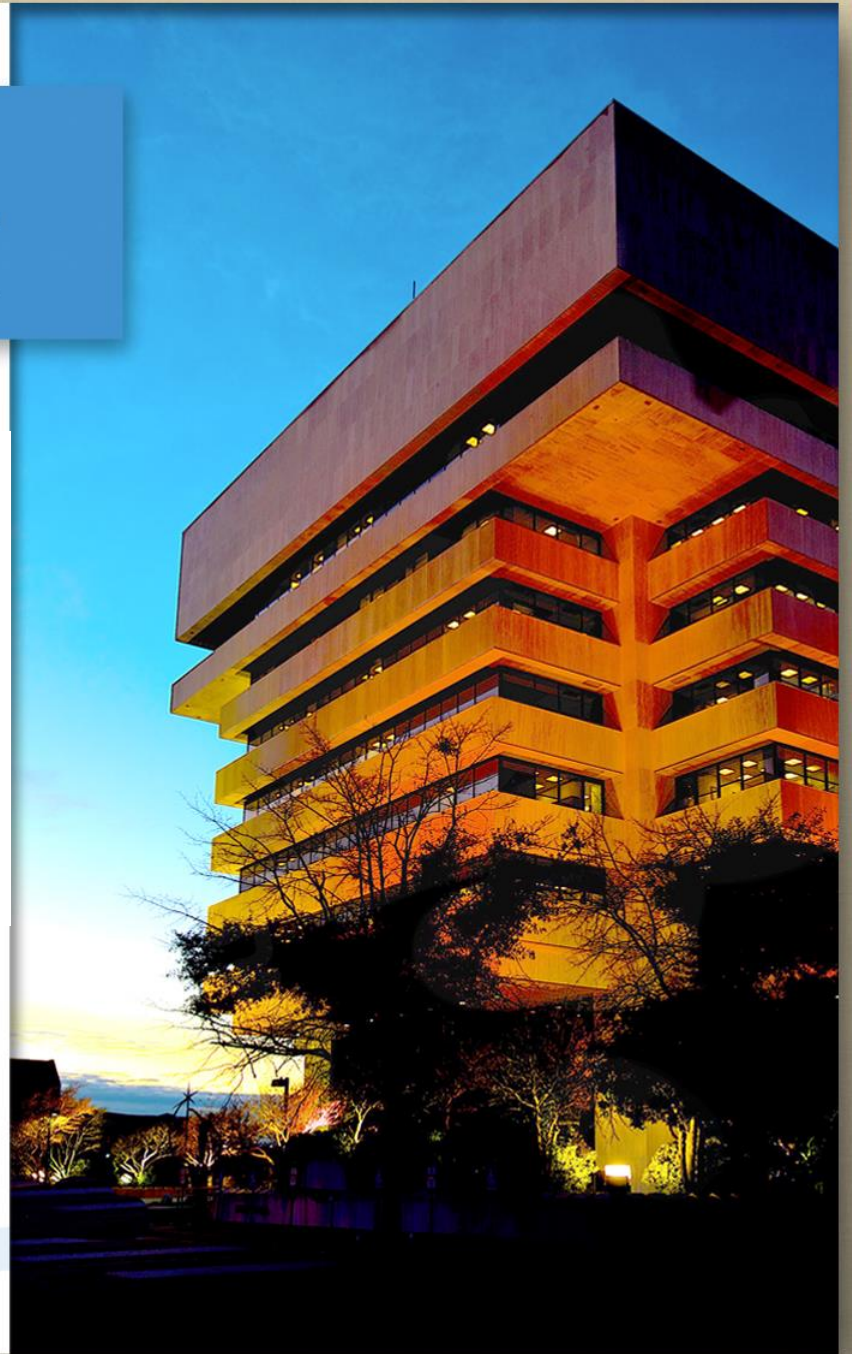


HAMPTON VA

Stormwater Projects

City Council
January 27, 2021



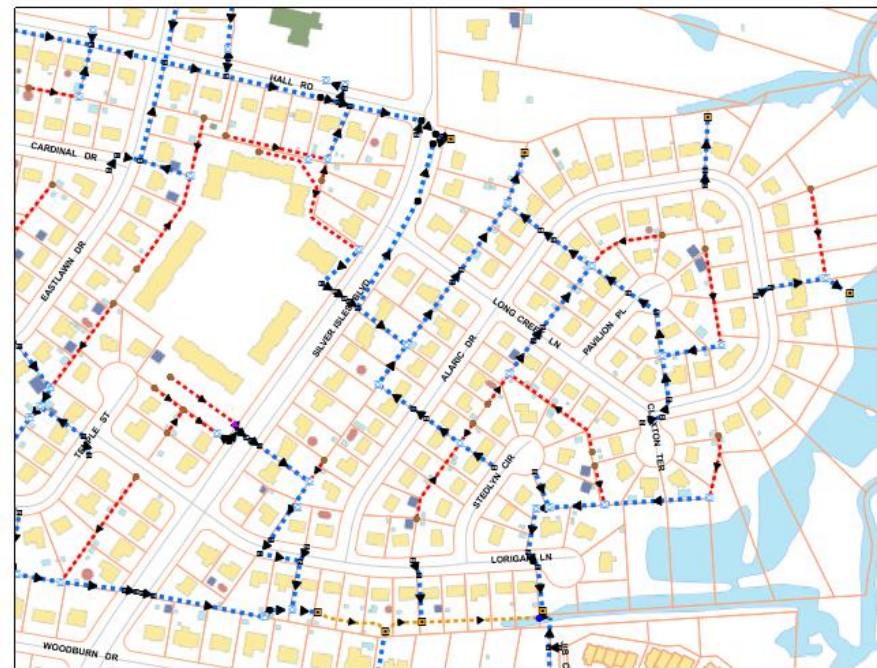
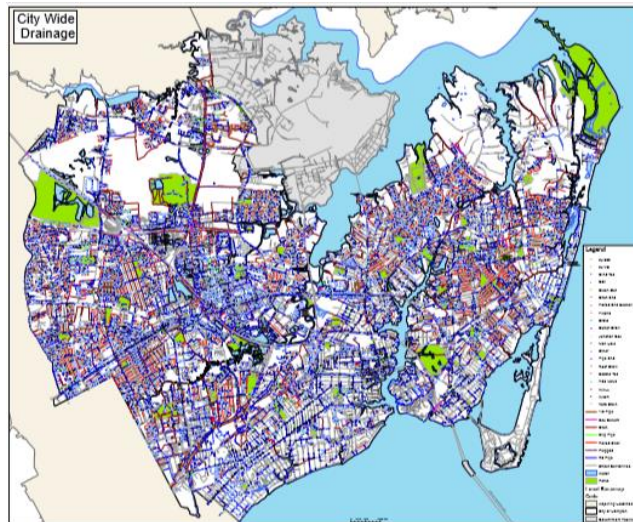
Stormwater System

The City of Hampton Stormwater System consists of the following:

