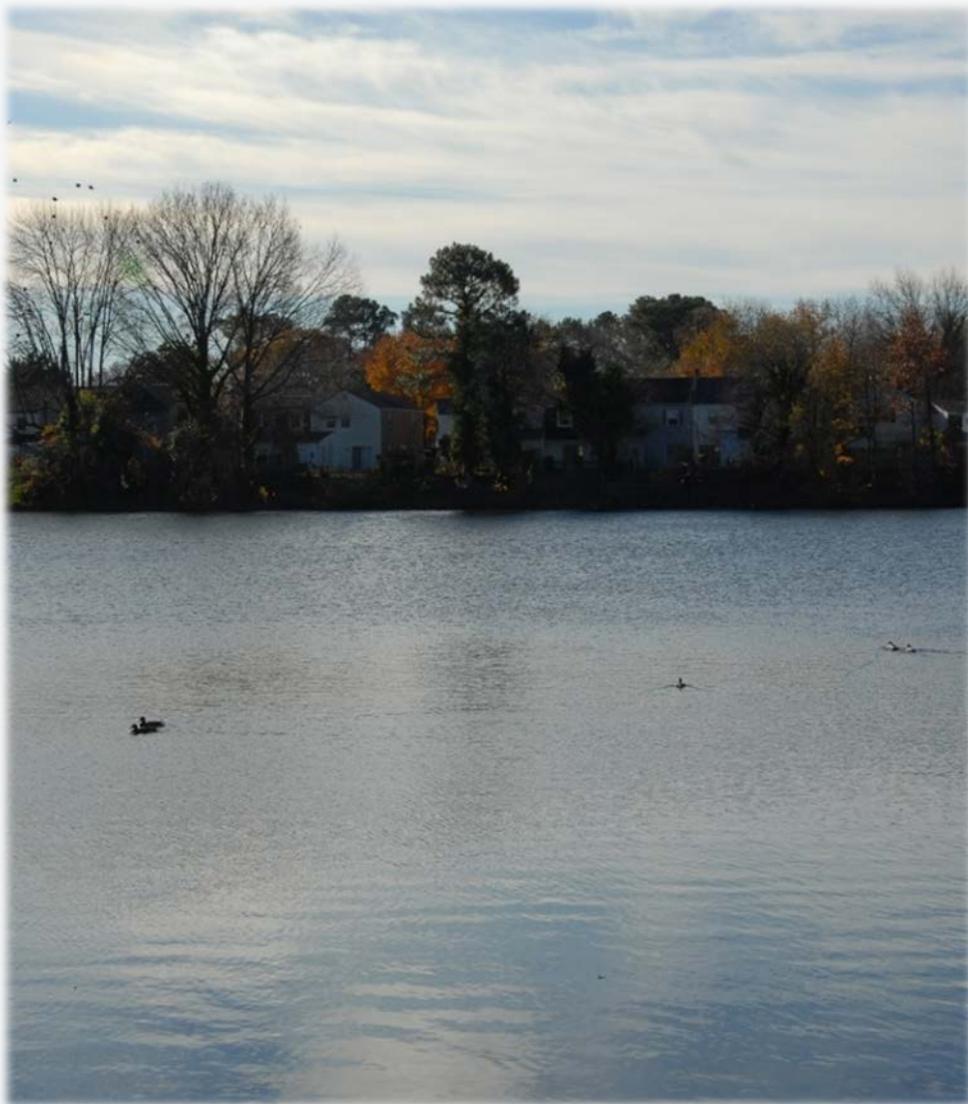
NEW CIP 7-060

- Constructing pretreatment forebays, wetland areas, and an aeration system
- Local Bacteria and Chesapeake Bay TMDL Pollutant Reductions
- Resident Educational Opportunity
- Start Design – January 2020
- Construction – August 2022 to October 2023



Total Project Cost: \$4.3M

FY20	FY21	FY22	FY23	FY24	FY25
\$1,000,000	\$0	\$1,650,000	\$1,650,000	\$0	\$0



Lake Edward Water Quality Improvement

New CIP 7-061

- Constructing pretreatment forebays, wetland areas, and an aeration system
- Local Bacteria and Chesapeake Bay TMDL Pollutant Reductions
- Start Design – January 2025
- Construction – March 2027 to May 2028

