

# Proposed FY 2021-2026 CIP City Council Briefing

## *Stormwater Management*



March 31, 2020

# Stormwater Program Overview

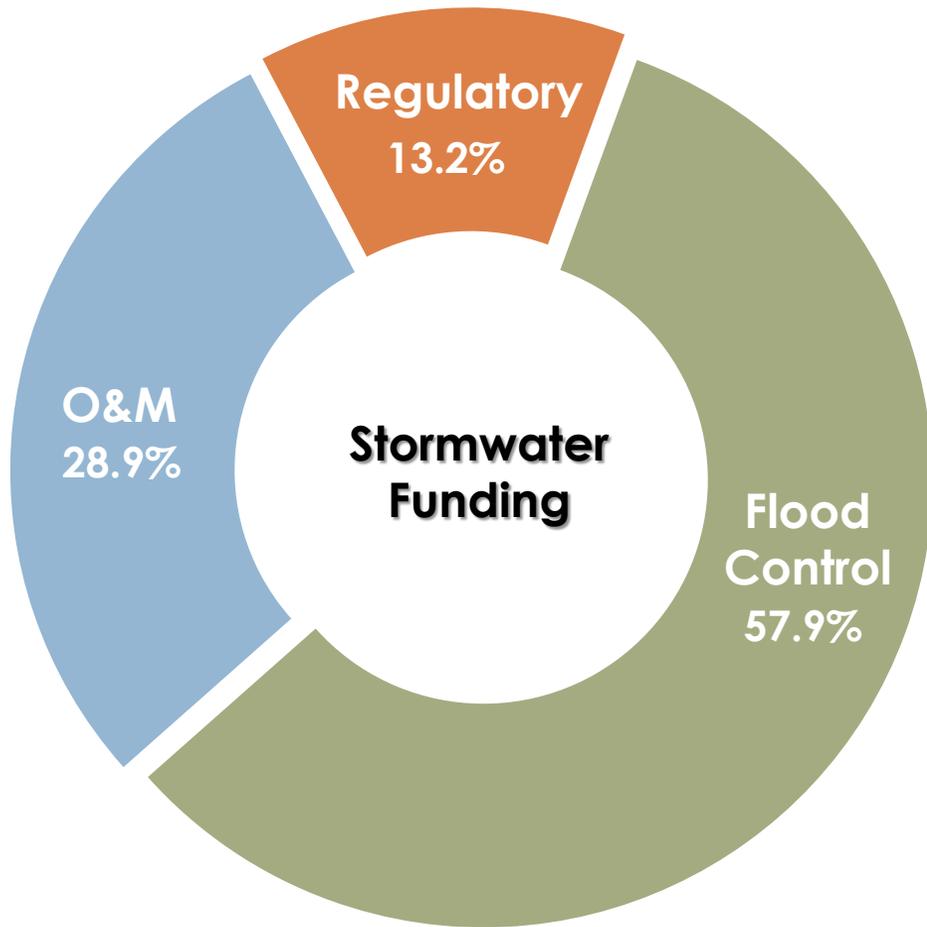
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# City Manager's Proposed FY2021-2026 Stormwater CIP

## I. Overview

## Funding Summary



- Flood Control Funding Years 1-6: \$240.4 M (57.9%)
  - 36 Projects/Programs
    - 12 Not Fully Funded - \$283.4 M BTC
  
- Operations & Maint. Funding Years 1-6: \$119.9 M (28.9%)
  - 17 Projects/Programs
    - 5 Not Fully Funded - \$160.5 M BTC
  
- Regulatory Funding Years 1-6: \$55 M (13.2%)
  - 9 Projects/Programs
    - 2 Not Fully Funded - \$3.4 M BTC

**Total Stormwater Funding Years 1-6: \$415.3 M**  
**62 Total Projects/Programs**

**Total Stormwater Program Cost: \$1.2 B**

# City Manager's Proposed FY2021-2026 Stormwater CIP

## II. Flood Control

Toni Utterback, P.E.

