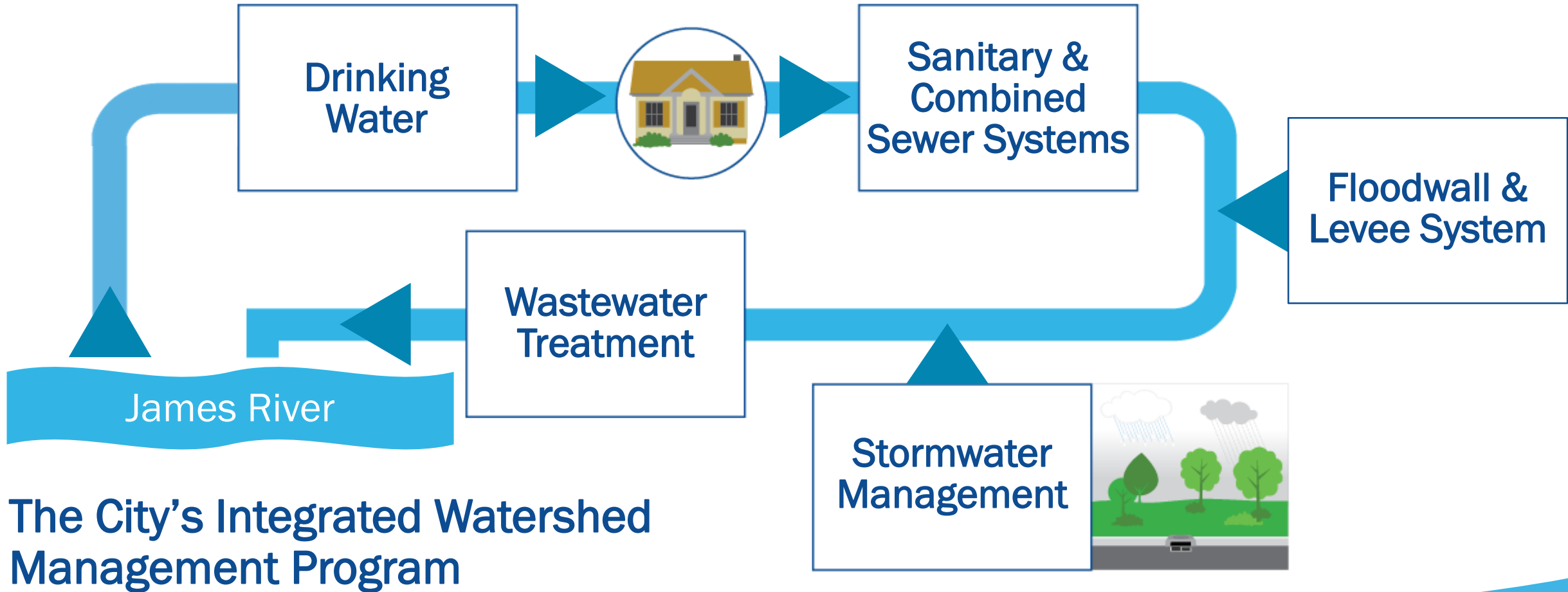


Controlling Richmond's Combined Sewer Overflows into the James River by 2035

Compliance with SB 1064



Richmond's Department of Public Utilities is responsible for all aspects of water services for the City



The City's Integrated Watershed Management Program



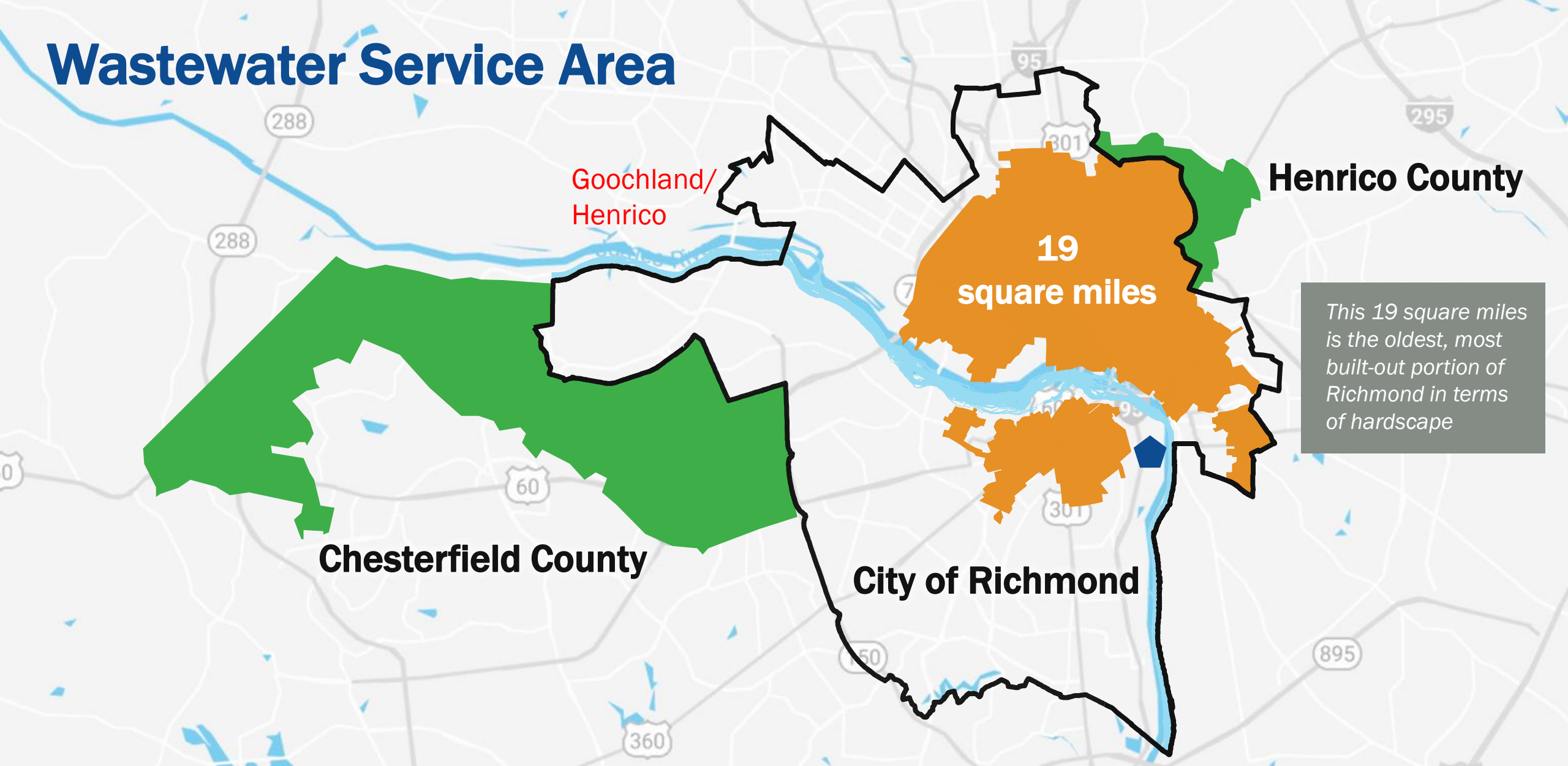
Richmond's DPU has been working for decades with partners to improve water quality in the James River



