



**Water Is Our Way Of Life**



**We Want Future Generations To  
Inherit Clean Waterways**



**That's Why HRSD Works So Hard  
To Protect It**

**2023 EPA Integrated Plan Annual Information Meeting**

January 24, 2022

- Overview of Consent Decree/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 of the Commonwealth of Virginia



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 is over 5,000 square miles*



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



### Mission

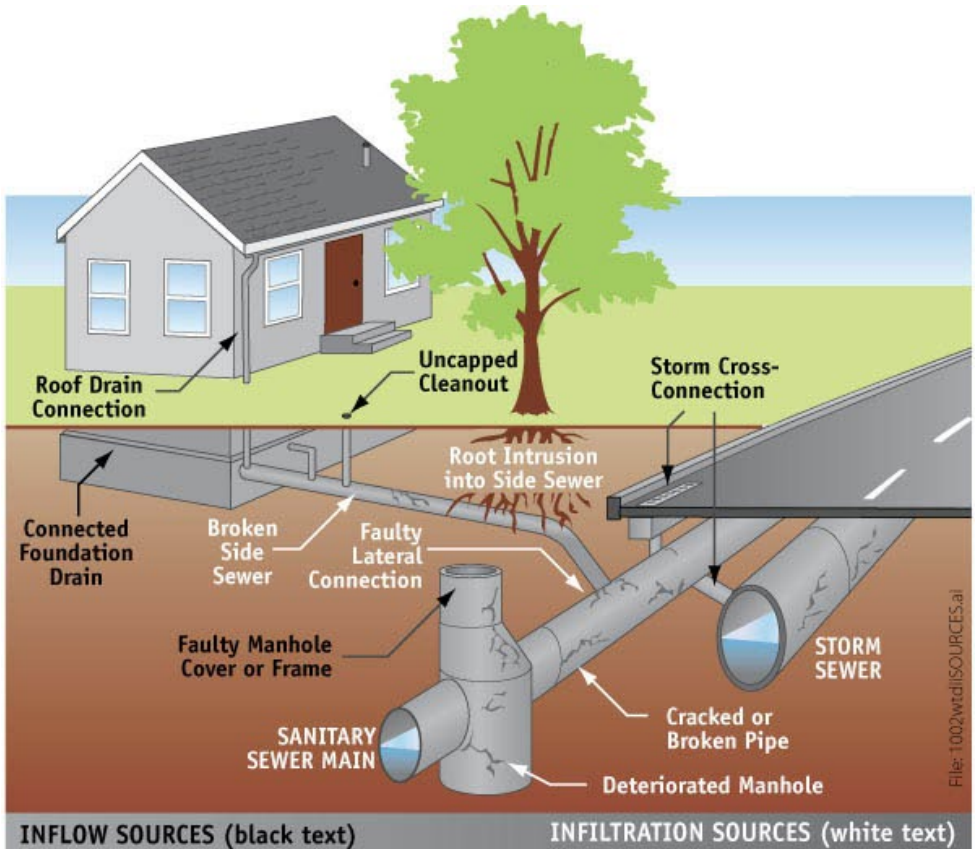
We protect public health and the waters of Hampton Roads by treating wastewater effectively.



### Vision

Future generations will inherit clean waterways and be able to keep them clean.

# How does the sanitary sewer system work?



# What is a Sanitary Sewer Overflow?

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

## **Causes for SSO's**

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



## Objective of the Consent Decree/EPA Integrated Plan

*“WHEREAS, this Fifth Amendment to the Consent Decree furthers **the objective of the Clean Water Act to minimize or eliminate the discharge of pollutants to navigable waters** by requiring that the Hampton Roads Sanitation District implement measures toward ensuring that the Regional Sanitary Sewer System and HRSD’s Sewage Treatment Plants have **adequate capacity to convey and treat wet weather sewer flows** within the Hampton Roads Region”*

### **EPA INTEGRATED PLANNING**

*“...prioritize capital investments and achieve our human health and water quality objectives.”*

