



HRSD

**HRSD's Integrated Plan
A Regional Collaboration
Success Story**

July 20, 2023

About Us



Population served: 1.9 million
14th Largest Wastewater Utility



Political Subdivision created in 1940
Serves 20 Cities and Counties



Combined wastewater treatment
capacity: 225 million gallons/day



Operate 8 major and 6 smaller treatment
plants and more than 100 pump stations



Separate Sanitary System with > 500 miles
of pipe



Service area is approx. 5,000 square miles



Hampton Roads Primary Environmental Regulatory Drivers

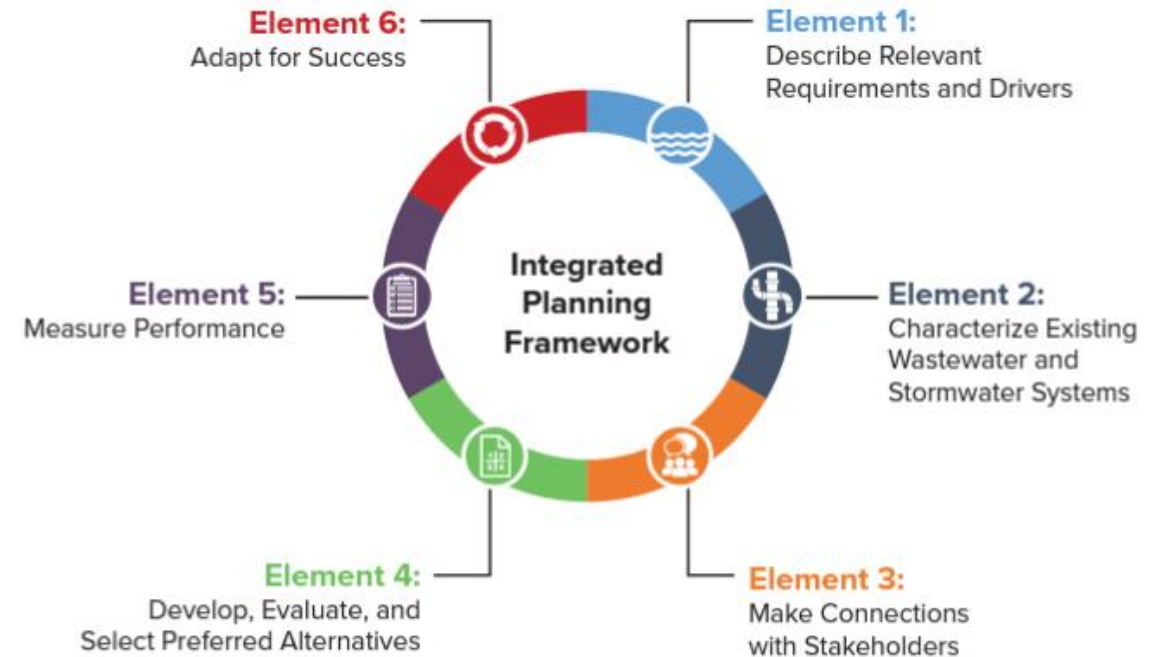
- Clean Water Act Compliance
 - For Sanitary Sewer Overflows (SSOs)
- Chesapeake Bay Restoration
 - Nutrient Reduction
 - Total Maximum Daily Load (TMDL) – “Pollution Diet”