Falls of the James Scenic River Advisory Committee




Wastewater Service Area



 Combined Sewer System
Drainage Area

 County Area
Serviced by City

 Wastewater
Treatment Plant

City of Richmond at-a-glance

Environmental Justice Community

230,000 Population

23.2% Population below poverty level

36.5% Population below 200% poverty level

54% People of color

Century-Old Sewer System

114 Average age of sewer pipes (years)

950 Miles of pipes

8" to 27' Pipe diameters

25 Combined sewer outfalls

140 Wastewater treatment plant capacity (MGD)



The City needs to increase wastewater capacity significantly to handle increasing population

- *Richmond's population increased by over 32,000 from 2000 to 2019*
- *The City's population is expected to increase to 340,000 by 2037**



Progress

How It Started

46 Outfalls

75 WWTP capacity (MGD)

5B Gallons of overflow annually

\$117M Invested

How It's Going

25 Outfalls

140 WWTP capacity (MGD)

1.9B Gallons of overflow annually

\$315M Invested to date

\$50M Provided by GA and matched by DPU



CSS Improvements

Phase 1 (1970 – 1988)

2 Projects

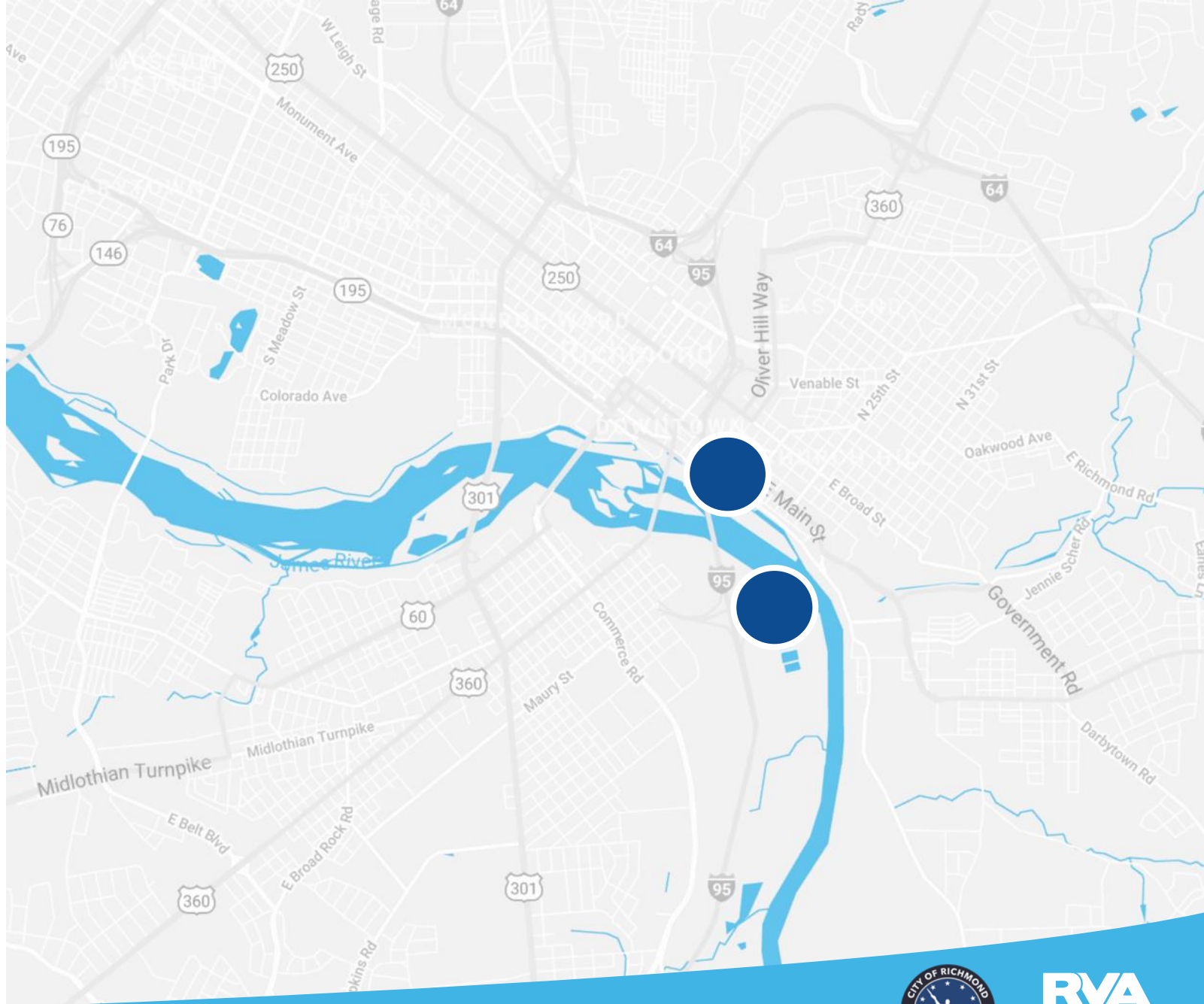
50 MG Shockoe Retention Basin
WWTP capacity expansion to 75 MGD

