



# **2024 EPA Integrated Plan Annual Information Meeting**

January 23, 2024

- Overview of Integrated Plan
- Progress to Date
- HRSD/Locality Cooperation
- Steps that citizens within the Localities may take to protect the receiving waters
- Questions and Answers

# HRSD provides wastewater conveyance and treatment service to 20 cities and counties of SE Virginia and the Eastern Shore



Political subdivision  
Created in 1940



Governing body: Governor-appointed commission



14<sup>th</sup> Largest Wastewater Utility in the US  
Population served: 1.9 million



Combined wastewater treatment capacity: 225 million gallons/day



Operate 8 major and 6 smaller treatment plants and 500 miles of pipelines



*Service area = 5,000 square miles*





*Raw sewage was discharged to open area waterways and ditches before HRSD was created in 1940.*



### Our Promise

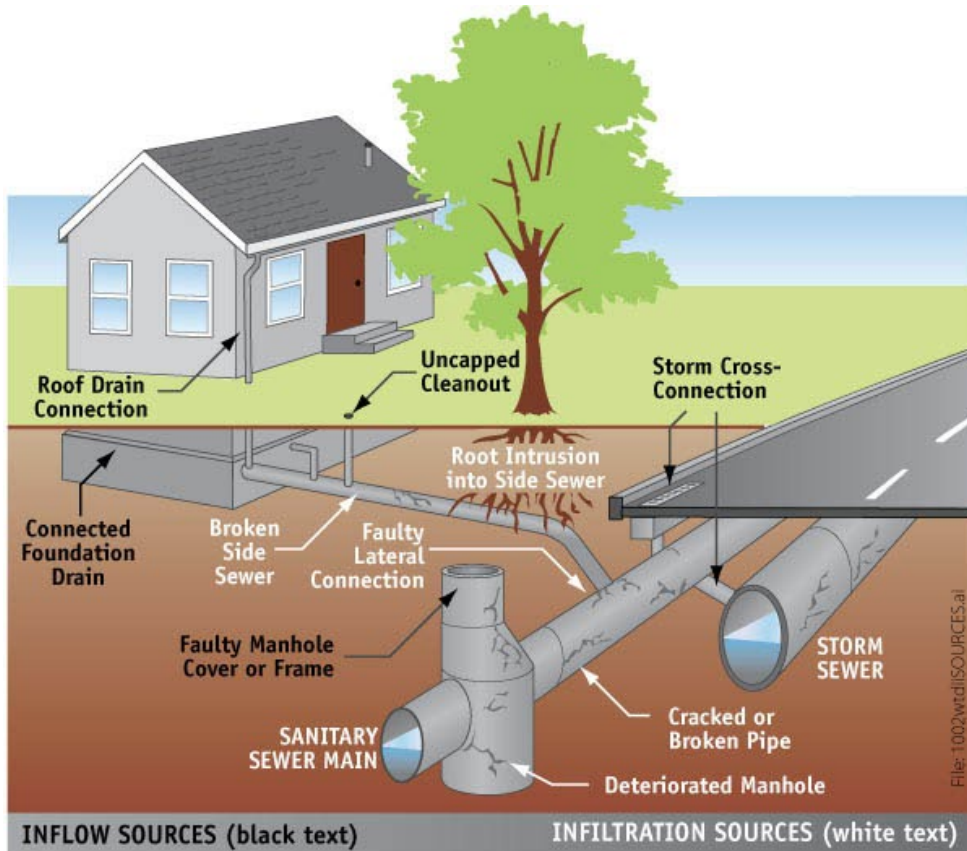
We promise to treat wastewater and recover natural resources to protect public health and the environment.



### Our Vision

Our communities will have clean waterways and reliable water resources for generations to come.