- 557 Miles of Stormwater Infrastructure
- 7076 Stormwater Structures
- 61 Miles of open Ditches and Culverts
- 46 Stormwater Management Facilities



City Wide Drainage Map

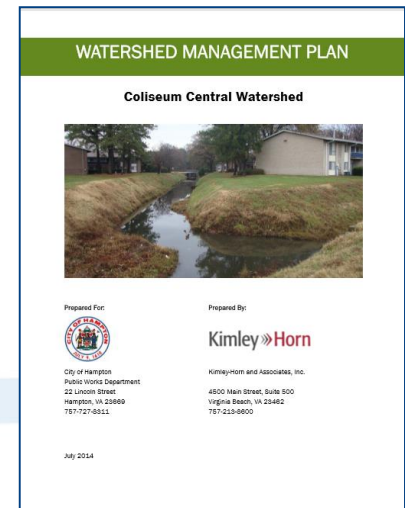
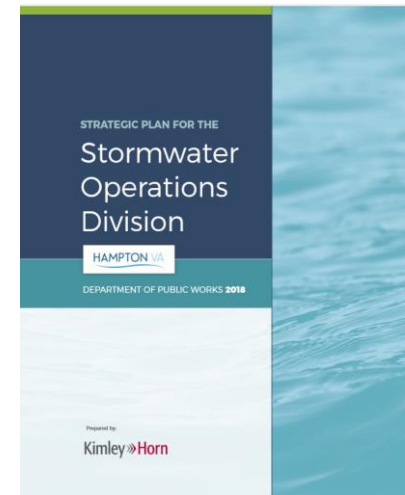