80% CSO Capture

Estimated annual basis

\$117M
(\$385M in 2021 dollars)

\$31M in grant funding
(\$102M in 2021 dollars)



CSS Improvements

Phase 2 (1988 - 2002)

6 Projects

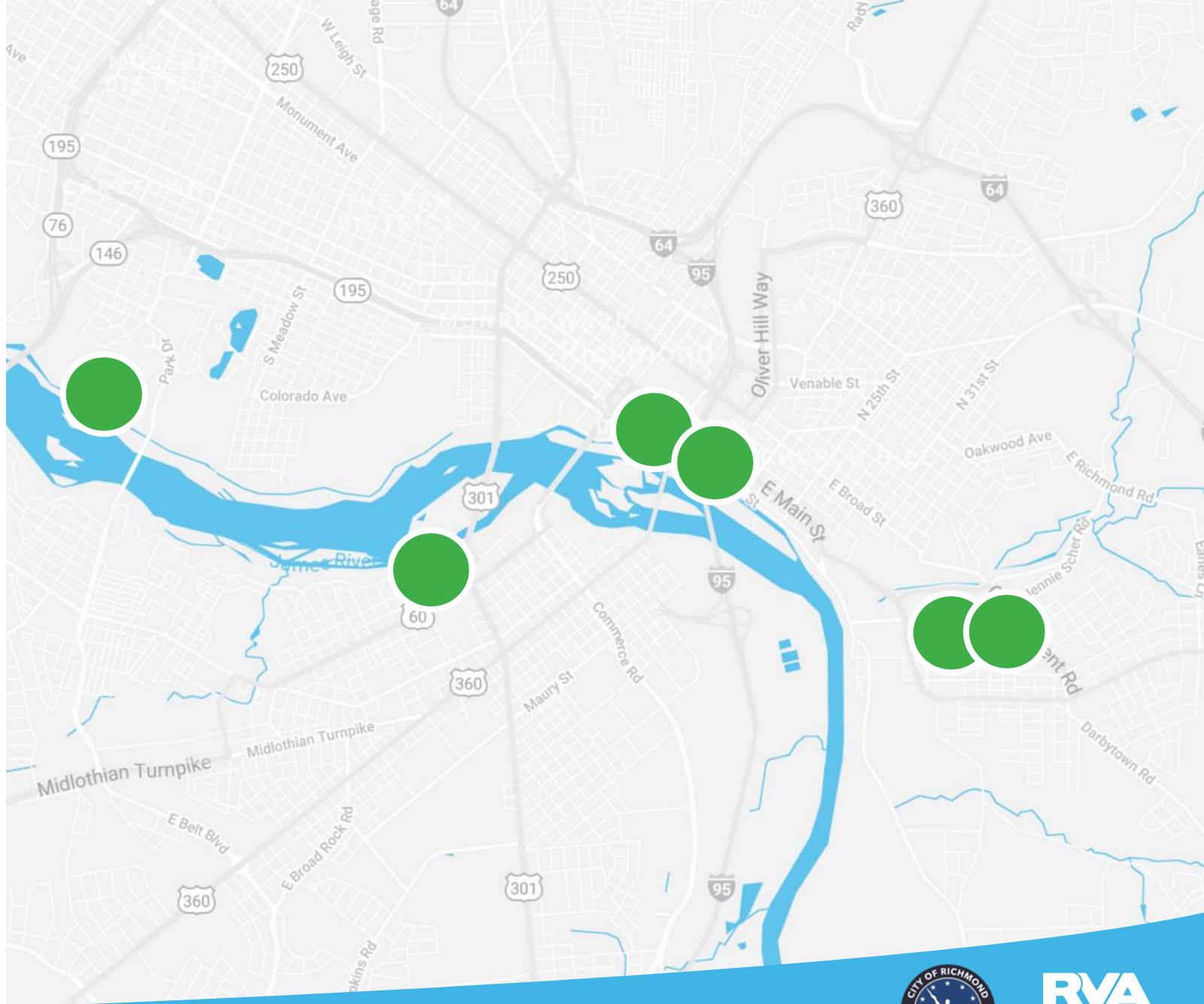
Conveyance sewers
7 MG Hampton-McCloy storage tunnel

85% CSO Capture

Estimated annual basis

\$127M
(\$226M in 2021 dollars)

\$29M in grant funding
(\$52M in 2021 dollars)



CSS Improvements

Phase 3 (2002 – present)