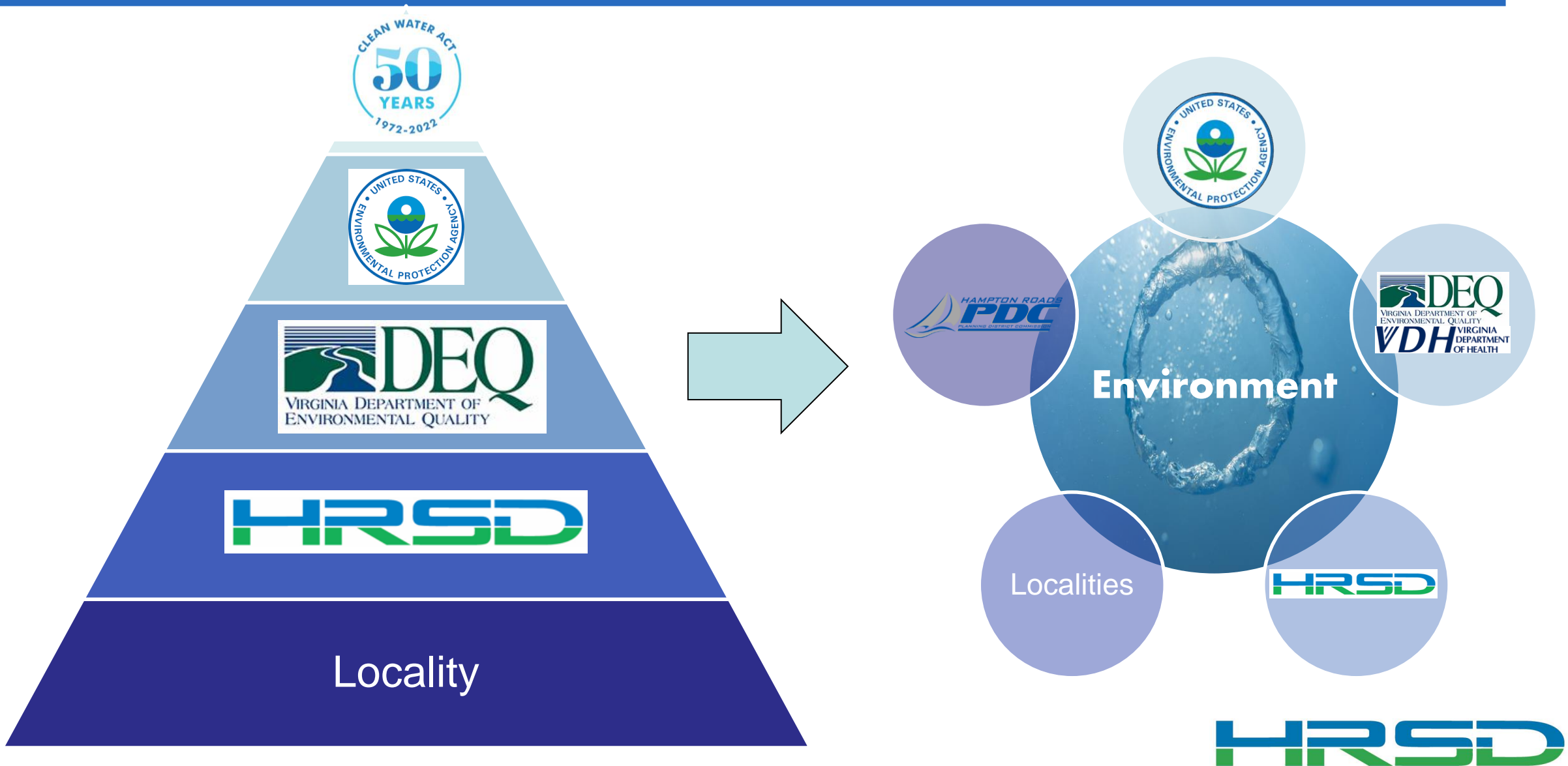
EPA's Integrated Planning Framework

*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**.*

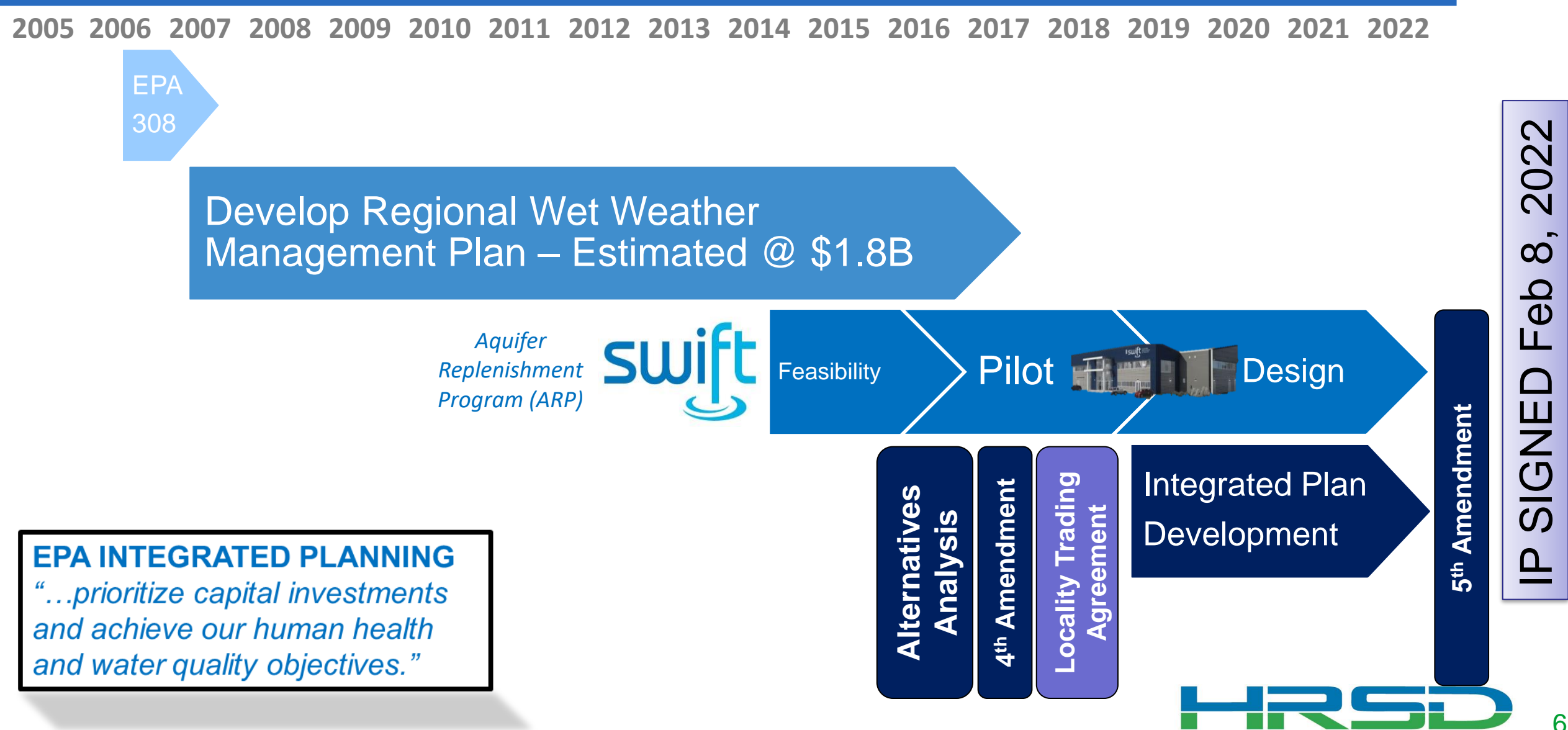
- Requires stakeholder collaboration
- One water mindset
- Innovative solutions
- Community have limited resources – Prioritization!