## Accomplishments

- **Sherwood Lakes Drainage Improvements**

- CIP 7-048, Total Project Cost – \$3.4 M
- Completed December 2019
- The project maintains acceptable water surface elevations within the North & South lakes within the Sherwood Lakes neighborhood to ensure storage is available to protect against flooding from extreme rainfall events.



- **North Lake Holly Section IIIA**

- CIP 7-005, Total Project Cost – \$4.6 M
- Completed January 2020
- A multiple outcome project providing neighborhood revitalization improvements including stormwater, water, sanitary sewer, and roadway improvements between 14<sup>th</sup> Street and 16<sup>th</sup> Street and Baltic Avenue to Cypress Avenue.



# II. Flood Control

## Projects w/ No Changes

	Project	CIP #	Current Phase	Appropriated to Date	FY21	FY22 – FY26	Total	BTC
1.	Aragona Drainage Improvements	7-400	Construction	4,400,000	0	0	4,400,000	0
2.	Ashville Park Drainage Improvements – Phase I	7-047	Construction	12,000,000	0	0	12,000,000	0
3.	Central Resort District Drainage Improvements	7-041	Not Started	800,000	0	0	800,000	92,000,000
4.	College Park and Level Green Drainage Improvements	7-402	Design	1,498,687	790,313	0	2,289,000	0
5.	Eastern Shore Drive – Cape Henry Canal Phase II	7-065	Design	1,800,000	2,000,000	500,000	4,300,000	0
6.	Eastern Shore Drive – Elevate Lynnhaven Drive	7-066	Not Started	0	0	3,600,000	3,600,000	0
7.	Eastern Shore Drive – Lynnhaven Colony Park Pump Station	7-068	Design	500,000	0	1,0400,000	10,900,000	0
8.	Eastern Shore Drive – Lynnhaven Drive Pump Station	7-069	Design	2,500,000	500,000	10,700,000	13,700,000	0
9.	Eastern Shore Drive – Vista Circle Pump Station	7-070	Not Started	0	0	14,300,000	14,300,000	0
10.	Eastern Shore Drive Drainage Phase I	7-151	Construction	17,500,000	0	0	17,500,000	0
11.	Lake Bradford/Chubb Lake	7-053	Planning	3,252,300	1,084,100	5,420,500	9,756,900	22,243,100
12.	North Lake Holly Watershed	7-005	Construction	22,271,135	1,800,000	0	24,071,135	0
13.	Princess Anne Plaza Drainage Improvements – Phase I	7-050	Design	5,073,597	0	760,000	5,833,597	0
14.	Princess Anne Plaza North London Bridge Creek Pump Station	7-089	Planning	0	7,500,000	15,500,000	23,000,000	42,900,000
15.	Sea Level Rise/Recurrent Flooding Analysis	7-030	Study	4,004,447	240,000	800,000	5,044,447	0
16.	South Lake Holly Watershed	7-016	Construction	16,009,587	0	0	16,009,587	0
17.	The Lakes - South London Bridge Creek Channels and Gate	7-094	Planning	0	2,200,000	9,992,000	12,192,000	0
18.	The Lakes Drainage Improvements	7-051	Design	2,000,000	0	0	2,000,000	0

# II. Flood Control

## Projects w/ No Changes (Cont'd)

	Project	CIP #	Current Phase	Appropriated to Date	FY21	FY22 – FY26	Total	BTC
19.	Windsor Woods – Thalia Creek/Lake Trashmore Improvements	7-076	Not Started	0	0	5,200,000	5,200,000	0
20.	Windsor Woods Drainage	7-028	Design	14,345,237	2,830,000	8,496,200	25,671,437	0
21.	Windsor Woods Pump Station	7-077	Design	500,000	0	39,750,000	40,250,000	0
22.	Windsor Woods Tide Gate	7-078	Design	4,500,000	4,850,000	0	9,350,000	0