12 Projects

WWTP capacity expansion to 140 MGD during wet weather

91% CSO Capture

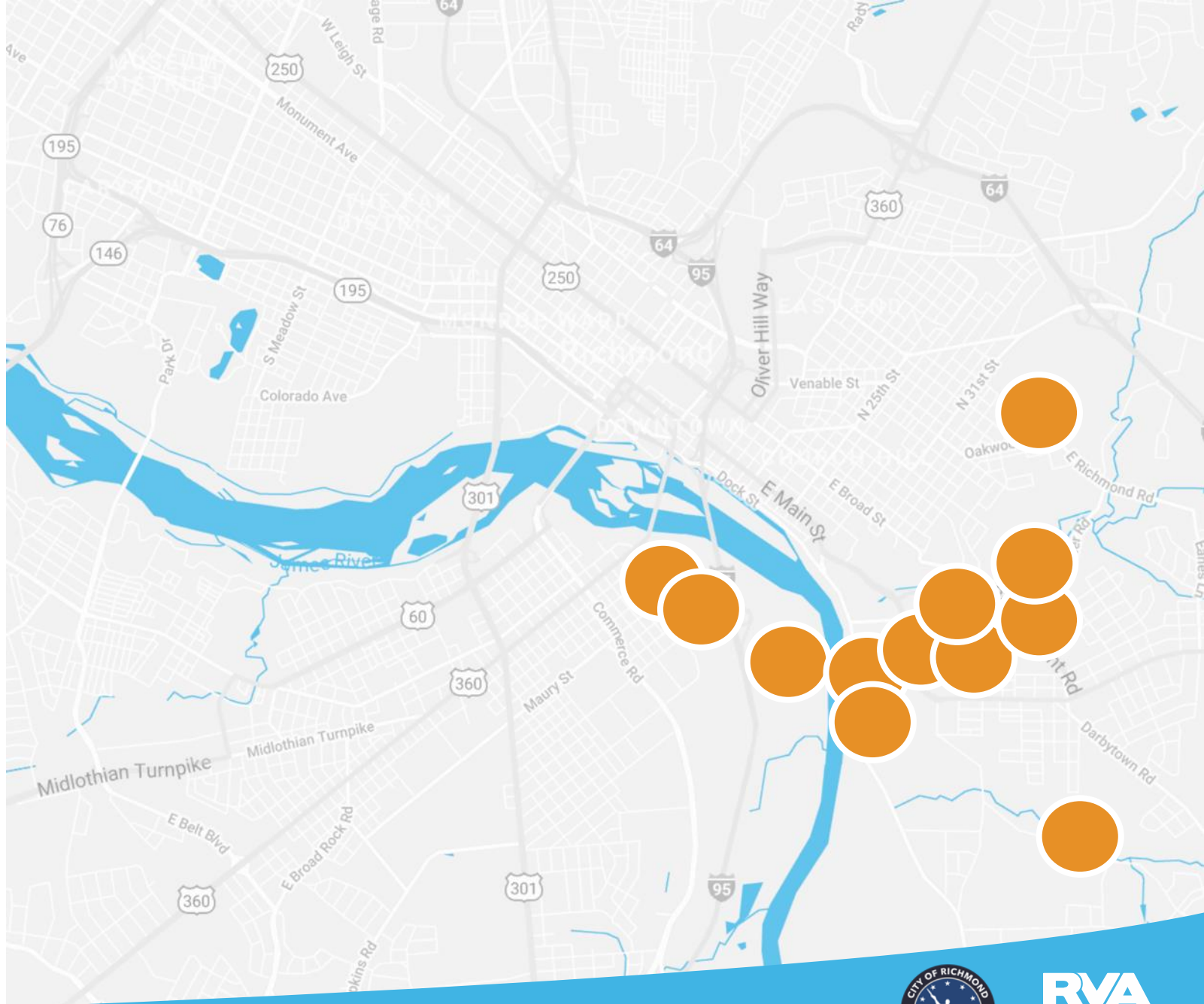
Estimated annual basis

\$68M

(\$102M in 2021 dollars)

\$29M in grant funding

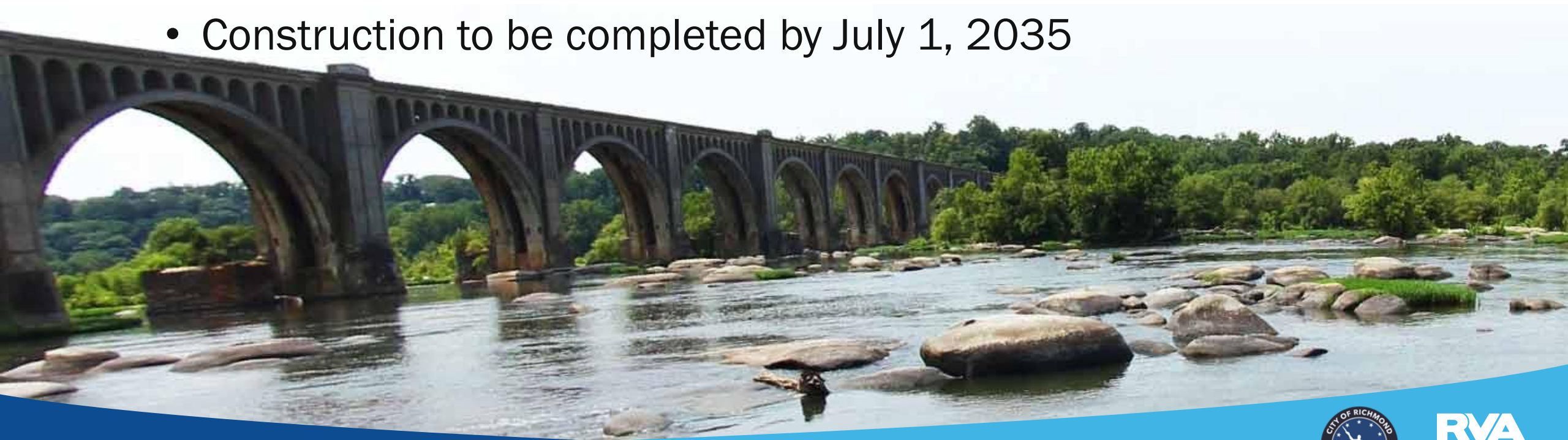
(\$44M in 2021 dollars)



SB 1064 requires full compliance of the CSS by 2036

The City of Richmond is required to develop Interim and Final Plans:

- **Interim Plan submitted July 2021**
 - Construction to be completed by July 1, 2027
- **Final Plan due July 2024**
 - Construction to be completed by July 1, 2035