Collaborative Process through Integrated Planning



Evolution from EPA Consent Decree for Sanitary Sewer Overflows to an EPA Integrated Plan (IP)



HRSD's Integrated Plan – Dual Compliance

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

\$800M Phase 1,
Rehab Action Plan



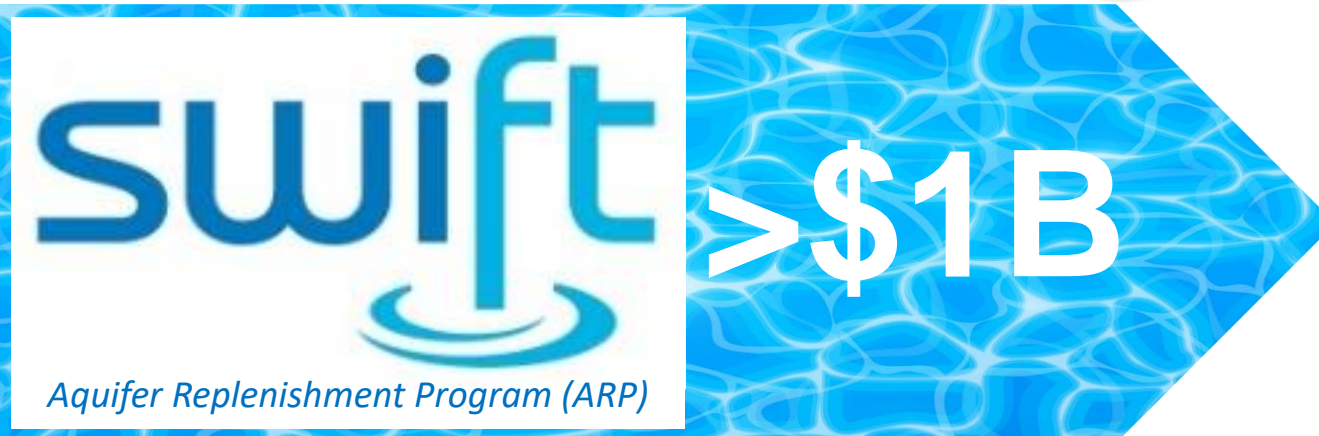
Adaptive Mgt

\$200M High Priority 1

**-47%
SSO**

\$205M High Priority 2

**-69%
SSO**



Aquifer Replenishment Program (ARP)