# II. Flood Control

## On-going Programs w/ No Changes

	Project	CIP #	ATD	FY21	FY22	FY23	FY24	FY25	FY26	Total	BTC
1.	Atlantic Ocean Watershed Stormwater Projects	7-081	500,000	0	0	0	0	0	0	500,000	6,755,000
2.	Elizabeth River Watershed Stormwater Projects	7-086	0	0	0	0	500,000	0	865,000	1,365,000	11,435,000
3.	Little Creek Watershed Stormwater Projects	7-071	0	0	0	0	1,000,000	0	0	1,000,000	7,600,000
4.	Lynnhaven River Watershed Stormwater Projects	7-072	780,000	0	1,000,000	0	0	0	0	1,780,000	21,020,000
5.	Neighborhood SW Infrastructure Improvements II	7-413	5,430,503	341,898	458,248	492,854	464,469	506,369	499,469	8,193,810	0
6.	Southern Canal/Lead Ditch & Culvert Improvements	7-024	6,130,000	2,390,000	2,390,000	2,390,000	2,390,000	2,390,000	2,390,000	20,470,000	0
7.	Southern Rivers Watershed Stormwater Projects	7-092	0	500,000	0	3,800,000	0	0	0	4,300,000	11,600,000
8.	SWM Master Planning, Analysis, and Inventory	7-027	9,770,906	497,430	1,002,430	1,002,430	1,007,430	1,007,430	1,007,430	15,295,486	0

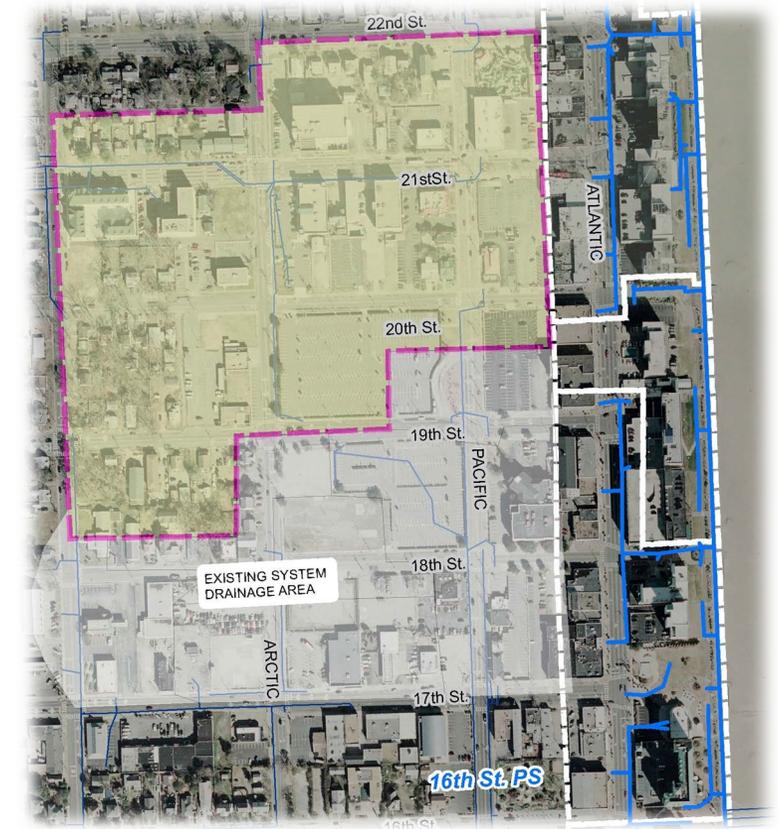


## Projects Being Modified

### Central Resort – Redirect Stormwater to 16th Street Pump Station, CIP 7-084

- Redirect stormwater from 21<sup>st</sup> Street and Baltic Avenue to 16<sup>th</sup> Street pump station
- Includes modifying the 16<sup>th</sup> Street pump station
- Improves drainage to be compatible with the ultimate solution

→ **Funding Reallocated to PW Operations and Maintenance**



**Total Project Cost: \$15.0 M**

**BTC: \$3.3 M**

	Appropriated to Date	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	Total
<b>FY 2020 Adopted</b>	-	-	4,800,000	700,000	9,500,000	-	-	15,000,000
<b>Change</b>	-	-	(4,800,000)	800,000	(600,000)	1,300,000	-	(3,300,000)
<b>FY 2021 Proposed</b>	-	-	-	1,500,000	8,900,000	1,300,000	-	11,700,000