Interim Plan

10 Projects

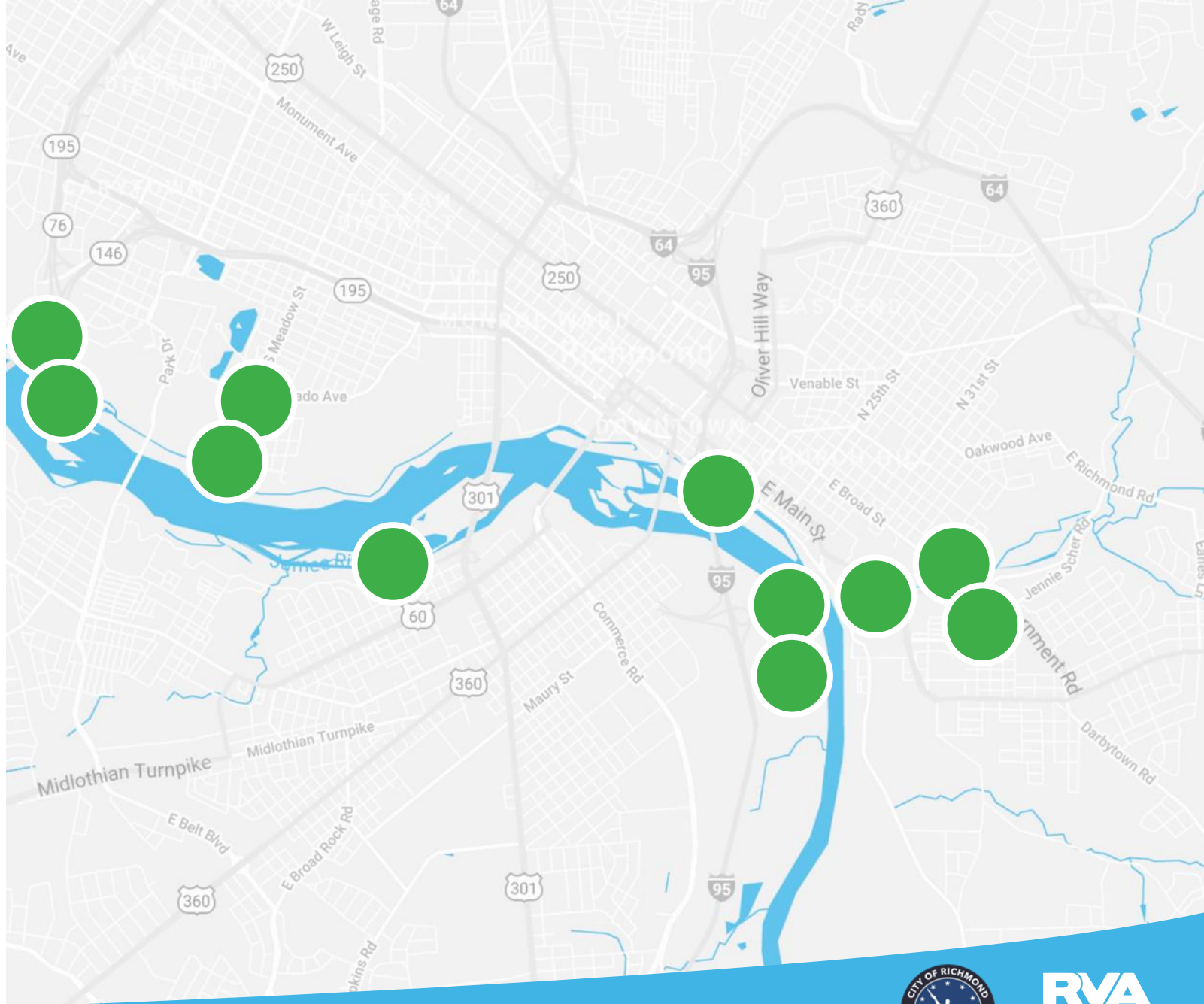
Control overflows by using existing capacity in combined sewer system
Estimated 182.3 MG annual capture