Stormwater System Impacts

- Aging Infrastructure
 - Majority of system constructed from the 1940's to the 1970's.
- An Increase in Intense Rain Events
 - The City is experiencing increased amounts of rainfall within a short timeframe, such as 4" of rainfall within 4 hours which has negative effects on the system (Flooding).
- Sea Level Rise
 - Anticipated increase of 1.5' MHHW for near-term (Present-2050), 3' MHHW for mid-term (2050-2080) and 4.5 MHHW for long-term (2080-2100).
- Development
 - Increase in impervious area impacts flooding throughout the City.
- Environmental Requirements
 - City was issued the original Municipal Separate Storm Sewer System (MS4) permit in 1996.
 - The Chesapeake Bay Total Maximum Daily Load (TMDL) regulations became part of the MS4 permit in 2016.

Identification of Projects


- Economic Development
 - Support Development Needs
- Community Development
 - Master Plans
 - Resilient Hampton
- Parks, Recreation and Leisure Services
 - Coordination of maintenance for various parks and beaches
- Public Works
 - Citizen Concerns
 - Inspection of Infrastructure
 - Municipal Separate Storm Sewer System (MS4) Permit
 - Stormwater Operations Plan
 - Watershed Studies



Project Coordination

- A stormwater project managed by Public Works staff undergoes a significant amount of coordination and review:
 - Project Manager initially meets with appropriate internal staff from Community Development, Economic Development, Parks Recreation & Leisure Services and others to determine the scope of the project.
 - Project consultants submits a 30%, 60% and 100% plan for the City review that includes both the impacted departments and Public Works staff.
 - Plan is coordinated with all supporting utilities, (Dominion Energy, Newport New Waterworks, Hampton Road Sanitation District, Verizon, Cox Communications and Virginia Natural Gas).
 - Plan is submitted to a variety of regulatory agencies, such as the Army Corps of Engineer, Virginia Department of Environmental Quality, Virginia Marine Resources Commission, and local Wetlands Board.

Types of Stormwater Projects

- Flood Reduction
 - Water Quality
 - Resilience
 - Outfall Maintenance (Clean outfalls, ditches, pipe, structures into the neighborhood)
 - Stormwater Management Facilities (Best Management Practices)
 - Update of Aging Infrastructure
 - Assessment and Cleaning of System
 - Other
- 
- A decorative wavy line in a light blue color, spanning the width of the slide near the bottom, with a slight upward curve in the center.

