

Annual Update

Integrated Plan/Regional Wet Weather Management Plan (IP/RWWMP)

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Affiliate Information

Visit askhrgreen.org for information on everything green in Hampton Roads.

Visit elizabethriver.org to learn how to make restoration a reality.




HRSD by the Numbers

HRSD's Consumer Annual Report covers fiscal year 2024 beginning on July 1, 2023 - June 30, 2024.

The report details information about our financial performance well as our continued innovation and infrastructure improvements.

At HRSD, we promise to treat wastewater and recover natural resources to protect public health and the environment. Our vision is that our communities will have clean waterways and reliable water resources for generations to come.

You can view the full Annual Report [here](#).

| | | |
|---|--|--|
| <p>"How much are you charging me in Fiscal Year 2025?"</p> <p>Average cost per gallon: \$0.01</p> <p>"Where does my money go?"</p> <p>Out of every dollar, \$0.24 goes to our employees, \$0.25 goes to our Operating Expenses, and \$0.52 goes to our Infrastructure Projects.</p> <p>24% to Employees, 24% to Operation, 52% to Infrastructure</p> | <p>"What is the 2025 Infrastructure Budget?"</p> <p>\$795.1 million</p> <p>"What is the 10-year Infrastructure Budget?"</p> <p>\$3.9 billion</p> <p>"How much debt does HRSD have?"</p> <p>Total outstanding indebtedness (billion, as of June 2024): \$1.4</p> <p>Debt per account (June 2024): \$2,905</p> | <p>"How much money will you borrow over the next 10 years?"</p> <p>\$1.7 billion representing 44% of the 10-year infrastructure budget</p> <p>"Where does your money come from?"</p> <p>96% Revenues from customer bills and only</p> <p>1% Revenues from new connections (economic growth)</p> |
| <p>"How many HRSD employees are there?"</p> <p>948 full-time employees</p> | <p>"How many service connections do you have?"</p> <ul style="list-style-type: none"> 488,000 service connections serving 1.5 million people (20% of Virginia's population) Eight major plants and six smaller treatment plants with a combined 225 million gallons per day capacity |  |
| <p>Percent of HRSD's Infrastructure Improvement Program that is driven by federal and state mandates?</p> <p>73%</p> | <p>"How much infrastructure is HRSD investing in the Region?"</p> <p>\$3.9 billion over the next 10 years</p> <p>\$7,951 per service connection over the next 10 years</p> <p>\$6.4 billion over the next 20 years</p> | <p>Removed more than 200,000,000 lbs. of pollutants from wastewater, keeping it out of local waterways.</p> <p>Kept 8.3 million gallons of grease waste from entering the sewer system, minimizing grease-related sanitary sewer overflows.</p> |
| <p>HRSD's research vessel and crew logged over 1,850 miles of continuous monitoring in the lower James River, documenting more than 360,000 water quality parameters critical for detecting algal bloom formation.</p> | <p>20,113 gallons of sewage pumped at no cost from recreational vessels and kept out of our local waterways. Additionally, we had 1,269 boat sewage pump outs and 204 contacts with boaters to present information on the importance of utilizing a pump out to empty the waste from their holding tanks.</p> | <p>Our Central Environmental Laboratory analyzed more than 77,870 samples, completing 235,412 analyses.</p> |

Spotlight on 4 Innovative HRSD Engineering Projects

Written by Lacie Wever, HRSD Community Educator



Engineering is the cornerstone of human progress, continually propelling us forward and creating innovative solutions to problems around the world. At HRSD, our Engineering Department is responsible for the planning, design, construction, and lifecycle monitoring and analysis of infrastructure assets to meet the near term needs and long term goals of HRSD.

During Engineers Week this year, HRSD followed the theme “Welcome to the Future”, to highlight 4 innovative HRSD Engineering projects shaping the future in Hampton Roads.

1. Elbow Road Pressure Reducing Station (PRS)

The Elbow Road PRS is designed to help reduce sanitary sewer overflows. This PRS is engineered to use pumps to control pressures in the sewer system. Engineers had to consider the best type of pumps needed for the system, the best size of pump, how large storms would impact the sewer system, and even the design/aesthetics so it can blend in with the surrounding area.