# How is the sanitary sewer system supposed to work?



# What is a Sanitary Sewer Overflow?

## EPA - When the sanitary sewer system releases raw sewage

### Causes for SSO's

- Capacity – Weather Related
- Aging Infrastructure
- Maintenance – Debris
- Maintenance – Grease
- 3rd Party
- Damaged by Others
- Other
- Power Outage
- Power Outage – (Storm Event)

*Generally, SSOs that can be prevented to some degree*



## Capacity Related Sanitary Sewer Overflows (SSOs)

Year	Total # of SSOs	Total Volume Of SSOs (gal)	Volume for Capacity Related SSOs (Gals)	# of Capacity Related SSOs	Named Storm
FY2018	20	1,006,196	134,886	10	None
FY2019	14	1,366,725	72,775	8	None
FY2020	17	277,521	16,530	2	None
FY2021	44	37,918,968	8,371,781	30	Remnants of Isaias & Sally
FY2022	10	768,133	0	0	TS Elsa
<b>FY2023</b>	<b>8</b>	<b>2,637,860*</b>	<b>18,510</b>	<b>3</b>	<b>Post-tropical cyclone Ian</b>

**FY 23 - Conveyed 55 billion gallons  
Total volume treated 99.995%**



\*2.5 of the 2.6 million gallon of SSOs was due to a dredge spud striking our force main

# EPA's Integrated Planning Framework

*Integrated planning is a process for municipalities to **achieve clean water and human health goals** while addressing aging wastewater and stormwater infrastructure, changing population and rainfall patterns, and **competing priorities for funding**.*

- Communities have limited resources – Prioritization!
- One water mindset
- Requires stakeholder collaboration
- Innovative solutions





# HRSD's Integrated Plan – Approved Feb 2022

2021 2022 2023 2024 **2025** 2026 2027 2028 2029 **2030** 2031 **2032** 2033 2034 2035 2036 2037 2038 2039 **2040 - 2043**

\$700M Phase 1  
(MOM Program),  
Rehab Action Plan



**Adaptive Mgt**

\$208M High Priority 1

**-47%**  
SSO

\$202M High Priority 2

**-69%**  
SSO

**swift**

**>\$1B**

Aquifer Replenishment Program (ARP)

\$10M Microbial Source Tracking

> \$10M Microbial Source Tracking

\$2M Post Construction Monitoring

**HRSD**

## Management, Operations, and Maintenance (MOM) Program

**Purpose – Ensures the wastewater system is proactively maintained for efficient operations**

- HRSD's MOM Program approved by EPA/DEQ in 2011
- Updated in 2021
- Ongoing regular review and updates
- Performance measures are continuing to be tracked to evaluate the effectiveness of the programs

# Consent Decree Performance Measures Review - Targets Met

## Year-over-Year Performance Summary

Metric	Target	FY-12 Actual	FY-13 Actual	FY-14 Actual	FY-15 Actual	FY-16 Actual	FY-17 Actual	FY-18 Actual	FY-19 Actual	FY-20 Actual	FY-21 Actual	FY-22 Actual	FY-23 Actual	
Pump Station Annual PM	81	84	83	83	84	85	87	89	85	82	83	89	91	✓
Back-up Generator Annual PM	55	112	81	121	129	129	121	89	85	112	118	128	137	✓
Force Main Air Vent PM	1,550	3,096	3,274	3,304	3,486	3,327	3,940	1,881	3,771	3,856	3,547	3,428	3,897	✓
Non-Invasive Force Main Inspection (LF)	2,400	15,098	2,800	2,562	4,355	2,562	6,375	5,000	3,300	2,400	3,900	2,400	2,500	✓
Gravity Sewer Inspection (LF)	39,600	72,730	98,185	81,841	89,757	71,595	94,009	40,307	55,394	45,459	40,148	42,187	42,308	✓
Gravity Sewer Cleaning (LF)	26,400	234,463	207,724	194,838	208,059	190,160	203,206	57,025	141,999	167,353	129,117	110,200	165,588	✓