Flood Reduction

- Northampton Area Drainage Improvements



Flood Reduction

- Harris Creek Road Drainage Improvements



Flood Reduction

- Patrick and Owens Street Stormwater Improvements



Before



After

Flood Reduction

- Bellwood Road Stormwater Improvements



Flood Reduction

- Newmarket Creek Stormwater Maintenance



Before



After

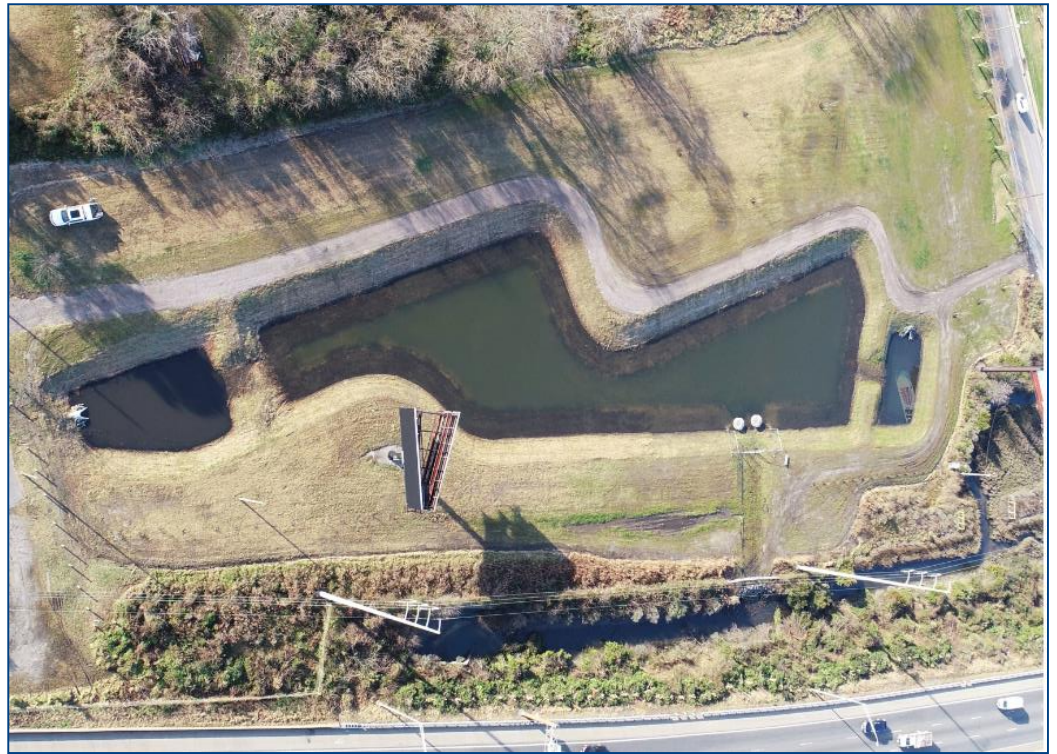
Water Quality

- Pochin Place and Indian River Creek Basin



Water Quality

- King Street Stormwater Retention Basin

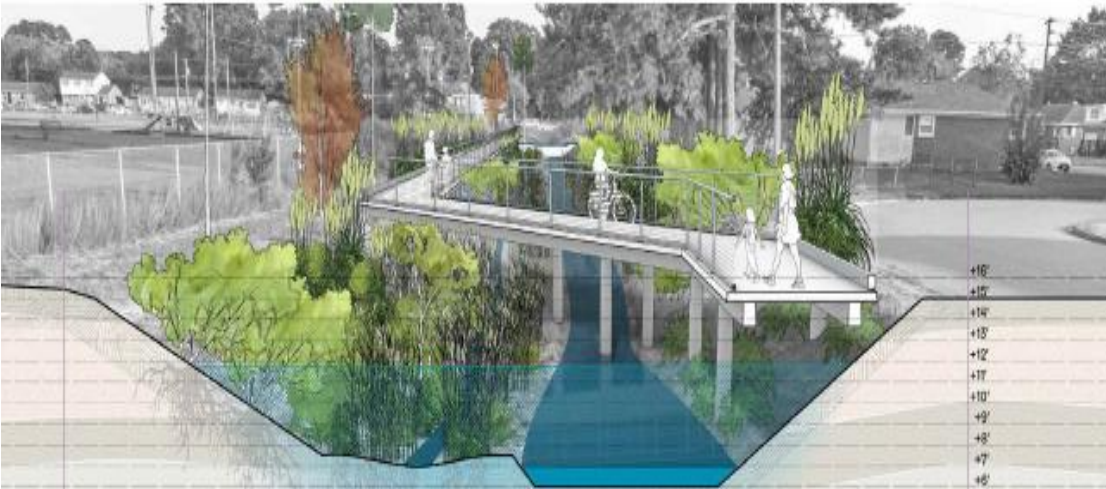


Water Quality

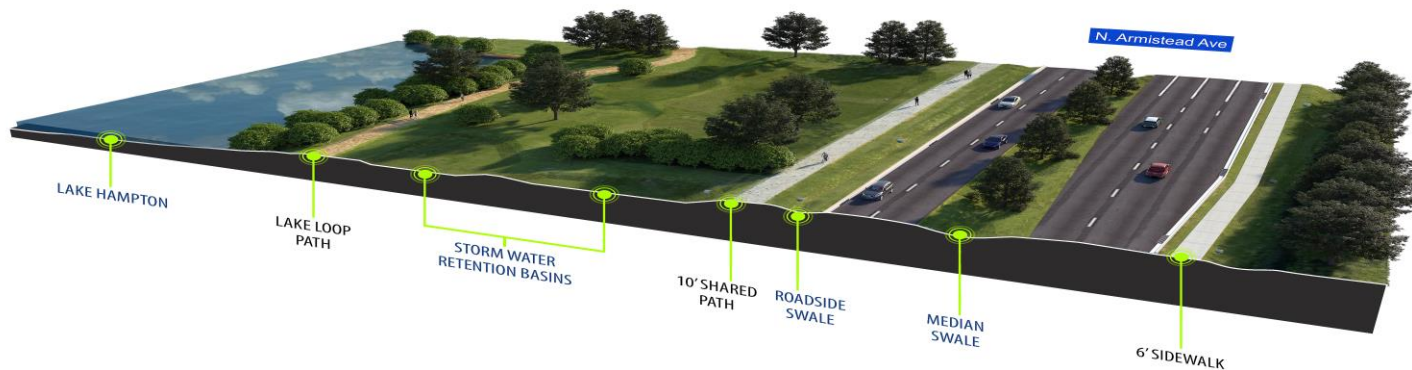
- Boo Williams Sportsplex Stormwater Management Facility



Resilient Hampton



Big Bethel Blueway



North Armistead Avenue Roadway Raising and Lake Hampton

Future Resilient Hampton



Honor Park

Outfall Maintenance

Wind Mill Point Road



Beach Road



Outfall Maintenance

Harris Creek Road Outfall Improvements



Outfall Maintenance

Olde Wythe Neighborhood - Indian River Creek Dredging



Stormwater Management Facilities

The City currently maintains 46 public Stormwater Management Facilities.



Pembroke Avenue



Air Power Park

Infiltration Basins

Infiltration Basins within the Hampton Roads Center Parkway right-of-way and adjacent to North Kings Street at the intersection with East Mercury Boulevard.



Projects Under Consideration

- Downtown Hampton Living Shoreline (Concept)
- Coliseum Lake Weir Replacement (Design)
- Frissell Street Ditch Relocation (Design)
- Greater Wythe Area Drainage Improvements (Design)
- Halifax Road Drainage Improvements (Design)
- Harris Creek Road Ditch Relocation (Design)
- Kecoughtan Road (Design)
- Little Back River Road Improvement (Design)
- Newmarket Area Drainage Improvements (Design)
- Phoebus Drainage Improvements (Design)