92% CSO Capture

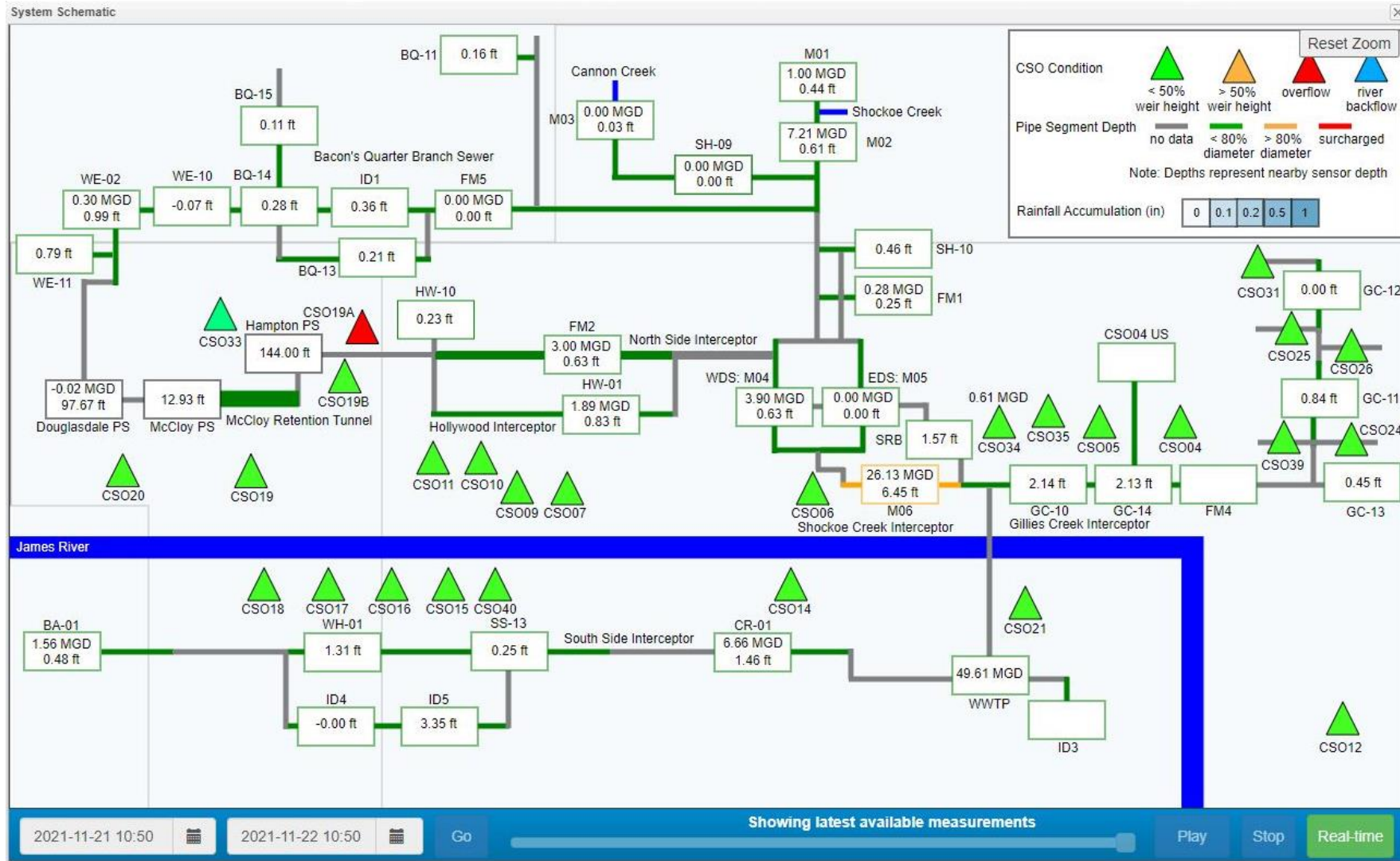
Estimated annual basis

\$33.1M*

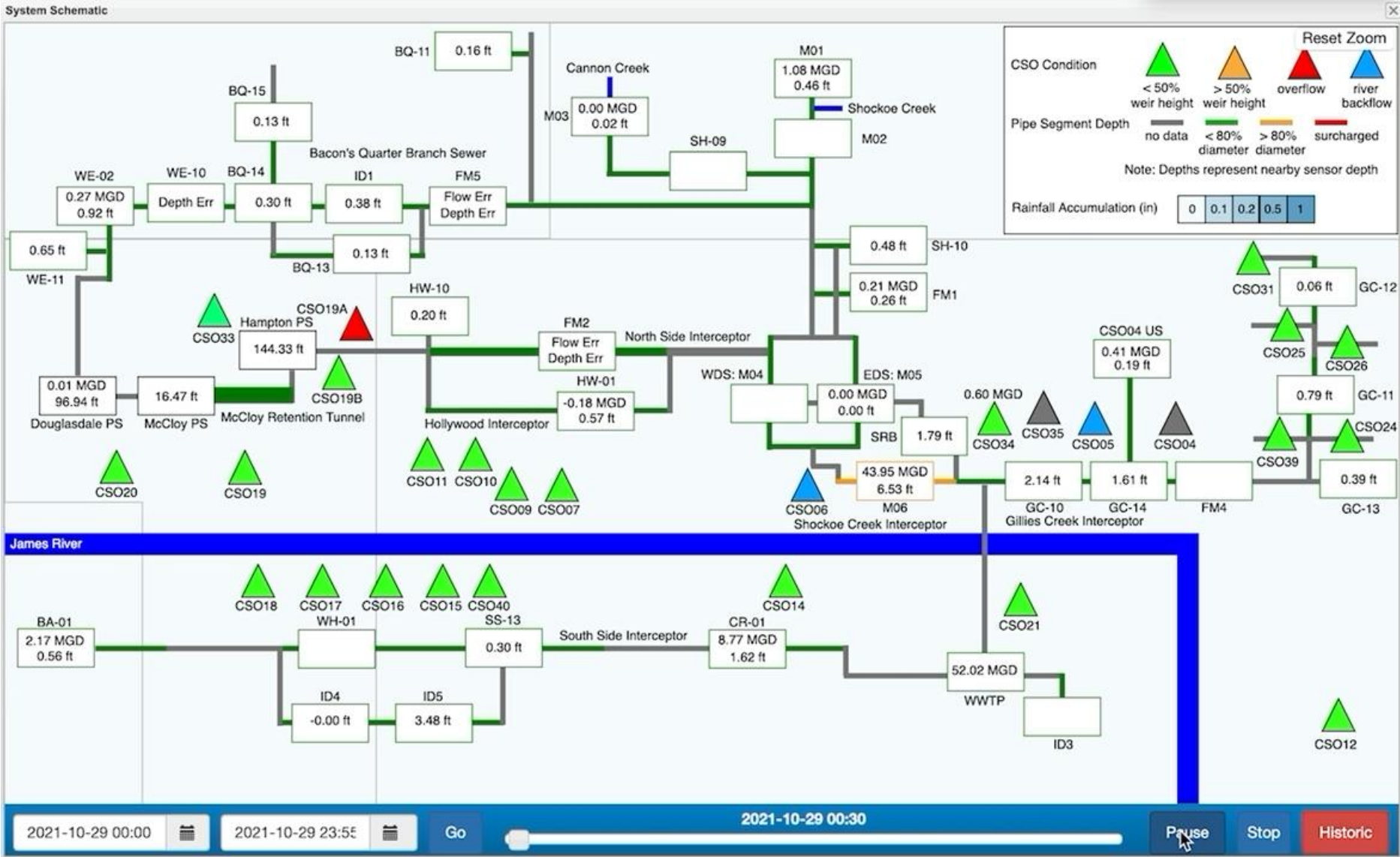