Total Project Cost: \$4.4M

BTC: \$3.4M

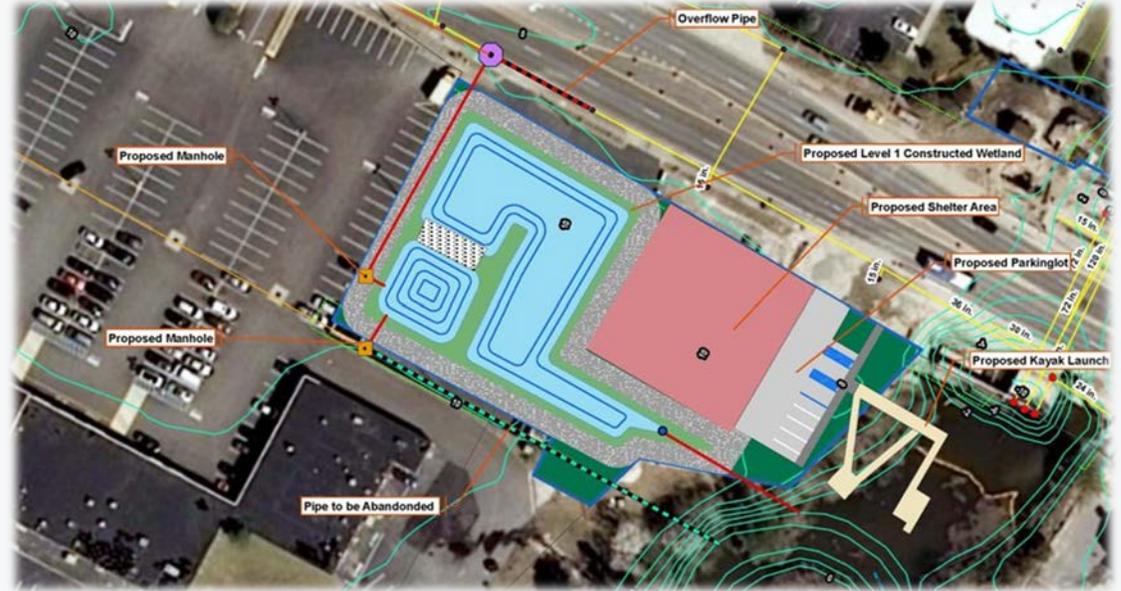
FY20	FY21	FY22	FY23	FY24	FY25
\$0	\$0	\$0	\$0	\$0	\$1,000,000