- Phoebus Area Drainage Improvements (Design)

Projects Under Consideration

- Shell Road Ditch Relocation (Design)
- Warner Road Drainage Improvements (Design)
- Winchester Drive (Property Acquisition)
- Buckroe Beach Renourishment (Permitting)
- Farmington Canal Ditch Maintenance (Permitting)
- Happy Acres Outfall Maintenance (Permitting)
- Little Back River Road Outfall Maintenance (Permitting)
- Routten Road Outfall Improvements (Permitting)
- Westminster Drainage Improvements (Permitting)
- Wind Mill Point Road Outfall Maintenance (Permitting)
- Lynnhaven Lake (Pending Construction)

Aging Infrastructure

- With the majority of the system more than 40 years old the system experiences failure to include cave-ins. Hamptons Stormwater Team accesses, repairs and replaces infrastructure through the City.



Before Construction



After Construction

Cleaning and Assessment of System

- There is an ongoing need to thoroughly clean and inspect stormwater pipes throughout the City to reduce the chance of flooding.
- Public Works cleaned and inspected 75,682 feet of pipe last year.



Summary

- The City's Stormwater System Faces Many Challenges:
 - Aging infrastructure
 - Increased maintenance of system
 - Existing system needs improvements to sustain today's standards
 - Increase in intense rain events
 - Sea level rise
 - Environmental requirements
- The City's Stormwater Team Serves Our Customers in Many Ways:
 - Managing a variety of projects
 - Maintaining a large and complex network of pipes, structures and ditches
 - Providing pest control
 - Inspection of construction projects, land disturbing activities, stormwater management facilities, and Newmarket Creek
 - Rehabilitation and repair of the existing system
 - Construction of capital projects

Questions?