## Projects Being Modified

### Princess Anne Plaza Golf Course Conversion, CIP 7-073

- Convert Golf Course to multi-faceted facility
  - Provide stormwater storage
  - Provide Active and Passive Recreational Opportunities
    - ▶ Active Uses
      - ❖ Multi-purpose playing field
      - ❖ Mountain bike trails
      - ❖ Nature/interpretive trails
      - ❖ Skate park features
      - ❖ Pickleball courts
      - ❖ Sand volleyball courts
    - ▶ Passive Uses
      - ❖ Overlooks and wildlife viewing blinds
      - ❖ Interpretive stormwater playground
      - ❖ Piers/Blueway Access
      - ❖ Shade shelter



→ **Increased Funding by \$22.2 M**

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

**BTC: \$39.9 M**

	Appropriated to Date	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	Total
<b>FY 2020 Adopted</b>	-	4,850,000	4,960,000	5,040,000	5,438,966	1,145,000	-	21,433,966
<b>Change</b>	-	(1,850,000)	8,530,313	6,260,000	(5,438,966)	(1,145,000)	15,900,000	22,256,347
<b>FY 2021 Proposed</b>	-	3,000,000	13,490,313	11,300,000	-	-	15,900,000	43,690,313

## New Projects/Programs in the CIP

### Stormwater Green Infrastructure, CIP 7-104

- Considered complementary flood risk management strategy
- Near-term Strategy for Sea Level Rise Adaptation
- Also called Natural and Nature-Based Features
  - Living Shorelines
  - Maritime Forests
  - Oyster Reefs
  - Submerged Aquatic Vegetation
  - Beach and Dune Restoration



Total Project Cost: \$20.0 M

**BTC: \$19.5 M**

	Appropriated to Date	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	Total
City Funding	-	-	-	500,000	-	-	-	500,000

## New Projects/Programs in the CIP

### USACE Regional Coastal Storm Risk Management Study, 7-105

- Required to receive Federal funding assistance for the Sea Level Wise Adaptation Strategies
- Study will perform an analysis of various strategies to combat sea level rise
- Study will recommend a strategy to be constructed
- Preliminary opinions of probable cost will be developed
- Environmental Impact Statement will be completed



**Total Project Cost: \$1.5 M**

	Appropriated to Date	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	Total
<b>City Funding</b>	<b>500,000</b>	<b>1,000,000</b>	-	-	-	-	-	<b>1,500,000</b>



# II. Flood Control

## Bond Referendum Projects

		Estimated Total Project Cost	Total Programmed Proposed FY21-26 CIP *	Additional Funding Needed to Complete
<b>Rose Hall District</b>				
Princess Anne Plaza Projects		\$ 200,733,597	\$ 72,523,910	\$ 128,209,687
Windsor Woods Projects		\$ 139,876,437	\$ 80,471,437	\$ 59,405,000
The Lakes Projects		\$ 31,592,000	\$ 14,192,000	\$ 17,400,000
	<b>Total</b>	<b>\$ 372,202,034</b>	<b>\$ 167,187,347</b>	<b>\$ 205,014,687</b>
<b>Bayside District</b>				
Lake Bradford/Chubb Lake	<b>Total</b>	<b>\$ 32,000,000</b>	<b>\$ 9,756,900</b>	<b>\$ 22,243,100</b>
<b>Lynnhaven District</b>				
Eastern Shore Drive Projects	<b>Total</b>	<b>\$ 95,000,000</b>	<b>\$ 64,300,000</b>	<b>\$ 30,700,000</b>
<b>Beach District</b>				
Central Resort Drainage Improvements	<b>Total</b>	<b>\$ 113,000,000</b>	<b>\$ 12,600,000</b>	<b>\$ 100,400,000</b>