Princess Anne Water Quality Improvement

New CIP 7-406.006



Image credit Google 2018

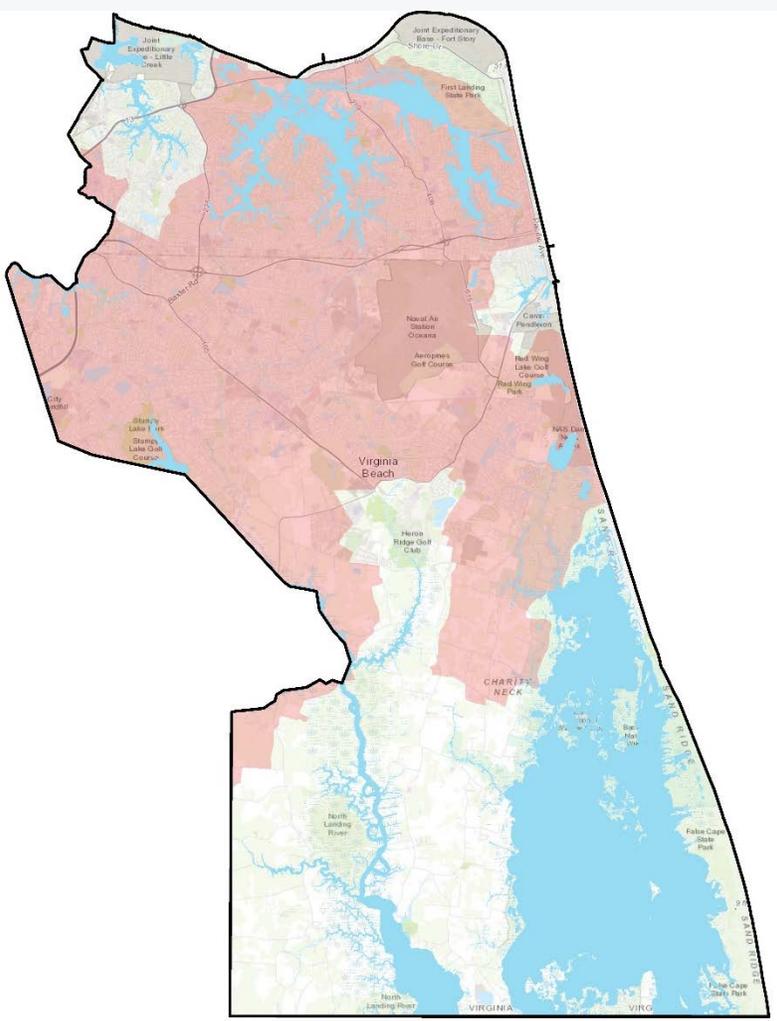


- Local Bacteria and Chesapeake Bay TMDL Pollutant Reductions
- Resident Educational Opportunity

- Start Design – December 2019
- Construction – August 2021 to September 2022

Total Project Cost: \$450K

FY20	FY21	FY22	FY23	FY24	FY25
\$150,000	\$300,000	\$0	\$0	\$0	\$0



Requested Above Target Funding for Stormwater Quality Enhancements II

CIP 7-414

■ Rudee Inlet Watershed

- Bacteria TMDL
- Phosphorus Impairment

■ Elizabeth River Watershed

- Polychlorinated biphenyl (PCB) TMDL

■ Local Impairments

- Dissolved Oxygen, pH, Chlorophyll-a, Phosphorus, Mercury, PCB in fish tissue, Benthic-Macroinvertebrate Bioassessments, Estuarine Bioassessments, Bacteria



Total Project Cost: \$12.4M

BTC: \$4.0M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Current Program	\$750,000	\$1,150,000	\$1,550,000	\$1,550,000	\$1,900,000	\$1,500,000	\$8,400,000
Funding Requested			\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$4,000,000
Total	\$750,000	\$1,150,000	\$2,550,000	\$2,550,000	\$2,900,000	\$2,500,000	\$12,400,000

V. Operations & Maintenance

- Program Overview
- Requested Above Target Programs/Projects

OVERVIEW OF OPERATIONS AND MAINTENANCE IN CURRENT FY 2020-2025 CIP

1. Canal Management Phase I
2. Lake Management II
3. Oceanfront Stormwater Facilities Maintenance
4. Primary System Infrastructure Improvements II
5. Stormwater Pump Station Modifications
6. SW Infrastructure Rehabilitation & Improvements II
7. Residential Drainage Cost Participation Program II



CANAL MANAGEMENT PHASE I CIP 7-055

2019 Planned Construction:

- Canal #2 Repairs
- Lynnhaven Canal

Yearly Program Cost:
\$500K/year

BTC:
\$1.5M/year

	Appropriated to Date	FY20	FY21	FY22	FY23	FY24	FY25	6 YEAR Total
Current Program	\$500,000			\$500,000	\$500,000	\$500,000	\$500,000	\$2,000,000
Funding Requested		\$2,000,000	\$2,000,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$10,000,000
Total		\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$12,000,000



LAKE MANAGEMENT II

CIP 7-415

2018 Completed Lakes:

- Green Run 2,3,4,&5
- Center Pointe 1&2
- Brookside
- Greenview

2019 Planned Construction:

- Windsor Oaks West 3
- Stratford Chase 1,2,&3
- Lynnhaven Woods
- Level Green 1&2

Yearly Program Cost:
\$4.95M/year

BTC:
\$2.2M/year

	Appropriated to Date	FY20	FY21	FY22	FY23	FY24	FY25	6 Year Total
Current Program	\$32,207,780	\$4,947,652	\$4,947,652	\$4,947,652	\$4,947,652	\$4,947,652	\$4,947,652	\$29,685,912
Funding Requested		\$2,200,000	\$2,200,000	\$2,200,000	\$2,200,000	\$2,200,000	\$2,200,000	\$13,200,000
Total		\$7,147,652	\$7,147,652	\$7,147,652	\$7,147,652	\$7,147,652	\$7,147,652	\$42,885,912



OCEANFRONT STORMWATER FACILITIES MAINTENANCE CIP 7-411

- Seawall Concrete Joint Sealants
- Pump Station Slab Repairs
- Full Depth Boardwalk Repairs
- Stair Nosing Replacements