## Rehabilitation Action Plan – Phase 2 Underway

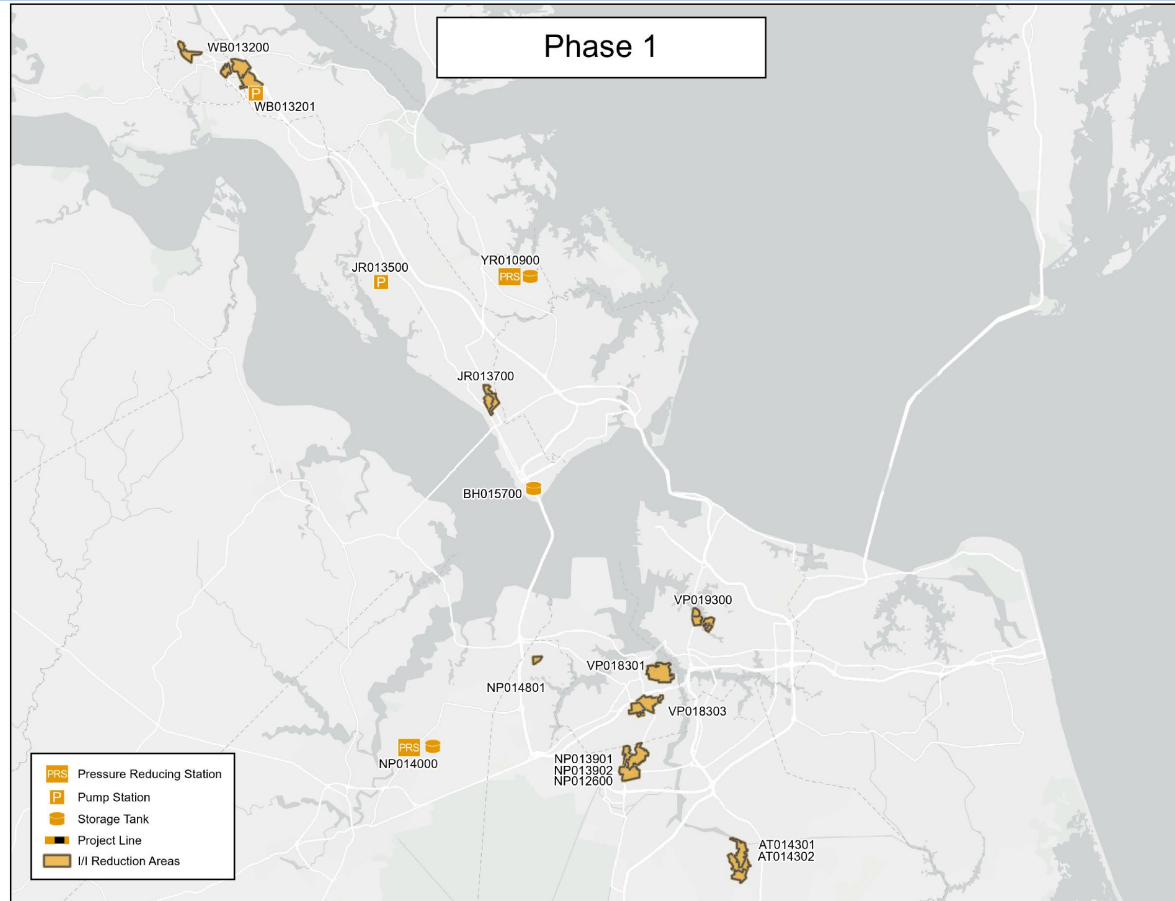
- Addresses defects identified in Consent Decree Condition Assessment Program (CAP)
- EPA/DEQ approved the plan in May 2015
- \$183M (2013 estimate) of required infrastructure improvements - gravity mains, force mains, pump stations
- **Program Cost through FY23 is \$366M**
  - Phase 0 - Complete
  - Phase 1 (May 2021) – Complete
  - **Phase 2 (May 2025) – 42% in construction or complete**