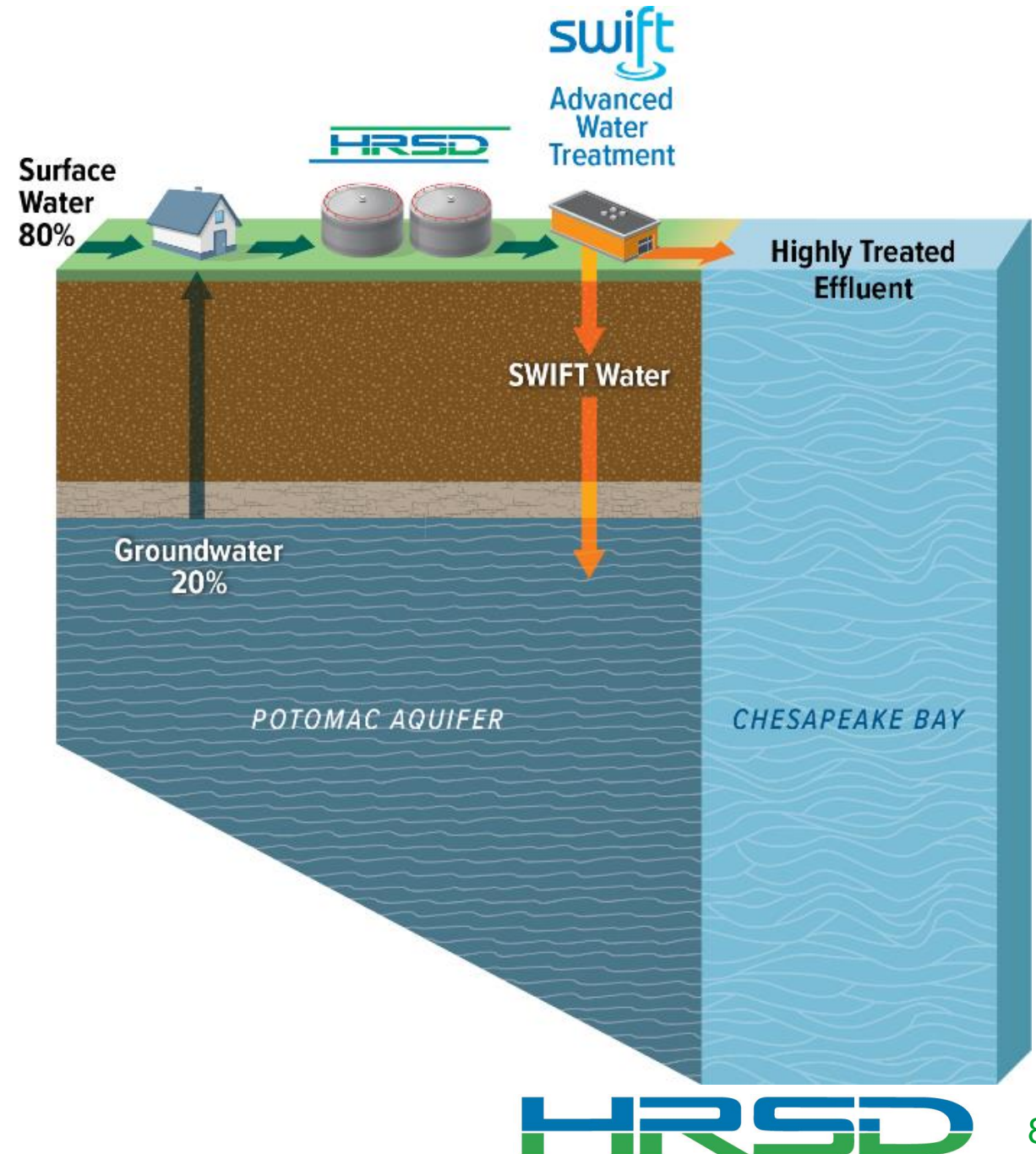
\$20M Microbial Source Tracking

\$2M Post Construction Monitoring