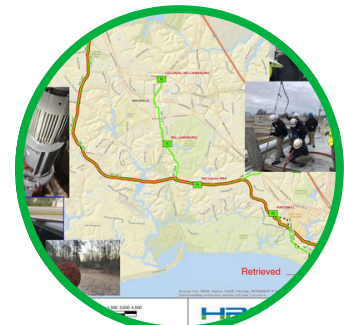
3. Condition Assessment Technologies

Lifecycle monitoring is a crucial component to maintaining wastewater infrastructure and reducing possible sanitary sewer overflows into the Chesapeake Bay. The North Trunk Interceptor Force Main system, which conveys all the City of Williamsburg flow as well as most of the James City County flow to the Williamsburg Treatment Plant, was recently investigated. Portions of this main are 50 years old! Using assessment technology called the Nautilus System, Engineers determine a risk score to help prioritize repairs needed in the infrastructure.



2. Boat Harbor Treatment Plant Conversion and Transmission

HRSD is closing the Boat Harbor Treatment Plant to further reduce nutrients discharged into the James River, helping to support local water quality and Chesapeake Bay restoration efforts. A new pumping station facility will be constructed at the Boat Harbor location and wastewater will be pumped through a pipe to HRSD’s Nansemond Treatment Plant in Suffolk. One of the most notable things about this project is the record-breaking pipe installation under the Newport News shipping Channel!



4. Using Granular Activated Carbon To Reduce PFAS in Water

PFAS is a man-made compound that has created water quality challenges facing the nation. To address this challenge, HRSD uses granular activated carbon (GAC) at our SWIFT Research Facility to manage PFAS in finished waters. It will also be used at future full-scale SWIFT Facilities. As demand for GAC grows to meet regulatory developments around PFAS, HRSD Engineers have conducted a GAC reactivation study and cost-benefit analysis to understand the benefits or drawbacks of onsite GAC reactivation.

On the Scene of a 31,000-ft. Pipe Installation Under the James River

Written by Shawn Maxfield, HRSD Public Information Specialist



Imagine trying to install a pipe underwater!

As part of the Boat Harbor Treatment Plant Conversion and Transmission project, Garney Construction took on this challenge. This suite of projects includes three key parts on the peninsula: the Boat Harbor Pump Station Conversion, the Boat Harbor Underwater Transmission Pipe Installation, and the Boat Harbor Land Transmission Pipe Installation. In this blog, I am specifically diving into the Boat Harbor Underwater Transmission Pipe Installation.

On Monday, April 29, 2024, I had the pleasure of attending a boat tour to get a close-up view of the barges and 5,700 feet of fused pipeline that would be installed 168 feet under the Newport News shipping channel on May 1st.

To dig under the shipping channel, Garney Construction utilized a Horizontal Directional Drilling (HDD) method to create a hole for the pipe to be pulled through. They began by drilling an initial 12-inch diameter hole and then gradually enlarged the size until it was 54-inches. The HDD was performed from a temporary work platform located in the James River, just south of the Newport News shipping channel, to the northern shoreline. Pictured above, the pipe was propped up on the barge, marking the starting point of its journey under the shipping channel. The second barge (below) closely followed the first one, equipped with a crane that dug a trench in the water. I was surprised to see it mimic the process used on land by preparing a path for the pipe to be installed in a trench as it progressed towards the shore in Suffolk. I thought due to the water's movement from the tides, the trench wouldn't stay in place, but divers were sent down to ensure the trench remained.



Finally, the boat took us to get a view of the 5,700-foot-long fused pipe that was made by welding 108 sections of 53-foot-long pipes together on a barge in the river. Each fusion took 2 hours, and the crews worked around the clock. There was a white metal tip on one end (below) with a ring at the end that was hooked to a pipe through the 54-inch hole that was dug; this tip was floating in the water.

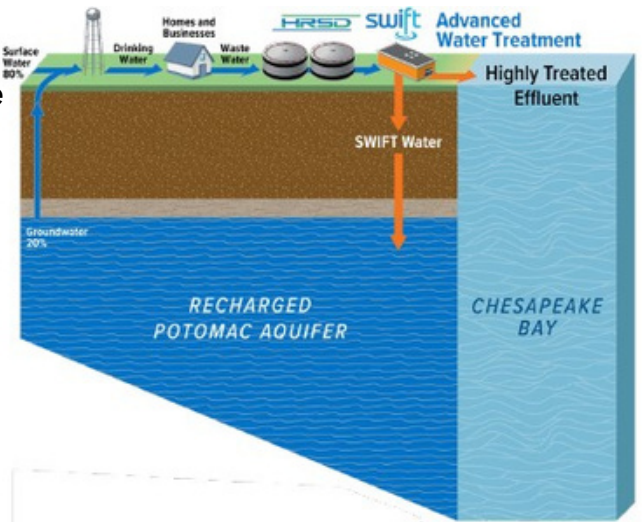
The other end (below), was propped up on a barge to prevent it from being filled with water. Ultimately, the 31,000-foot-long pipeline will transmit sewage from the Boat Harbor Pump Station across the James River to the Nansemond Treatment Plant for additional rounds of advanced treatment, further recharging the Potomac Aquifer. This undertaking is truly amazing.