\*ATD are included in these totals

# II. Flood Control

## Bond Referendum Projects (Cont'd)

		Estimated Total Project Cost	Total Programmed Proposed FY21-26 CIP *	Additional Funding Needed to Complete
<b>Centerville/Kempsville Districts</b>				
Stumpy Lake Watershed Analysis	<b>Total</b>	\$ 3,000,000	\$ -	\$ 3,000,000
<b>Centerville District</b>				
College Park and Level Green Drainage Improvements	<b>Total</b>	\$ 2,289,000	\$ 2,289,000	\$ -
<b>Princess Anne District</b>				
Stormwater Green Infrastructure		\$ 20,000,000	\$ 500,000	\$ 19,500,000
Sandbridge/New Bridge Intersection Improvements		\$ 7,990,000	\$ -	\$ 7,990,000
Raise Indian River Road		\$ 45,100,000	\$ -	\$ 45,100,000
Raise Pungo Ferry Road		\$ 16,120,000	\$ -	\$ 16,120,000
	<b>Total</b>	\$ 89,210,000	\$ 500,000	\$ 88,710,000
<b>GRAND TOTAL</b>		\$ 706,701,034	\$ 256,633,247	\$ 450,067,787

\*ATD are included in these totals

# II. Flood Control

## Bond Referendum Projects

	Project	CIP #	Appropriated to Date	FY21	FY22 – FY26	Total	BTC
1.	Central Resort – 24th Street Culvert	7-064	100,000	0	0	100,000	5,100,000
2.	Central Resort – Redirect Stormwater to 16th St. Pump Station	7-084	0	0	11,700,000	11,700,000	3,300,000
3.	Central Resort District Drainage Improvements	7-041	800,000	0	0	800,000	92,000,000
4.	College Park and Level Green Drainage Improvements	7-402	1,498,687	790,313	0	2,289,000	0
5.	Eastern Shore Drive – Cape Henry Canal Phase II	7-065	1,800,000	2,000,000	500,000	4,300,000	0
6.	Eastern Shore Drive – Elevate Lynnhaven Drive	7-066	0	0	3,600,000	3,600,000	0
7.	Eastern Shore Drive – Lynnhaven Colony Park Pump Station	7-068	500,000	0	10,400,000	10,900,000	0
8.	Eastern Shore Drive – Lynnhaven Drive Pump Station	7-069	2,500,000	500,000	10,700,000	13,700,000	0
9.	Eastern Shore Drive – Vista Circle Pump Station	7-070	0	0	14,300,000	14,300,000	0
10.	Eastern Shore Drive Drainage Phase I	7-151	17,500,000	0	0	17,500,000	0
11.	Eastern Shore Drive – Poinciana Pump Station	7-085	0	0	0	0	8,200,000
12.	Eastern Shore Drive – Phase I, Section 1F Improvements	7-108	0	0	0	0	1,560,000
13.	Eastern Shore Drive – Phase I, Section 1G Improvements	7-109	0	0	0	0	940,000
14.	Eastern Shore Drive Drainage Phase II	7-151	0	0	0	0	20,000,000
15.	Lake Bradford/Chubb Lake	7-053	3,252,300	1,084,100	5,420,500	9,756,900	22,243,100
16.	Princess Anne Plaza Drainage Improvements – Phase I	7-050	5,073,597	0	760,000	5,833,597	0
17.	Princess Anne Plaza Golf Course Conversion	7-073	0	3,000,000	40,690,313	43,690,313	39,909,687
18.	Princess Anne Plaza North London Bridge Creek Pump Station	7-089	0	7,500,000	15,500,000	23,000,000	42,900,000
19.	Princess Anne Plaza Drainage Improvements – Phase II	7-090	0	0	0	0	35,400,000