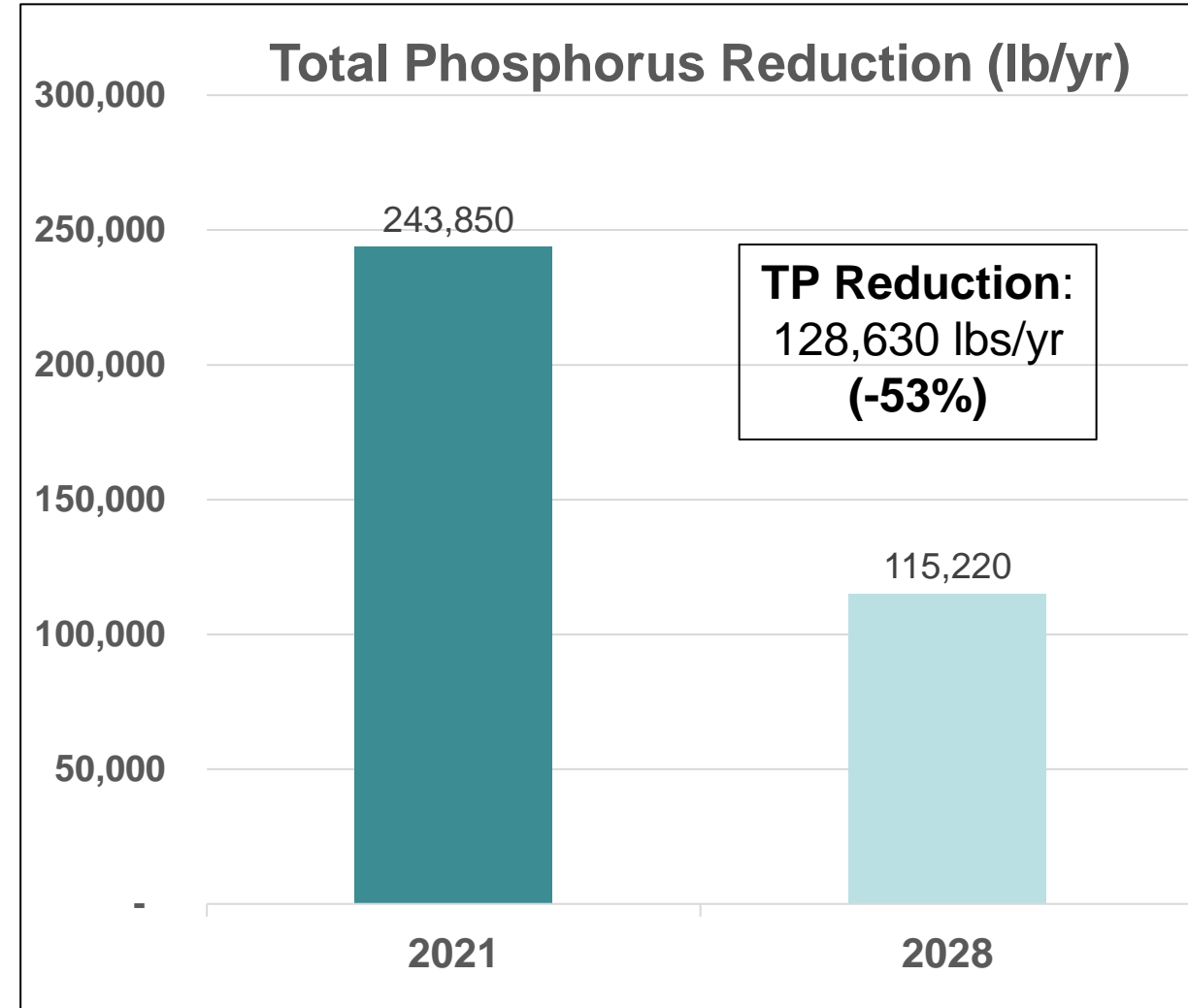
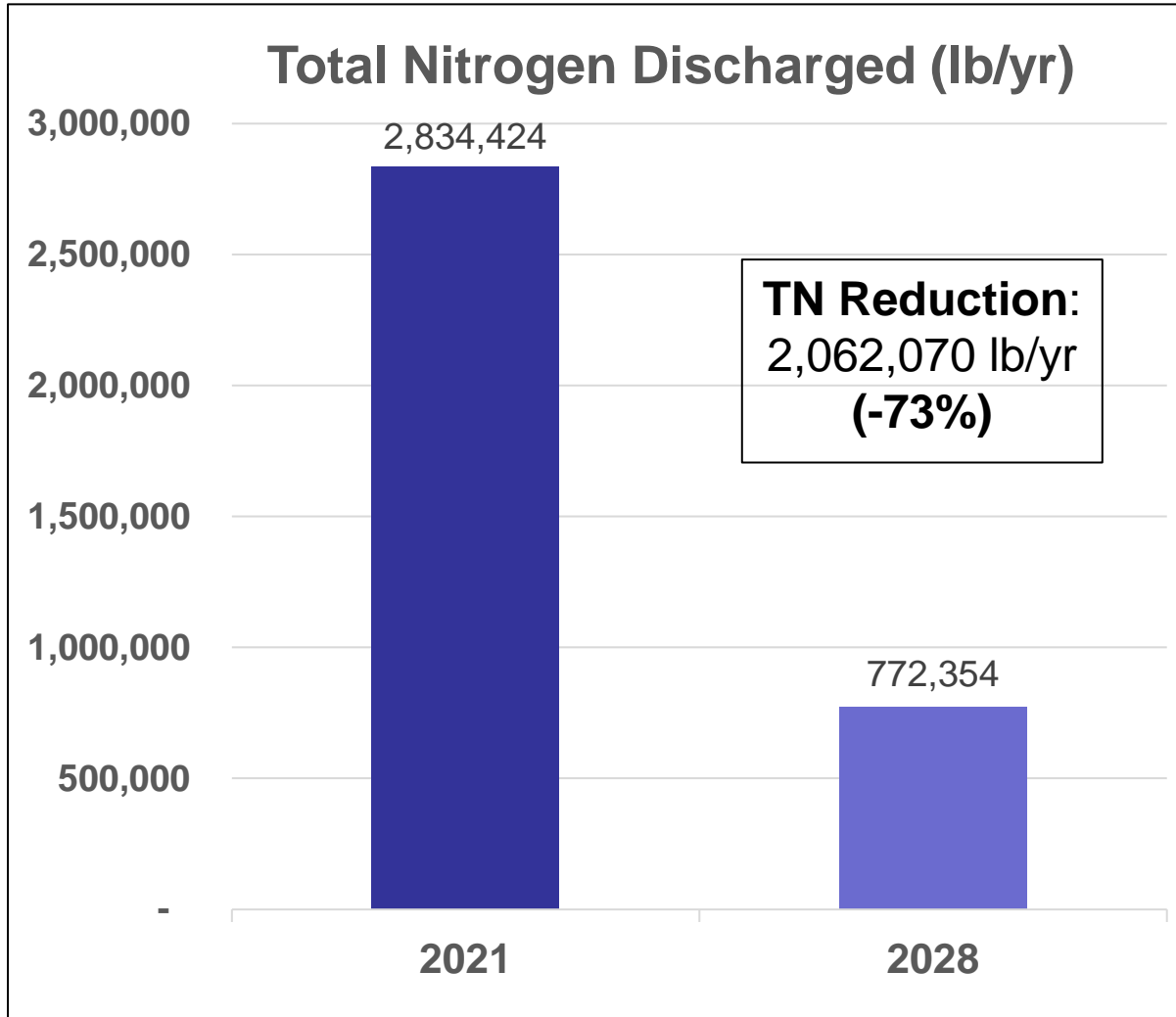