The pipe was pulled through the hole in one continuous 22-hour operation that started on May 1, 2024, and finished on May 2, 2024. Garney Construction and HRSD are very thrilled about this record-breaking project. I am glad I had the opportunity to witness such an impressive process firsthand.

A special thanks to Rod Melvin for providing the great images! For more information on the project, please visit the project webpage at www.hrsd.com/boat-harbor-treatment-plant-conversion-and-transmission. For more information about recharging the Potomac Aquifer, please visit www.hrsd.com/swift.

SWIFT and Nutrient Reduction

SWIFT is an innovative water treatment project in eastern Virginia designed to further protect the region's environment, enhance the sustainability of the region's long-term groundwater supply and help address environmental pressures such as Chesapeake Bay restoration, sea level rise and saltwater intrusion.



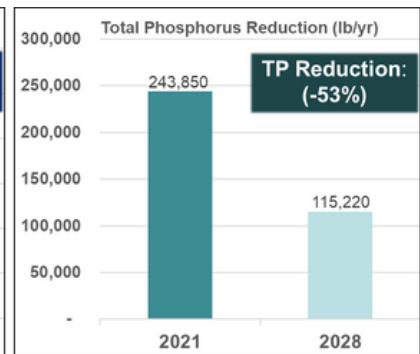
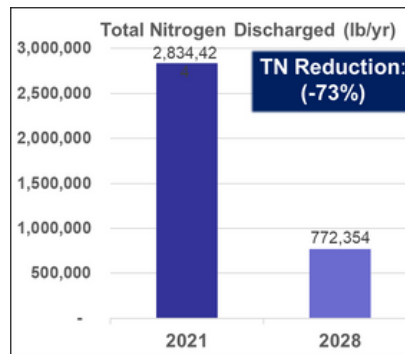
SWIFT:

- reduces nutrient discharges
- provides a sustainable groundwater supply
- reduces land subsidence
- protects the aquifer from saltwater contamination

Learn more about why SWIFT matters [here](#).

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

The James River SWIFT facility is expected to be online in 2026 and will be able to replenish the Potomac aquifer with up to 16 million gallons of drinking-water quality SWIFT Water® per day using advanced treatment processes. The project also includes advanced nutrient reduction improvements for the James River Treatment Plant. Track construction updates on this project [here](#).



HRSD Program Highlight: Microbial Source Tracking (MST)

HRSD is one of the first entities in the country to use Microbial Source Tracking (MST). Through MST, HRSD is able to pinpoint sources of bacteria impairments. We use DNA markers to determine if the bacterial impairment is due to human waste or something else such as bird or dog poop. We are able to partner with localities and track the human signals back to the source! This program helps us to efficiently find SSOs. You can think of our MST team as "CSI" detectives. For these scientists however, the suspect is usually sewage.



By the Numbers: FY 2024 HRSD SSOs

HRSD Capacity Related SSO Summary

A Sanitary Sewer Overflow (SSO) is a release of untreated sanitary sewage, also referred to as wastewater, into the environment. HRSD is required to track all SSOs within the HRSD system. HRSD officially reports SSOs through the Department of Environmental Quality's (DEQ) Sanitary Sewer Overflow Reporting System (SSORS) and maintains an internal database.

HRSD takes environmental protection very seriously and our record of permit compliance is unparalleled among wastewater treatment agencies in the United States. HRSD has won numerous awards related to permit compliance.

The pipelines and pumps that convey wastewater to treatment plants are designed to carry the daily volume of wastewater generated for the area. The design includes extra capacity for some precipitation entering the sanitary sewer system; the sanitary sewer system is not designed to accommodate excessive precipitation entering the system. Excessive precipitation entering the sanitary sewer system is called "infiltration and inflow" (I&I). I&I is the cause of most SSO events in the HRSD system. Due to the impact of wet weather and storms, the number of SSOs varies dramatically from year to year based on the weather.



Causes for SSOs

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

Generally, SSOs that can be prevented to some degree



FY 2024- Capacity Related Sanitary Sewer Overflows

| Year | Total # of SSOs | Total Volume Of SSOs (gal) | Volume for Capacity Related SSOs (Gals) | # of Capacity Related SSOs | Named Storm/Comments |
|--------|-----------------|----------------------------|---|----------------------------|--|
| 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 |
| FY2023 | 8 | 2,637,860* | 18,510 | 3 | Post-tropical cyclone Ian |
| FY2024 | 19 | 1,330,325 | 962,047 | 10 | 2 nd Wettest Mar/6 th Wettest Summer/2 nd Wettest Dec |



FY 24 – Conveyed & Treated 53 billion gallons
Total volume treated 99.998%

Learn more about HRSD sanitary sewer overflows [here](#).