# II. Flood Control

## Bond Referendum Projects (Cont'd)

	Project	CIP #	Appropriated to Date	FY21	FY22 – FY26	Total	BTC
20.	Princess Anne Plaza Little League Ballfields Relocation	7-074	0	0	0	0	3,800,000
21.	Princess Anne Plaza Northgate Ballfields Conversion	7-075	0	0	0	0	6,200,000
22.	The Lakes - South London Bridge Creek Channels and Gate	7-094	0	2,200,000	9,992,000	12,192,000	0
23.	The Lakes Drainage Improvements – Phase I	7-051	2,000,000	0	0	2,000,000	0
24.	The Lakes Drainage – Flood Barriers	7-111	0	0	0	0	3,600,000
25.	The Lakes Drainage – Holland Road Gate	7-112	0	0	0	0	8,100,000
26.	The Lakes Drainage Improvements - Phase II	7-116	0	0	0	0	5,700,000
27.	Windsor Woods – Thalia Creek/Lake Trashmore Improvements	7-076	0	0	5,200,000	5,200,000	0
28.	Windsor Woods Drainage Improvements - Phase I	7-028	14,345,237	2,830,000	8,496,200	25,671,437	0
29.	Windsor Woods Flood Barriers	7-118	0	0	0	0	14,000,000
30.	Windsor Woods Pump Station	7-077	500,000	0	39,750,000	40,250,000	0
31.	Windsor Woods Tide Gate (Includes Temp Pumps)	7-078	4,500,000	4,850,000	0	9,350,000	0
32.	Windsor Woods Storm Drain Pipe Projects (Phase II )	7-096	0	0	0	0	45,405,000
33.	Stumpy Lake Watershed Analysis	N/A	0	0	0	0	3,000,000
34.	Stormwater Green Infrastructure	7-104	0	0	500,000	500,000	19,500,000
35.	Sandbridge/New Bridge Intersection Improvements	N/A	0	0	0	0	7,990,000
36.	Raise Indian River Road	N/A	0	0	0	0	45,100,000
37.	Raise Pungo Ferry Road	N/A	0	0	0	0	16,120,000
<b>TOTAL FLOOD CONTROL PROJECTS</b>			<b>54,369,821</b>	<b>24,754,413</b>	<b>177,509,013</b>	<b>256,633,247</b>	<b>450,067,787</b>

# City Manager's Proposed FY2021-2026 Stormwater CIP

## III. Operations and Maintenance

Mark Jones, P.E.

## Accomplishments

- **Lynnhaven Woods Lake #1 Dredging**
  - CIP 7-415, Total Project Cost – \$660 K
  - Completed July 2019
  - Neighborhood Dredging Project to Improve Flood Storage and Water Quality



- **Ocean Park II Stormwater Pump Station Rehabilitation**
  - CIP 7-412, Total Project Cost – \$1.4 M
  - Completed March 2020
  - Complete Rehabilitation and Pump Replacement of Stormwater Pump Station



## Accomplishments

### ■ Watersedge Drive

- CIP 7-416, Total Project Cost – \$264 K
- Completed January 2020
- Drainage Improvement for Seven Homes along a Section of Watersedge Drive.



### ■ Sandfiddler Road Drainage Improvements

- CIP 7-416, Total Project Cost – \$230 K
- Completed January 2020
- Drainage Improvement along a Section of Sandfiddler Road.



## Accomplishments

### ■ Thalia Wayside Neighborhood Rehabilitation

- CIP 7-416, Total Project Cost – \$650 K
- Completed June 2019
- CCTV and Pipe Repair of Drainage System.



### ■ Malibu Neighborhood Rehabilitation

- CIP 7-416, Total Project Cost – \$780 K
- Completed March 2019
- CCTV and Pipe Repair of Drainage System.
- 9 Neighborhood Rehabilitations Completed Since 2015



# III. Operations and Maintenance

## Projects w/ No Changes

	Project	CIP #	Current Phase	Appropriated to Date	FY21	FY22 – FY26	Total	BTC
1.	42 <sup>nd</sup> Street Pump Station Outfalls	7-079	Design	4,476,522	0	0	4,476,522	0