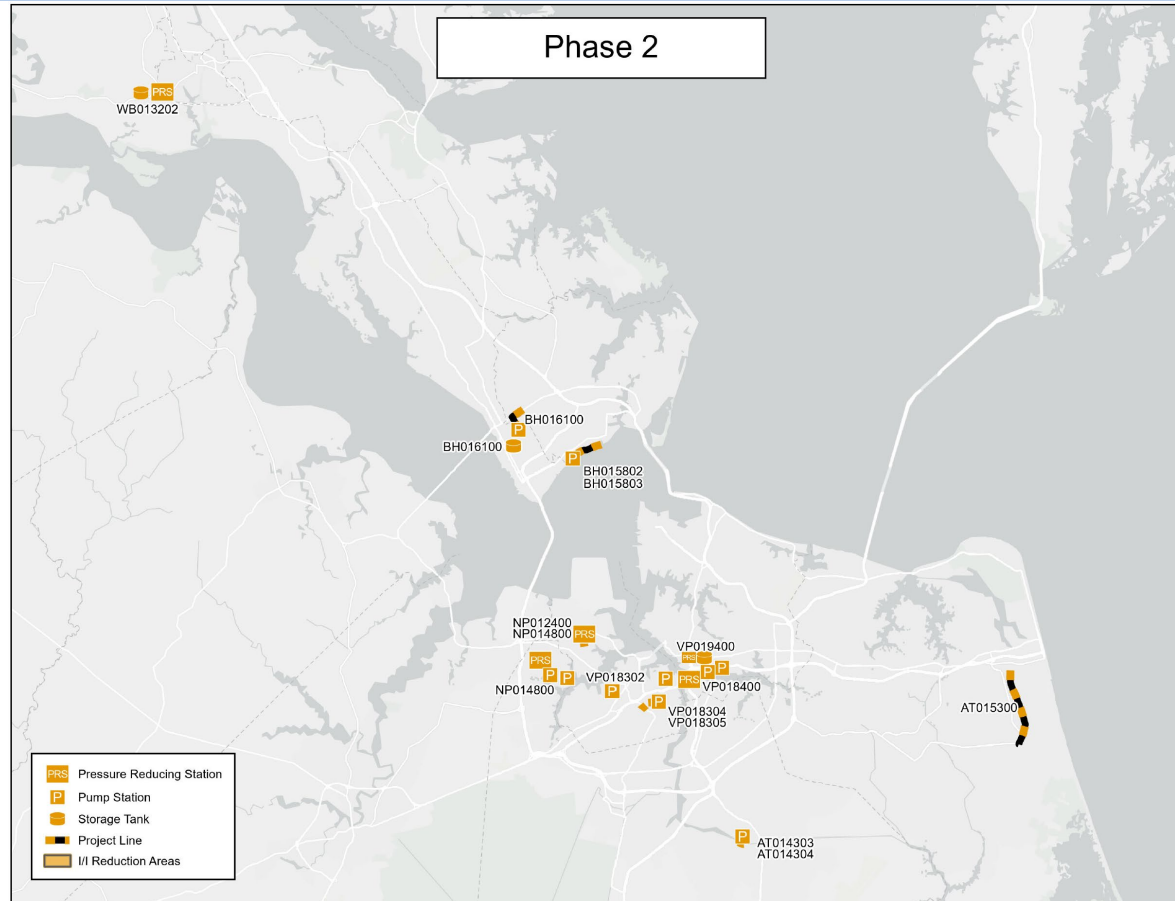
## Proposed 6<sup>th</sup> CD Modification (Pending Agency Signatures)

- Streamlines historic lab data purging process
- Extends completion deadlines for select Rehab Action Plan Phase 2 projects due to COVID and supply chain issues
- Expands proximity for investigating force mains near drinking water supply (500 ft to 2,500 ft)
- Exchanges several High Priority Project elements between Round 1 and Round 2

