

Sustainable Water Initiative for Tomorrow (SWIFT)



The Sustainable Water Initiative for Tomorrow (SWIFT) would add advanced treatment processes to several HRSD facilities to produce purified water that meets drinking water standards. The purified water would then be treated to match the existing groundwater chemistry and added to the Potomac Aquifer, the primary source of groundwater throughout eastern Virginia. This would achieve several important benefits that will help ensure future generations inherit clean and abundant waterways.

Q: What benefits could SWIFT offer?

SWIFT could: *help the Chesapeake Bay* by significantly reducing the amount of nutrients such as nitrogen and phosphorus that HRSD discharges to local waters; *provide a sustainable source of groundwater*, replenishing this depleted natural resource so groundwater is abundant for generations to come; and *reduce the rate at which land is sinking* in Hampton Roads, which would enhance the ability of the environment and our communities to adapt to rising seas.

Q: Why is HRSD considering SWIFT?

HRSD's mission is to protect public health and the waters of Hampton Roads by treating wastewater effectively. The residents of the HRSD service area send approximately 150 million gallons of wastewater to HRSD each day. HRSD cleans this water to exacting state-

regulated standards and returns it safely to area waterways. The highly treated water HRSD currently produces exceeds the water quality requirements of local waterways; with the addition of advanced treatment processes, HRSD can produce purified water that meets drinking water standards. HRSD is exploring ways to use that purified water to provide Hampton Roads and Virginia added environmental and societal benefits.

Q: How will you know the project is safe?

The quality of the water will be carefully and continuously monitored to ensure that it meets human health standards and that the aquifer is protected. The design and selection of treatment processes will be overseen by a technical advisory panel of leading experts on the engineering and science of water purification to ensure the best science is being applied.

HRSD is exploring ways to produce **purified water** to help the **Bay**, provide a source of **sustainable groundwater**, reduce the rate at which **land** is sinking and prevent **saltwater intrusion**.

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How far along is SWIFT?

This initiative is still in its exploratory phase. A room-scale pilot project is underway at HRSD's York River Treatment Plant to evaluate our ability to produce purified water. We are testing two technologies, Carbon-Based Advanced Water Treatment and Membrane-Based Advanced Water Treatment, to produce water that meets drinking water standards.

Has something like this been done before?

The technology HRSD is evaluating for use in SWIFT is tried, tested and has a proven track record of safety and effectiveness. It is in use across the country, the world and even here in Virginia, where it has been deployed for more than 30 years.

Is aquifer replenishment safe?

The purified water produced by SWIFT would be treated to match existing groundwater to ensure seamless integration into the aquifer. The uniform geology of the aquifer, permeable sand and gravel, is ideal for replenishment. The purified water could flow uninterrupted into the system rather than being forced through fissures and fractures in larger rocks. This significantly limits the risk of minor earth disturbances.

What is the projected timeline of the project?

No final decision will be made regarding this project until all processes are proven reliable and effective with appropriate testing and evaluation at HRSD facilities;

all local, state and federal regulatory requirements are met; and a comprehensive public input process has been conducted with all comments thoroughly addressed. The earliest the final approvals might be sought would be late 2018 or early 2019.

Who is reviewing this effort?

HRSD is in regular communication with experts and decision makers at the municipal, state and federal levels to gain their input and critical thinking. To date there have been no regulatory, public health or technical issues identified that would prevent this project from moving forward but more information is required before a final decision can be reached.

Will I get an opportunity to learn more and express my opinion on this project?

HRSD will be reaching out directly to the communities we serve to hear from our customers and other stakeholders. We are committed to providing transparency and opportunities for engagement throughout this process.

How will HRSD manage this investment in eastern Virginia's future?

HRSD believes the estimated \$1 billion cost of this initiative could be integrated with its plan of responsible investment in wastewater infrastructure over the next 20 years, without additional rate increases beyond what is currently planned.



The York River in Yorktown, Virginia