SWIFT water that meets drinking water standards:

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




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



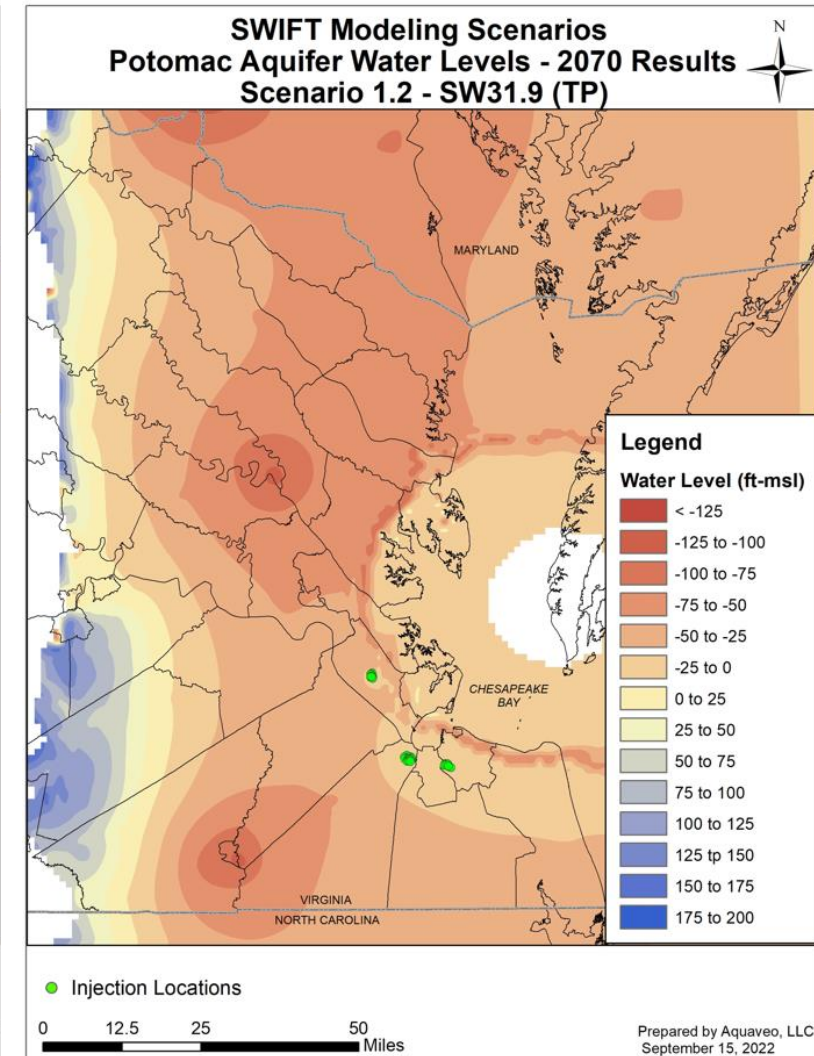
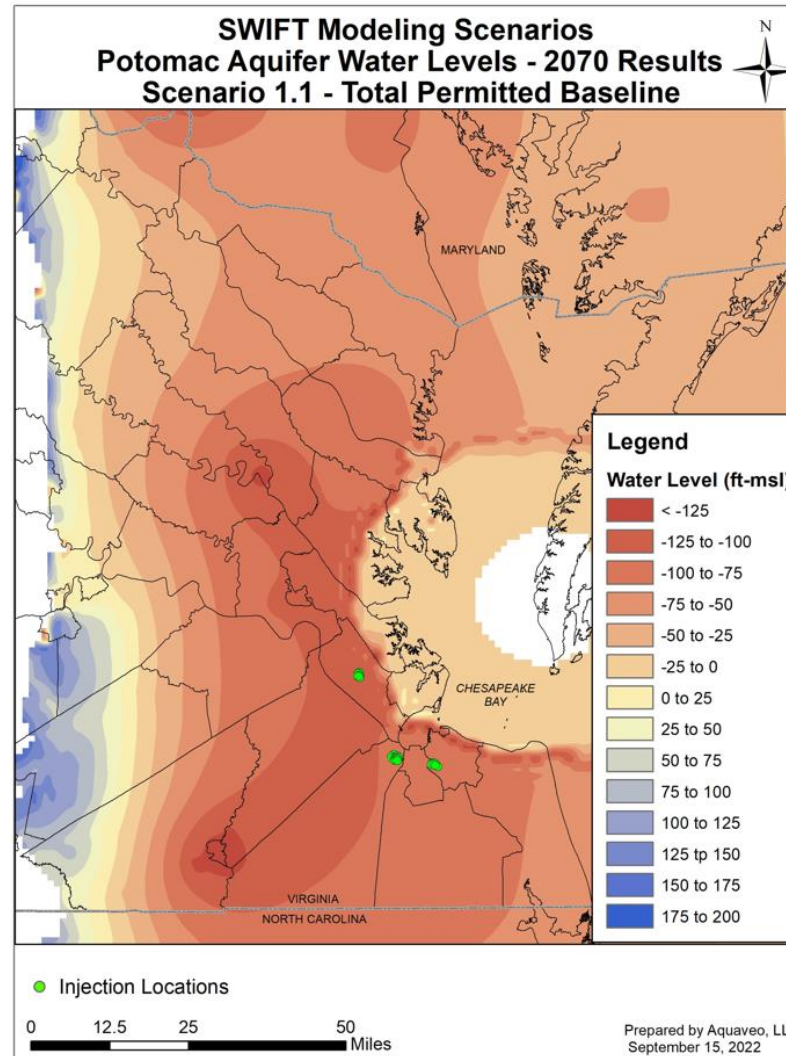
Locality Stormwater Retrofits Required by 2025 2017 Nutrient Trading Agreements

- In 2017, HRPDC estimated the regional stormwater retrofits would cost **\$1.8B (\$2.2B in 2023\$)**
- HRSD will annually transfer nutrient credits to each Locality to ensure stormwater retrofit compliance
- **No cost**
- Subject to Federal, State and Local approvals