# III. Operations and Maintenance

## On-going Programs w/ No Changes

	Project	CIP #	ATD	FY21	FY22	FY23	FY24	FY25	FY26	Total	BTC
1.	BMP Maintenance Program Phase I	7-082	1,000,000	0	1,200,000	1,100,000	1,000,000	1,000,000	1,000,000	6,300,000	17,700,000
2.	Canal Management Phase I	7-055	500,000	0	500,000	500,000	500,000	500,000	500,000	3,000,000	47,000,000
3.	Enhanced Neighborhood Rehabilitation – Phase I	7-087	0	1,237,158	1,202,895	1,203,702	1,174,587	1,174,587	1,174,587	7,167,516	43,832,484
4.	Flood Mitigation Grant Program	7-032	1,227,144	0	0	0	0	0	0	1,227,144	0
5.	Flood Mitigation Grant Program II	7-044	874,061	0	0	0	0	0	0	874,061	0
6.	Flood Mitigation Grant Program III	7-058	2,914,976	0	0	0	0	0	0	2,914,976	0
7.	Lake Management II	7-415	37,155,432	4,947,652	4,947,652	4,947,652	4,947,652	4,947,652	4,947,652	66,841,344	0
8.	Oceanfront Stormwater Facilities Maintenance	7-411	7,380,740	650,000	1,650,000	1,650,000	1,650,000	1,650,000	1,650,000	16,280,740	0
9.	Primary System Infrastructure Improvements II	7-023	12,890,000	2,270,000	2,270,000	2,270,000	2,270,000	2,270,000	2,270,000	26,510,000	0
10.	Residential Drainage Cost Participation II	7-026	350,000	50,000	50,000	50,000	50,000	50,000	50,000	650,000	0

# III. Operations and Maintenance

## On-going Programs w/ No Changes (Cont'd)

	Project	CIP #	ATD	FY21	FY22	FY23	FY24	FY25	FY26	Total	BTC
11.	Stormwater Pump Station Modifications	7-412	7,525,229	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	15,025,229	0
12.	SW Infrastructure Rehab & Improvements II	7-416	45,206,982	6,150,000	5,750,000	5,750,000	5,750,000	5,750,000	5,750,000	80,106,982	0

## New Projects/Programs in the CIP

### Arctic Avenue Drainage Improvements, 7-103

- Repair the Invert and Install Three New Structures for Two 92 inch Severely Corroded Corrugated Metal Pipes
- Slip Line Inside of Pipe



**Total Project Cost: \$2.0 M**

**→ Received \$2M from Flood Control Projects**

	Appropriated to Date	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	Total
City Funding	-	2,000,000	-	-	-	-	-	2,000,000

## New Projects/Programs in the CIP (Cont'd)

### Cave In Repair Program, 7-083

- Current 8 month Backlog of 800 Cave Repairs
- Repaired with City and Contracted Repair Effort
- Required to Maintain >1100 miles of Pipe>43K Manholes
- Goal 2 month
- Repairs Contribute to Increased System Lifespan and Flood control



Total Project Cost: \$9.0 M

**BTC: \$3.0 M**

→ **Received \$6M from Flood Control Projects**

	Appropriated to Date	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	Total
<b>City Funding</b>	-	2,000,000	4,000,000	-	-	-	-	6,000,000

## New Projects/Programs in the CIP (Cont'd)

### Pinewood Road Drainage Improvements 7-107

- Project Will Replace Existing Culvert
- Current Culvert Provides Small Hydraulic Opening
- Location is Year-Round Highly Travelled Area
- Main Access Point to Residential Homes in Area



**Total Project Cost: \$1.0 M**

**→ Received \$1M from Flood Control Projects**

	Appropriated to Date	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	Total
City Funding	-	1,000,000	-	-	-	-	-	1,000,000

## New Projects/Programs in the CIP (Cont'd)

### Roadside Ditch Program, CIP 7-106

- Perform Maintenance, Rehabilitation and Sediment Removal
- No Current Cycle
- Approximate 1 Year Backlog
- 10 Year Cycle Goal



Total Project Cost: \$50.0 M

**BTC: \$49.0 M**

→ **Received \$1M from Flood Control Projects**

	Appropriated to Date	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	Total
City Funding	-	-	1,000,000	-	-	-	-	1,000,000

# City Manager's Proposed FY2021-2026 Stormwater CIP

## IV. Regulatory – Water Quality

Diana St. John, P.E.