*In 2021 dollars



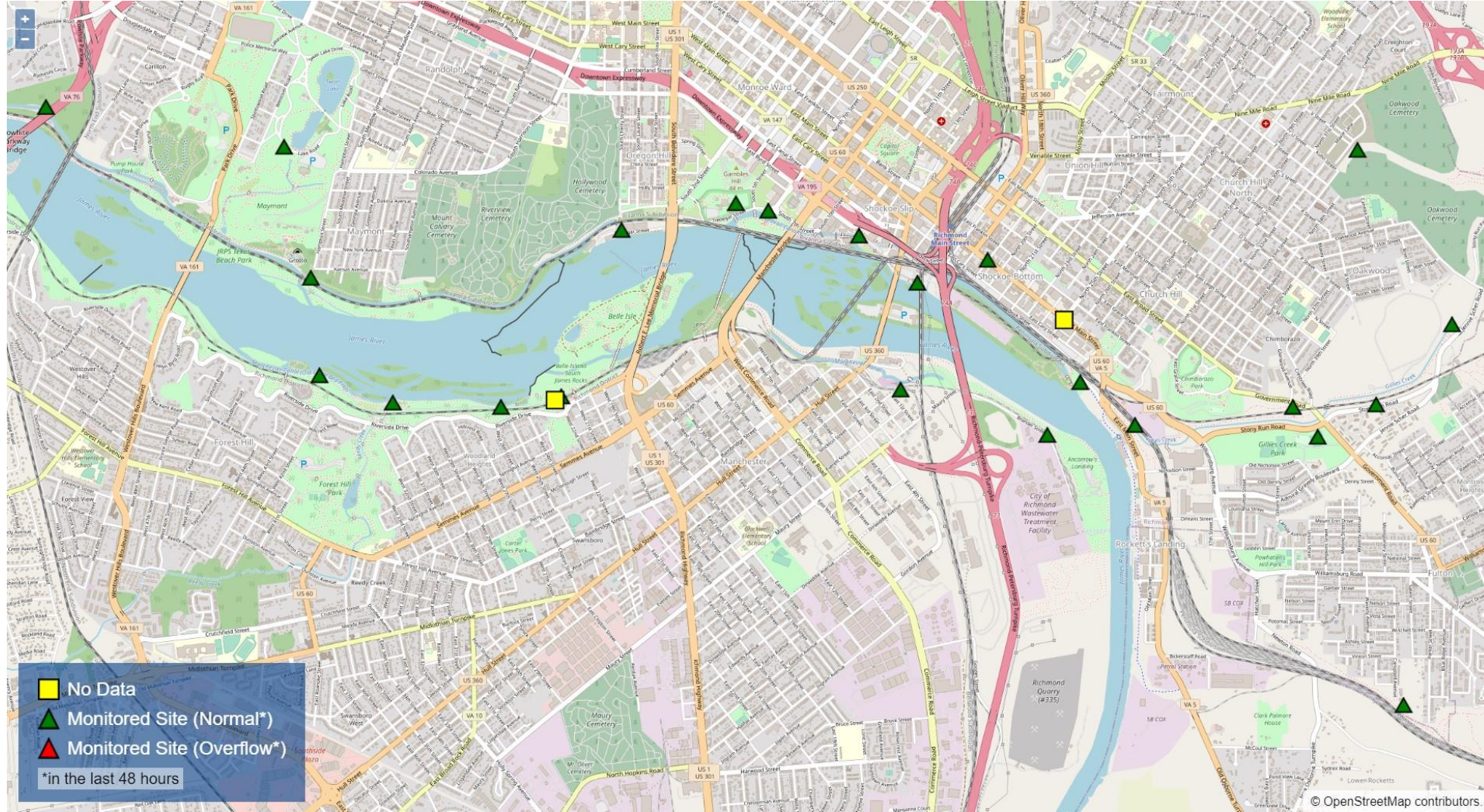
Real-Time Decision Support System



What did we learn?