**Yearly Program Cost:
\$1.65M/year**

**BTC:
\$350K/year**

	Appropriated to Date	FY20	FY21	FY22	FY23	FY24	FY25	6 Year Total
Current Program	\$6,730,740	\$1,650,000	\$1,650,000	\$1,650,000	\$1,650,000	\$1,650,000	\$1,650,000	\$9,900,000
Funding Requested		\$350,000	\$350,000	\$350,000	\$350,000	\$350,000	\$350,000	\$2,100,000
Total		\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$12,000,000

PRIMARY SYSTEM INFRASTRUCTURE IMPROVEMENTS CIP 7-023

– Program Cycles:

- 16 years - Original Cycle
- 8 years - Goal Cycle
- 12 years - Current Cycle

Yearly Program Cost:
\$2.27M/year

BTC:
\$2.2M/year

	Appropriated to Date	FY20	FY21	FY22	FY23	FY24	FY25	6 Year Total
Current Program	\$10,620,000	\$2,270,000	\$2,270,000	\$2,270,000	\$2,270,000	\$2,270,000	\$2,270,000	\$13,620,000
Funding Requested		\$2,200,000	\$2,200,000	\$2,200,000	\$2,200,000	\$2,200,000	\$2,200,000	\$13,200,000
Total		\$4,470,000	\$4,470,000	\$4,470,000	\$4,470,000	\$4,470,000	\$4,470,000	\$26,820,000

Project
3:14:33
14 ft



New Project

42nd Street Pump Station Outfalls

CIP 7-079

- Four 2,000 feet 48-inch RCP outfall pipes
- Preliminary CCTV inspection completed in May 2016
- Maintained under USACE Requirements
- South Middle Pipe indicated significant defect
- Detailed inspection of South Middle Pipe completed May 2018



BTC: \$4.0M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Funding Requested	\$4,000,000						\$4,000,000



New Program BMP Maintenance CIP 7-082

- Maintain 269 Publicly Owned BMP's
- MS-4 Permit Requirement
- Goal 20 Year Cycle
- Currently No Dedicated Resources

BTC: \$1.2M/year

	FY20	FY21	FY22	FY23	FY24	FY25	6 Year Total
Funding Requested	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$7,200,000



New Project

Cave-In Repair Program

CIP 7-083

- Current 8 month backlog of 800 cave repairs
- Required to maintain >1100 miles of pipe >43K manholes
- Goal 2 month
- Repairs contribute to increased system lifespan and flood control.

BTC: \$9.0M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Funding Requested	\$4,500,000	\$4,500,000					\$9,000,000



New Program Enhanced Neighborhood Rehabilitation Program, CIP 7-087

- Review maintenance records
- Locate & identify pipes; update GIS
- Clean & perform closed circuit television inspection (CCTV)
- Coordinate with SW modeling for flood control improvements
- Review inspection and develop repair plan
- Perform repairs

BTC: \$8.5M/year

	FY20	FY21	FY22	FY23	FY24	FY25	6 Year Total
Funding Requested	\$8,500,000	\$8,500,000	\$8,500,000	\$8,500,000	\$8,500,000	\$8,500,000	\$51,000,000



New Project

Pinewood Road Culvert Replacement, CIP 7-088

- Existing Culvert showing signs of failure
- Average Daily Traffic (ADT) of approximately 1200 vehicles
- Feasibility analysis and study completed September 2017
- Culvert requires replacement

BTC: \$1.0M

	FY20	FY21	FY22	FY23	FY24	FY25	Total
Funding Requested	\$1,000,000						\$1,000,000