# Evolution of HRSD's Integrated Plan (IP)

2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022

EPA  
308

Developed \$1.8B Regional Wet Weather Management Plan – Regionalized Approach

*Aquifer  
Replenishment  
Program (ARP)*



Feasibility

Pilot



Design

Alternatives  
Analysis

4<sup>th</sup> Amendment

Locality Trading  
Agreement

Integrated Plan  
Development

5<sup>th</sup> Amendment

IP SIGNED Feb 8, 2022





# HRSD's Integrated Plan

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

\$700M Phase 1,  
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



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

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**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	
Pump Station Annual PM	81	84	83	83	84	85	87	89	85	82	83	89	✔
Back-up Generator Annual PM	55	112	81	121	129	129	121	89	85	112	118	128	✔
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	✔
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	✔
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	✔
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	✔

## Capacity Related SSOs

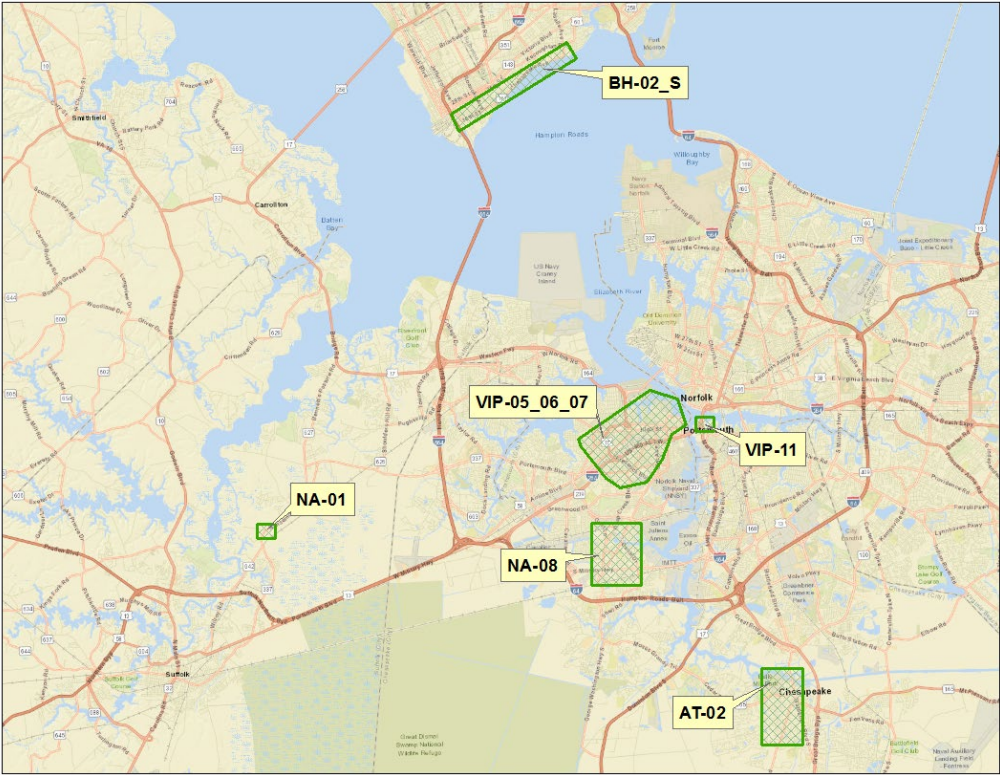
Year	Total # of SSOs	Total Volume Of SSOs (gal)	Volume for Capacity (Gals)	# of Capacity SSOs	Named Storm
FY2018	20	1,006,196	134,886	10	None
FY2019	14	1,366,725	72,775	8	None
FY2020	17	277,521	16,530	2	None
FY2021	44	37,918,968	8,371,781	30	Remnants of Isaias & Sally
<b>FY2022</b>	<b>10</b>	<b>768,133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

FY 22 - Conveyed 49.3 billion gallons  
**Total volume lost 0.00156%**

## 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 FY22 is \$332M**
  - Phase 0 - Complete
  - Phase 1 (5/2021) – Complete
  - **Phase 2 (5/2025) – 28% in construction or complete**