# High Priority Project Areas Phase 1



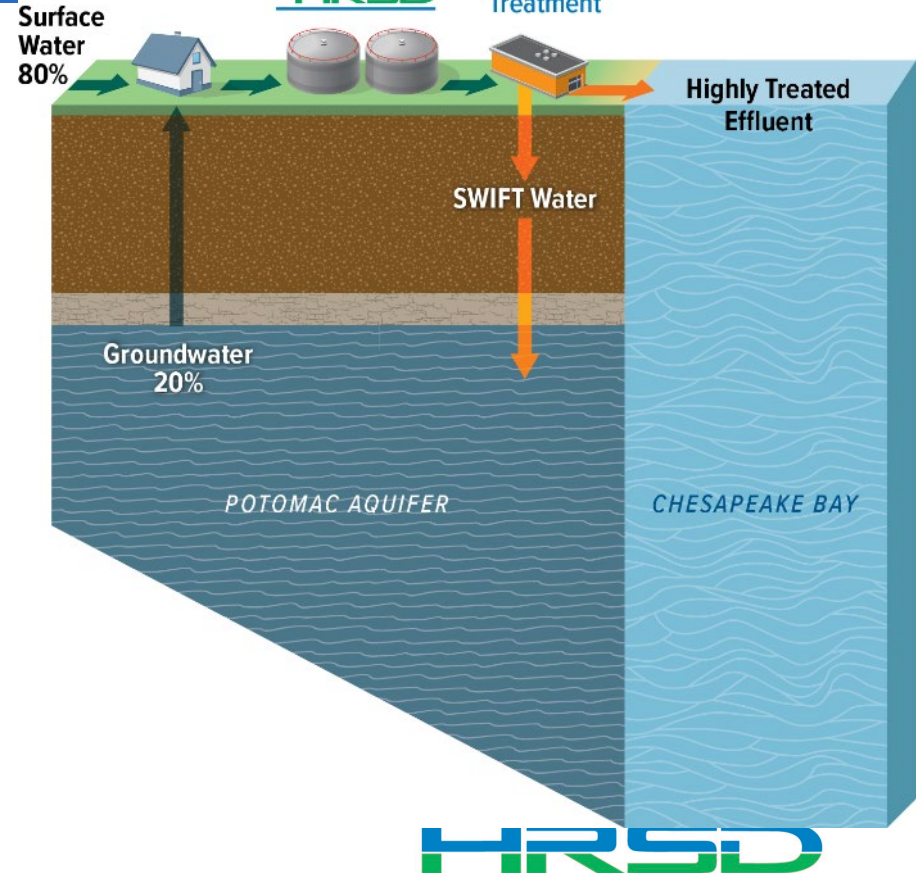
## High Priority Project Areas Phase 2



## SWIFT water that meets drinking water standards:

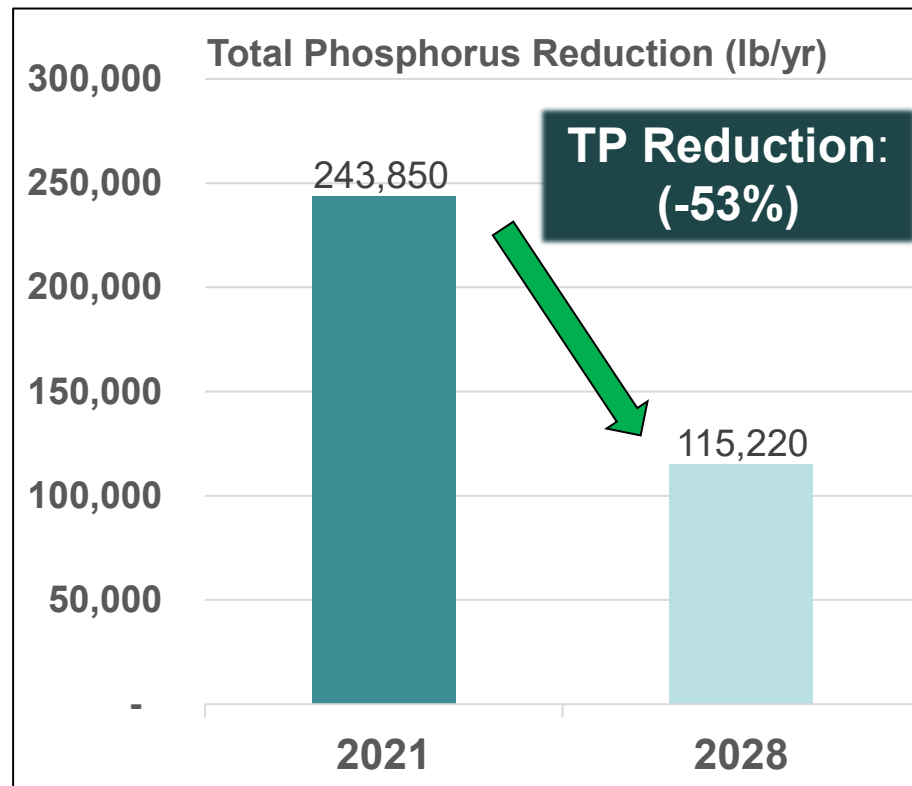
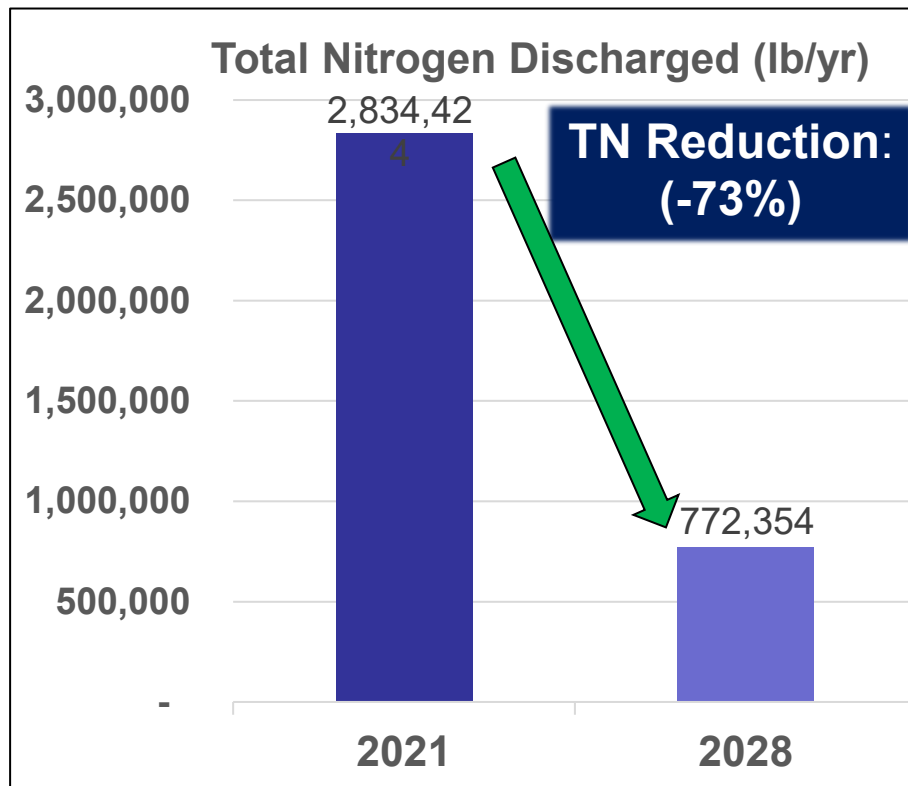
- Reduce nutrient discharge
- Sustainable groundwater supply
- Reduce land subsidence
- Protect from saltwater contamination

[www.swiftva.com](http://www.swiftva.com)





# Significant Reduction in Nutrients Discharged by 2028 – Lower James River Basin



## Microbial Source Tracking – Find and Fix

- Pinpoint sources of bacteria impairments
- Uses DNA markers to determine if it's a human source
- HRSD/locality partners track human signals back to source
- Targeted approach to find and fix chronic (high benefit) problems

### **The Virginian-Pilot**


They're like "CSI" detectives. But, for these scientists, the suspect usually is sewage.



- Periodic meetings of Capacity Team
- Monthly Directors of Utilities meetings
- HRSD providing GIS, flow, pressure and rainfall data to Localities
- Ad hoc coordination of bacteria source tracking program

# Regional Wet Weather Capacity Policy

- Policy merges elements of the CD, CO, and MOA to create a consistent “coordinated regional approach to providing and maintaining regional wet weather capacity”
- Approved by Utility Directors (Oct. 5, 2022)
- Adopted by HRSD Commission (Oct. 25, 2022)
- Available at <https://www.hrsd.com/commission-adopted-policies>

COMMISSION ADOPTED POLICY Regional Wet Weather Capacity			
Adopted:	November 22, 2022	Revised:	N/A
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1.0 **Purpose and Need**

The Regional Wet Weather Capacity Policy supports the identification, understanding, and resolution of sanitary sewer overflows occurring within the Regional Sanitary Sewer System consistent with the Federal Consent Decree, State Consent Order, and Locality Memorandum of Agreement.

2.0 **Definitions**

*Capacity Deficiency:* SSO or surcharge condition within 18" of the manhole rim resulting from rainfall-driven wet weather inflow and infiltration and/or high tides and flooding.