REQUESTED ABOVE TARGET PROJECTS – IN THE CURRENT FY 2020-25 CIP

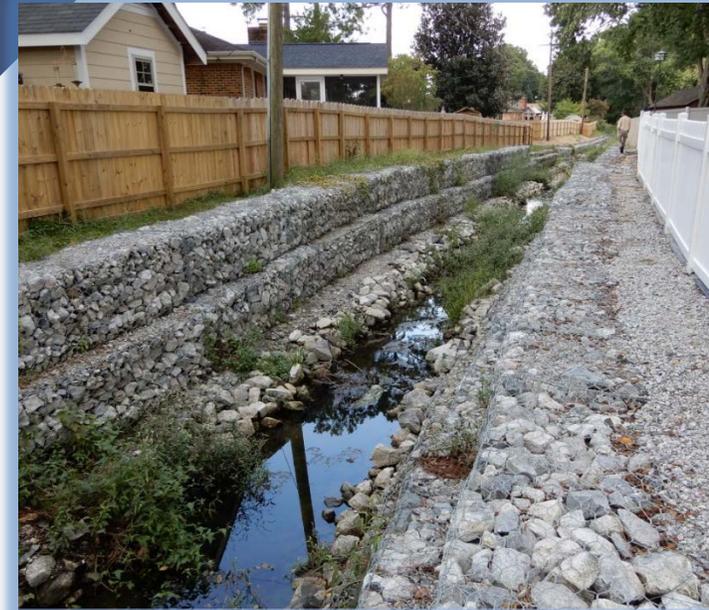
CIP	PROJECT	UNFUNDED SIX YEAR AMOUNT
EXISTING PROGRAMS		
7055	Canal Management Phase I (25 year cycle)	\$ 10,000,000
7415	Lake Management II	\$ 13,200,000
7411	Oceanfront Stormwater Facilities Maintenance	\$ 2,100,000
7023	Primary System Infrastructure Improvements II	\$ 13,200,000
SUBTOTAL		\$ 38,500,000
NEW PROGRAMS/PROJECTS		
7079	42nd Street Pump Station Outfalls	\$ 4,000,000
7082	BMP Maintenance Program Phase I (20 year cycle)	\$ 7,200,000
7083	Cave-In Repair Project (Backlog from 8 months to 2 months)	\$ 9,000,000
7087	Enhanced Neighborhood Rehab Program (15 year cycle)	\$ 51,000,000
7088	Pinewood Road Culvert Replacement	\$ 1,000,000
SUBTOTAL		\$ 72,200,000
TOTAL		\$ 110,700,000

VI. ACCOMPLISHMENTS

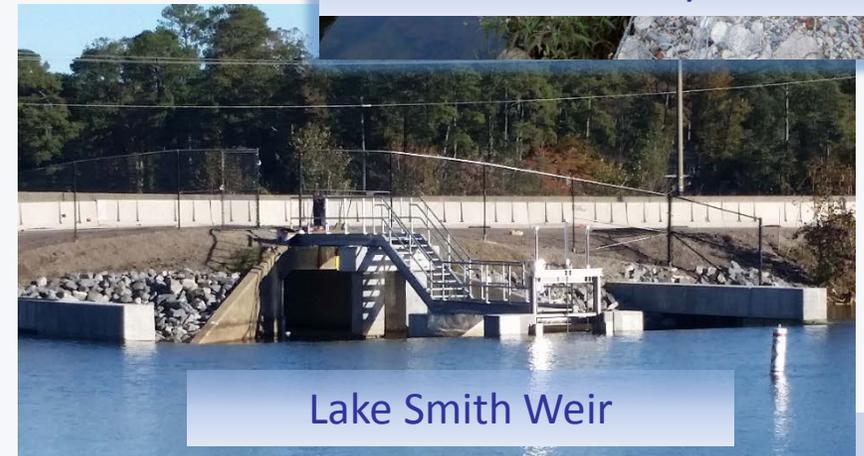
- Projects Recently Completed
- Projects Currently Under Construction
- Upcoming Construction

PROJECTS RECENTLY COMPLETED

- I. Bellamy Manor
- II. College Park/Level Green Drainage Improvements
- III. Lake Smith Weir Replacement
- IV. Northgate Ditch & Windsor Woods Canal
- V. USGS Rain Gauges (16 additional, 19 total)
- VI. Completed & Validated 18 watershed models
- VII. Completed Chesapeake Bay, Local Phosphorus and Bacteria TMDL Action Plans
- VIII. Submitted MS4 Permit Annual Report
- IX. 16th St Stormwater Pump Station Improvements
- X. SCADA Improvements
- XI. Six Lakes Dredged



Bellamy Manor



Lake Smith Weir

PROJECTS CURRENTLY UNDER CONSTRUCTION

- I. Ashville Park Drainage Improvements – Phase I
- II. Lake Dredging
 - ▷ Stratford Chase #1
- III. North Lake Holly Section IIIA
- IV. Sherwood Lakes Drainage Improvements
 - ▷ Interconnect Pipe
 - ▷ Pump Station
- V. South Lake Holly Section IV
- VI. Southern Boulevard Water Quality Improvement



UPCOMING NEW CONSTRUCTION (2019)

- I. Aragona Drainage Improvements
- II. Baker Road Culvert & Ditch Improvements
- III. Eastern Shore Drive Drainage Phase I –
Cape Henry Canal Improvements
- IV. Dredging Lynnhaven Woods & Windsor Oaks West #3
- V. Chatham Hall Water Quality Improvement



DISCUSSION