# High Priority Project Areas Phase 1



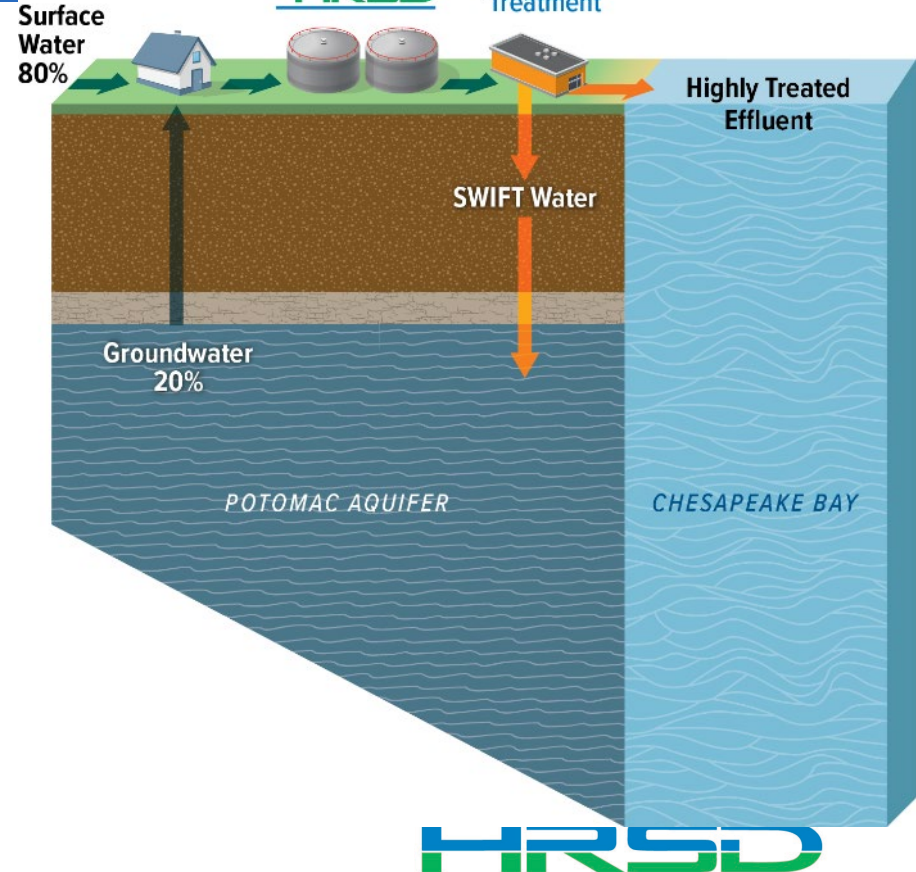
# High Priority Project Areas Phase 2



## 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)





## 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

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## Public Participation

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- HRSD's website is maintained with all Integrated Plan related documents
- Annual newsletter published in February of each year
- Annual public informational is held each January
- 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 (Looming recession)
- Regional environmental and public health priorities (COVID)

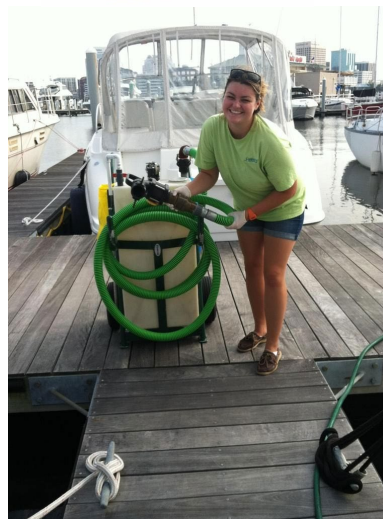
## Steps Citizens Can Take to Protect Receiving Waters

- 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



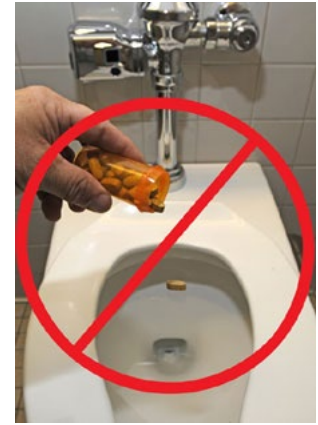
## Steps Citizens Can Take to Protect Receiving Waters

- 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
- James River SWIFT is under design/construction
- Nansemond SWIFT is under design
- Microbial Source Tracking is ongoing



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Questions?

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