*Capacity-Weather Related SSO:* Overflow caused by a lack of available capacity in the pipe, pump station or downstream infrastructure caused by infiltration and/or inflow due to rainfall, antecedent rainfall, and/or high tides and flooding.

*Collection System:* A network of pipes, manholes, and pumping stations to convey sewage from the point that individual properties connect to public sewer system. Sewer service laterals on private property are not included.

*Flow Acceptance:* The process for reviewing and approving proposed connections, or modifications to existing connections, to the sanitary sewer system.

*High Priority Project (or HPP):* Capital projects identified to satisfy the wet weather capacity requirements of the Federal Consent Decree.

*HRSD Service Area:* The area of sewer service that is defined through coordination with the localities that HRSD serves. The existing Service Area boundaries can be found on the HRSD website.

*Localities:* Cities, Counties, and Towns within the HRSD Service Area.

*Metro Area:* Area encompassing the following localities: Cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg; the Counties of Gloucester, Isle of Wight, James City, and York; and the Town of Smithfield.

*MOM Program:* Management, operations, and maintenance program



## Public Participation

- HRSD's website is maintained with all Integrated Plan related documents
- Annual public informational meeting is held each January
- Annual newsletter published in February of each year
- When SSOs of significant impact occur
  - Focused public outreach
  - News releases
  - Social Media, including NextDoor postings to communities of impact
- Project specific open house meetings as each construction project is kicked off
- Project specific construction progress details maintained on our website
- Presentations to civic, business and community groups

- Long term trend in Inflow and Infiltration
  - Sea level rise and recurrent flooding
- Magnitude and spatial patterns of growth
- Future of numerous major DoD facilities
- Economic vitality, inflation and household income and employment levels

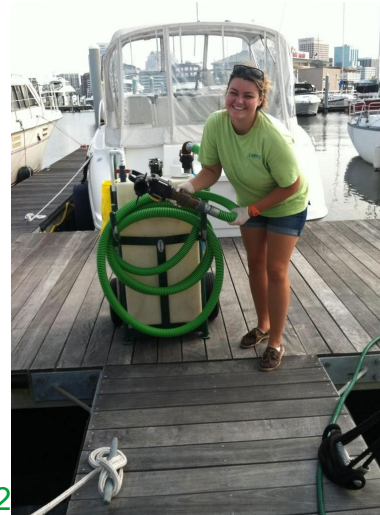
## Steps Citizens Can Take to Protect Receiving Waters

- Report Sanitary Sewer Overflows – Call your local utility department
- Reduce storm water runoff by using rain barrels, rain gardens and establishing a buffer
- Limit fertilizer and other lawn chemical applications – use natural products like compost



## Steps Citizens Can Take to Protect Receiving Waters

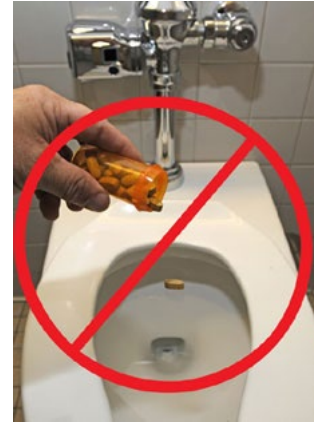
- Pick up animal waste
- Use our FREE boater pump out and support “No Dumping”





## Steps Citizens Can Take to Protect Receiving Waters

- Practice proper disposal
  - Don't flush pharmaceuticals
    - Crush solid medications or dissolve them in water and mix with kitty litter or another substance that will make the drug unsuitable for human or animal consumption
    - Place back in bottle and throw away
  - Don't put food waste in the garbage disposal
  - Capture kitchen grease in a can, freeze it and throw it away



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## Summary of Regulatory Status

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- Quarterly, semi-annual and annual reports have been submitted on-time
- MOM performance measures met
- Rehabilitation Action Plan – requesting minor changes
- Rehabilitation Action Plan and High Priority Program Projects in progress
- 6<sup>th</sup> Amendment pending Agency signatures
- James River SWIFT is under construction
- Nansemond SWIFT is under design
- Microbial Source Tracking is ongoing

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# Questions?

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