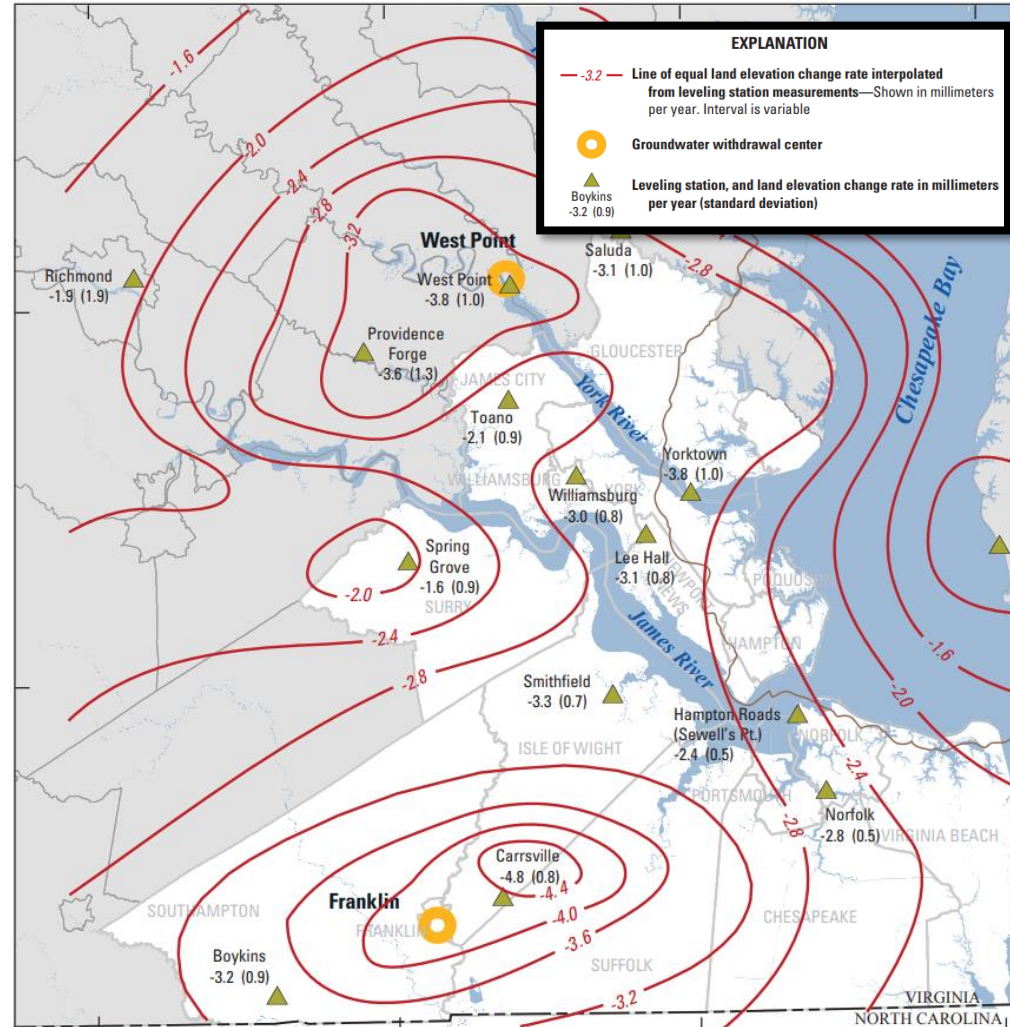
Locality	Total Cost over 15 years	Locality	Total Cost over 15 years
Chesapeake	\$255M	James City County	\$87M
Hampton	\$198M	Poquoson	\$14M
Newport News	\$224M	Suffolk	\$109M
Norfolk	\$280M	Williamsburg	\$18M
Portsmouth	\$125M	York County	\$94M
Virginia Beach	\$323M	Gloucester County	\$33M
Isle of Wight	\$40M	Surry County	\$7M
Hampton Roads	\$1.8B Nov 2017		



- Aquifer does not naturally replenish
- 77% Reduction in Critical Cells
- +50' to + 75' in pressure head
- Reverses decades of declines



- NOAA estimates **one-third of Sea-Level Rise** is due to land subsidence



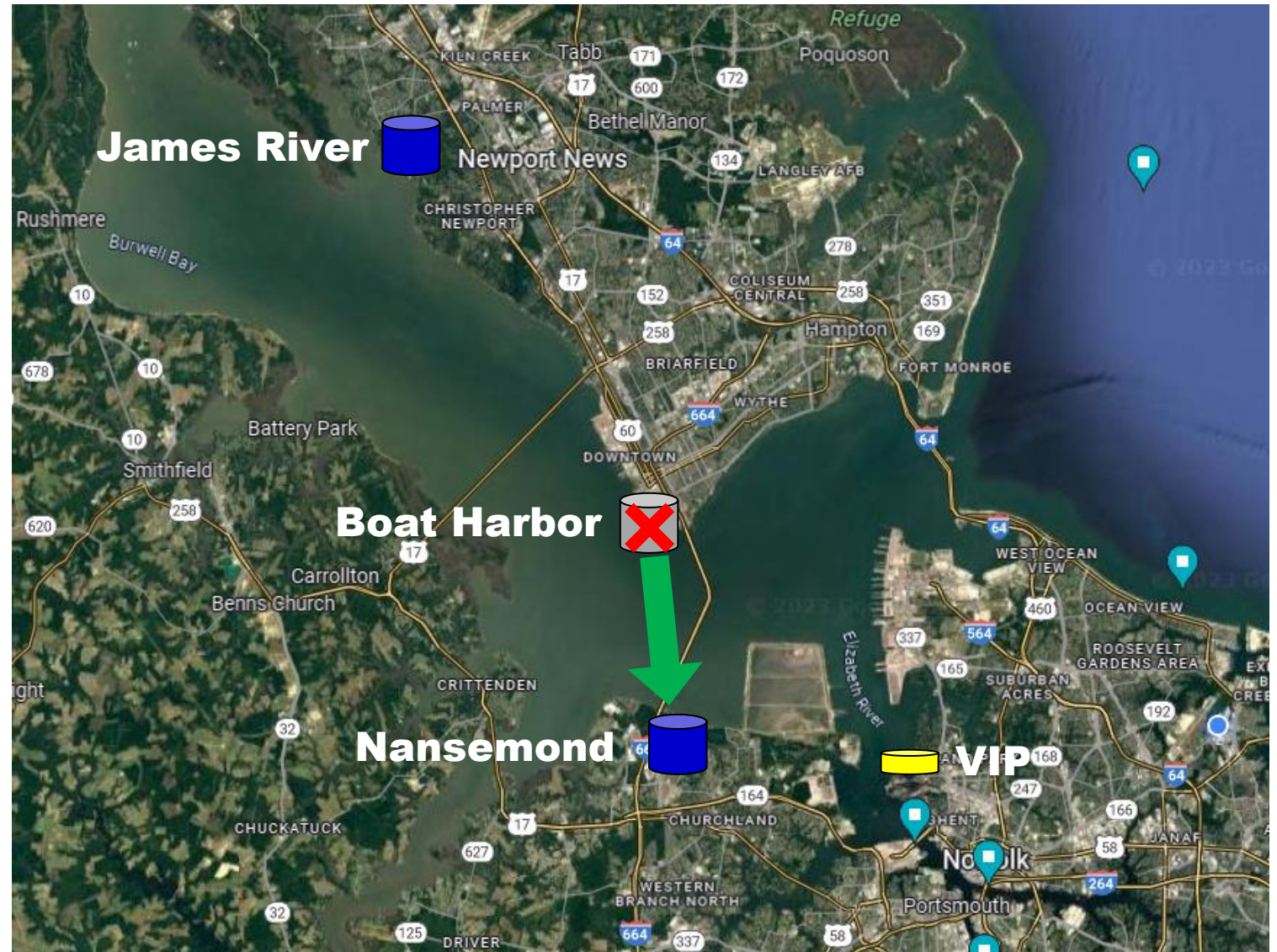
What does the Integrated Plan mean for the region economically?