How Can You Help Protect Our Waterways?

Public Participation Opportunities



PUBLIC PARTICIPATION OPPORTUNITIES

- Viewing [Integrated Plan Documents](#)
- [HRSD News Releases](#)
- Social Media
 - [Facebook](#)
 - [LinkedIn](#)
 - [NextDoor](#)
 - [X](#)
- Open House Meetings
- [Construction progress and updates](#)
- [Tours/presentations](#) for community groups

PREVENT SEWER OVERFLOWS BY FOLLOWING THESE "GOOD TO DO" STEPS

CATCH THE SCRAPS
Mealtime scraps don't belong in the drain so ditch the disposal. Catch food scraps in your sink with a strainer and toss them into the garbage or compost bin.

CAN THE GREASE
Pour used cooking grease into an empty, heat-safe container, such as a soup can, and allow it to cool. Once solidified, toss the can into the garbage.

SCRAPE THE PLATE
Before washing, wipe all pots, pans, dishes and cooking utensils with a paper towel to absorb grease and scrape food scraps into the garbage or compost bin.

Learn more at askhrgreen.org

PLEASE FLUSH RESPONSIBLY

Flushing your trash may block sewer pipes causing untreated wastewater to back up into your home and nearby waterways. It's not just a messy situation; it's a dangerous one for you and our waterways.

DON'T FLUSH THESE FREQUENT OFFENDERS

WIPES
Wipes clog pipes! Never flush disposable wipes down the commode.

PERSONAL HYGIENE PRODUCTS
Make sure your trash makes it into your wastebasket, not your wastewater. Dental floss, cotton balls/swabs and feminine hygiene products should always go in the trash.

MEDICATION
Once medication is dissolved in the water, there's no getting it out. Look for medication drop-off locations or destroy the medication and place it in the garbage.

CAT LITTER
Human waste belongs in the toilet, kitty's litter belongs in the garbage can.

PAPER TOWELS
Sturdy paper towels may be tough enough for cleaning, but they are too tough for our pipes. Toss them in the garbage, don't flush them.

DID YOU KNOW?

Did you know nature also helps to keep our waterways clean? Our waterways contain a number of microorganisms which naturally break down waste! When there is an SSO, our data consistently shows that once the SSO has been fixed, the dissolved oxygen and bacterial levels of the waterway return to normal in a few days. This is because breaking down waste is a part of nature's biological process!

Help protect our waterways by reporting suspected sanitary sewer overflows (SSOs)

Please call the number listed for your Locality if you observe an SSO.

| Locality | During Business Hours | After Business Hours |
|-------------------------------------|-----------------------|----------------------|
| Accomack County and Town of Accomac | 757-787-1468 | 757-824-0020 |
| Chesapeake Public Utilities | 757-382-2489 | 757-382-3550 |
| Chincoteague Public Works | 757-336-3366 | 757-336-3366 |
| Exmore Public Works | 757-442-3114 | 757-607-7188 |
| Gloucester Public Utilities | 804-693-4044 | 804-693-3890 |
| Hampton Public Works | 757-727-8311 | 757-727-8311 |
| Isle of Wight Public Utilities | 757-365-6284 | 757-357-2151 |
| James City Service Authority | 757-229-7421 | 757-566-0112 |
| Nassawadox | 757-875-7547 | 757-875-7547 |
| Newport News Public Works | 757-993-2311 | 757-234-4800 |
| Norfolk Public Utilities | 757-823-1000 | 757-823-1000 |
| Onancock Public Works | 757-787-3363 | 757-710-5863 |
| Poquoson Public Works | 757-868-3590 | 757-868-3501 |
| Portsmouth Public Utilities | 757-393-8561 | 757-393-8561 |
| Suffolk Public Utilities | 757-514-7000 | 757-514-7000 |
| Town of Smithfield | 757-365-4200 | 757-357-2151 |
| Virginia Beach Public Utilities | 757-385-1400 | 757-385-3111 |
| Williamsburg Public Works | 757-220-6140 | 757-220-2331 |
| York County Public Works | 757-890-3750 | 757-890-3373 |



HRSD SERVICE AREA MAP



Political subdivision of the Commonwealth of Virginia



Governing body: Governor-appointed commission



14th 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



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