## Accomplishments

### ■ Southern Boulevard Water Quality Improvement

- CIP 7-406.004, Total Project Cost – \$2.9 M
- Substantially Complete November 2019
- Cost Participation project located in the Elizabeth River Watershed
- Level I wet pond will provide WQ improvements to meet Chesapeake Bay and Local Bacteria TMDL pollutant



Pollutant Reduction Summary			
	TP (lbs/Yr)	TN (lbs/yr)	TSS (lbs/yr)
Redevelopment	13.1	20.6	5138.3
Chesapeake Bay TMDL	25.6	67.1	16,727
<b>Total</b>	<b>38.7</b>	<b>87.7</b>	<b>21,865.3</b>

### ■ MS4 Permit Annual Report



# IV. Regulatory – Water Quality

## Projects w/ No Changes

	Project	CIP #	Current Phase	Appropriated to Date	FY21	FY22 – FY26	Total	BTC
1.	Bayville Lake Water Quality Improvement Project	7-060	Design	1,000,000	0	3,300,000	4,300,000	0
2.	Lake Edward Water Quality Improvement Project	7-061	Planning	0	0	1,500,000	1,500,000	2,900,000
3.	Lynnhaven River Basin Ecosystem Restoration	7-059	Design	6,000,000	3,000,000	5,000,000	14,000,000	500,000

# IV. Regulatory – Water Quality

## On-going Programs w/ No Changes

	Project	CIP #	ATD	FY21	FY22	FY23	FY24	FY25	FY26	Total	BTC
1.	Elizabeth River Watershed	7-406	12,635,150	600,000	600,000	600,000	100,000	100,000	100,000	14,735,150	0
2.	Lynnhaven River Watershed II	7-054	3,021,605	711,762	411,762	461,762	461,762	1,711,762	1,711,762	8,492,177	0
3.	Southern Rivers Watershed	7-410	2,500,000	700,000	1,100,000	1,100,000	1,100,000	1,900,000	1,900,000	10,300,000	0
4.	Storm Water Quality Enhancements II	7-414	9,667,948	750,000	2,300,000	1,900,000	2,300,000	2,450,000	2,450,000	21,817,948	0
5.	Surface Water Regulatory Compliance Program	7-042	8,831,942	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	23,231,942	0
6.	Water Quality Cost Participation Projects II	7-043	116,773	50,000	50,000	50,000	50,000	50,000	50,000	416,773	0

## Projects w/ No Changes

### Bayville Lake Water Quality Improvement Project, CIP 7-060

- Constructing pretreatment forebays, wetland areas, and an aeration system
- Local Bacteria and Chesapeake Bay TMDL Pollutant Reductions
- Resident Educational Opportunity
- Design Start – June 2020
- Construction Start – October 2024



**Total Project Cost: \$4.3 M**

	Appropriated to Date	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	Total
<b>City Funding</b>	<b>1,000,000</b>	-	<b>1,650,000</b>	<b>1,650,000</b>	-	-	-	<b>4,300,000</b>

## Projects w/ No Changes

### Kemps Lake Water Quality Improvement Project

- Funded under Elizabeth River Watershed Program, CIP 7-406
- Constructing pretreatment forebays, wetland areas, and an aeration system
- Awarded DEQ Stormwater Local Assistance Funding Grant
- Local Bacteria and Chesapeake Bay TMDL Pollutant Reductions
- Design 95% Complete
- Construction Start – Fall 2021



**Total Project Cost: \$4.7 M**

	Appropriated to Date	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	Total
City Funding	12,635,150	600,000	600,000	600,000	100,000	100,000	100,000	14,735,150

# V. Stormwater Challenges

## Summary

- Prioritizing Flood Control Projects
- Balancing the need for new infrastructure vs. maintaining the existing infrastructure
- Preparing for a future with more frequent and intense rainfall events and higher sea levels
- Funding
- Potential increased requirements in 2021 MS4 permit



# Next: Roadways – David Jarman, P.E.