- **HRSD's Integrated Plan = \$2.8B, Dual Compliance Benefit**
- **Without an Integrated Plan = \$7.8B**
- Clean Water Act Compliance - \$4.1B
 - Each Locality builds wet weather capacity = \$2.7B
 - HRSD builds wet weather capacity = \$1.4B
- Chesapeake Bay TMDL (Nutrient Reduction) - \$3.7B
 - HRSD nutrient reduction plants = \$1.5B
 - Locality stormwater retrofits = \$2.2B

HRSD's Integrated Plan saves the region \$5.0B*

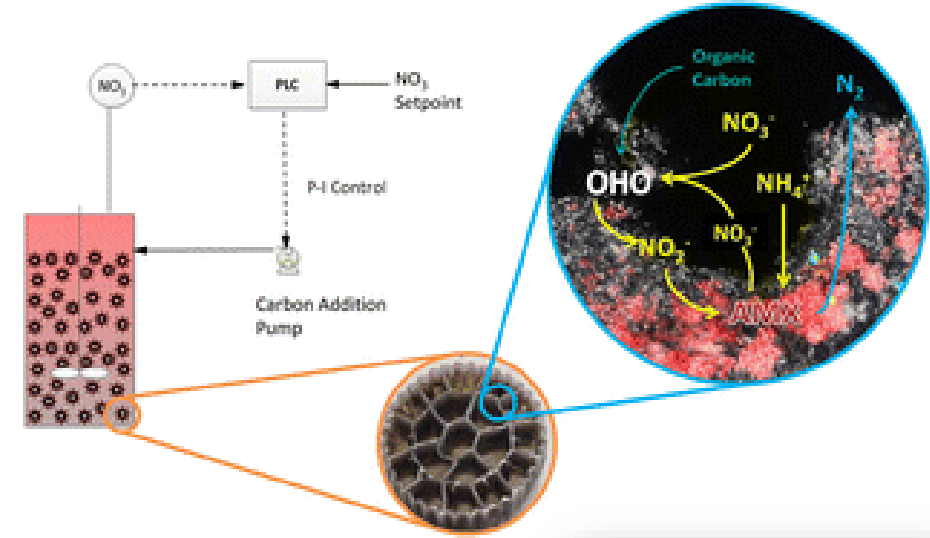
**This does not include the value of sea-level rise mitigation, sustainable water supply and protection from saltwater intrusion*

- 50 MGD SWIFT Capacity
- James River
 - Newport News
 - 2026 Completion
- Boat Harbor
 - Newport News
 - 2026 Completion
- Nansemond
 - Suffolk
 - 2028-2030 Completion
- VIP
 - Norfolk
 - 2032 Completion



Partial Denitrification Anammox (PdNA)

- Patented and licensed technology with DC Water
- Over a decade's worth of research
- York River Plant – **first in the world**
 - 80% less chemicals
 - 50% less power
 - Saves \$1 million a year
 - Saved over \$10 million capital costs
- Potential to revolutionize wastewater treatment



Mutually beneficial partnership for the region and our residents

- Our SWIFT program and conveyance projects are needed to comply with the Integrated Plan
- Key compliance dates coming up
 - 2025 Rehab Action Plan
 - 2026 Nutrients
 - 2030 High Priority 1 Projects
 - 2032 Nutrients and SWIFT
- Locality approvals needed



***Always researching ways to lower costs and keep
our waterways clean***



HRSD

Questions?