First in Virginia: Public-Facing, Real-Time CSO Map



Final Plan – Three alternatives being evaluated

Must capture, convey, and treat up to 5 billion gallons per year

99% CSO Capture

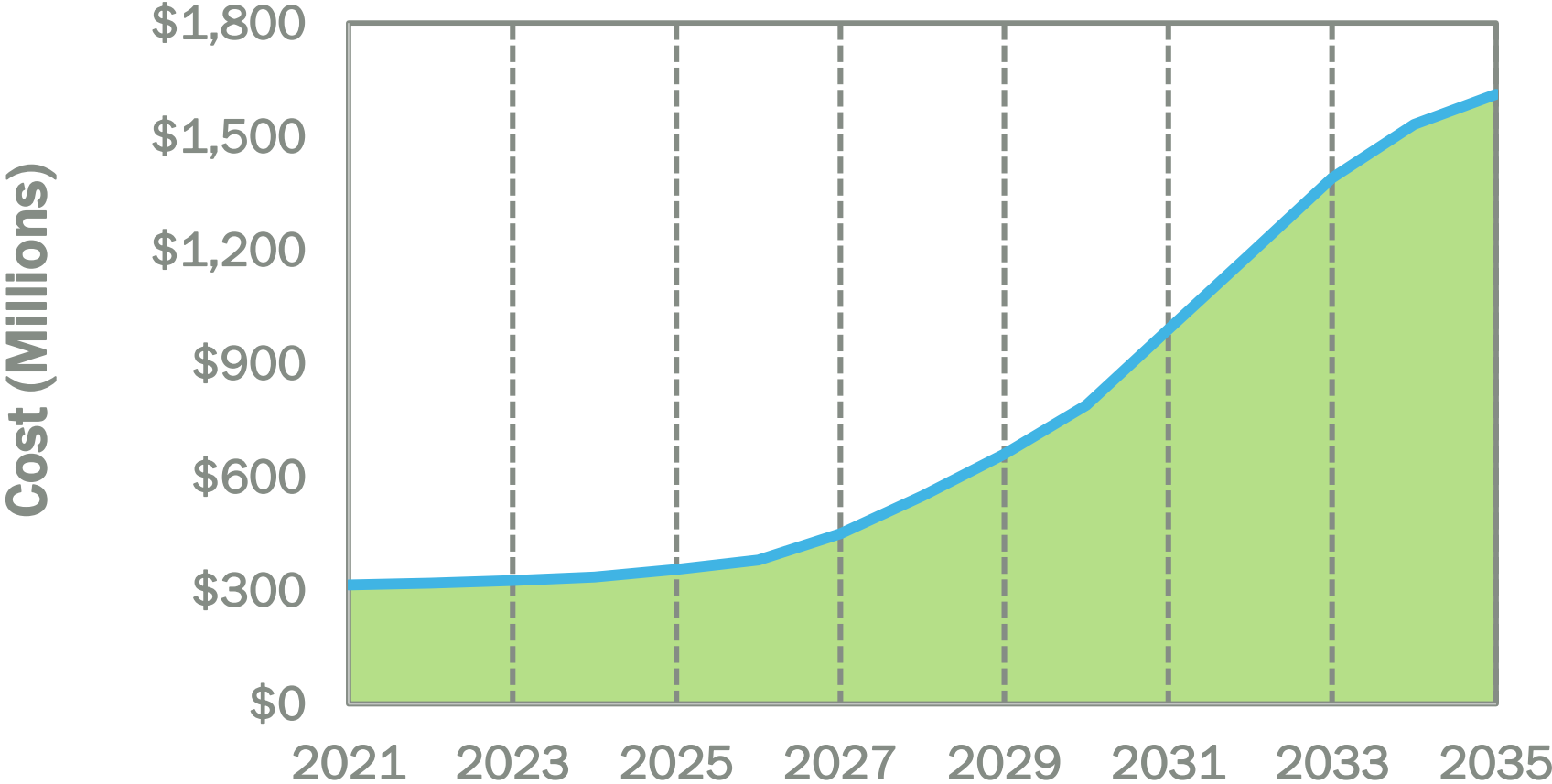
Estimated annual basis

\$1.3B*

*In 2021 dollars



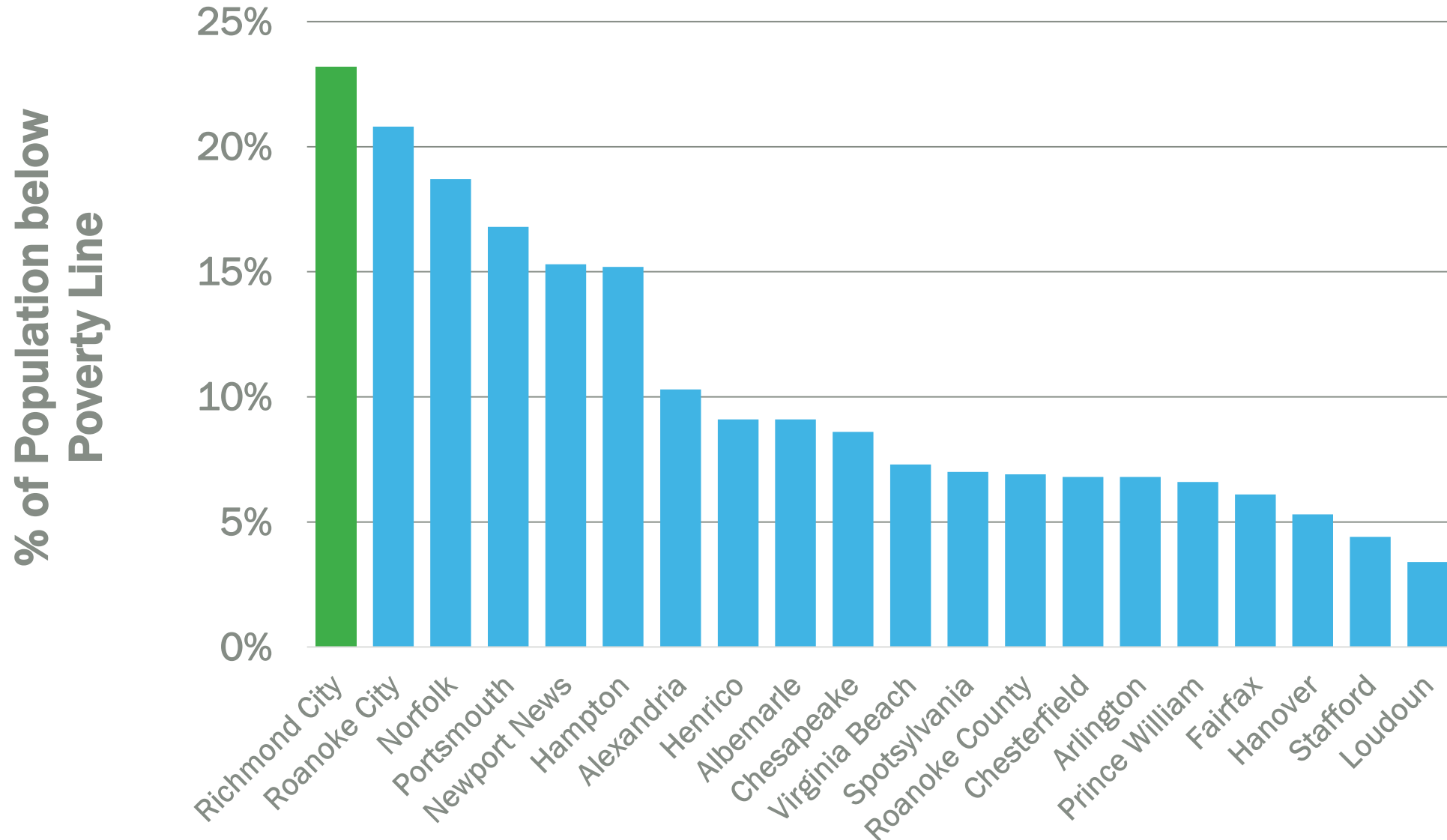
The City of Richmond needs an additional \$1.3 billion in the next 14 years to comply with SB 1064



Environmental Justice and Affordability: Richmond has among the highest wastewater rates of any municipality in Virginia

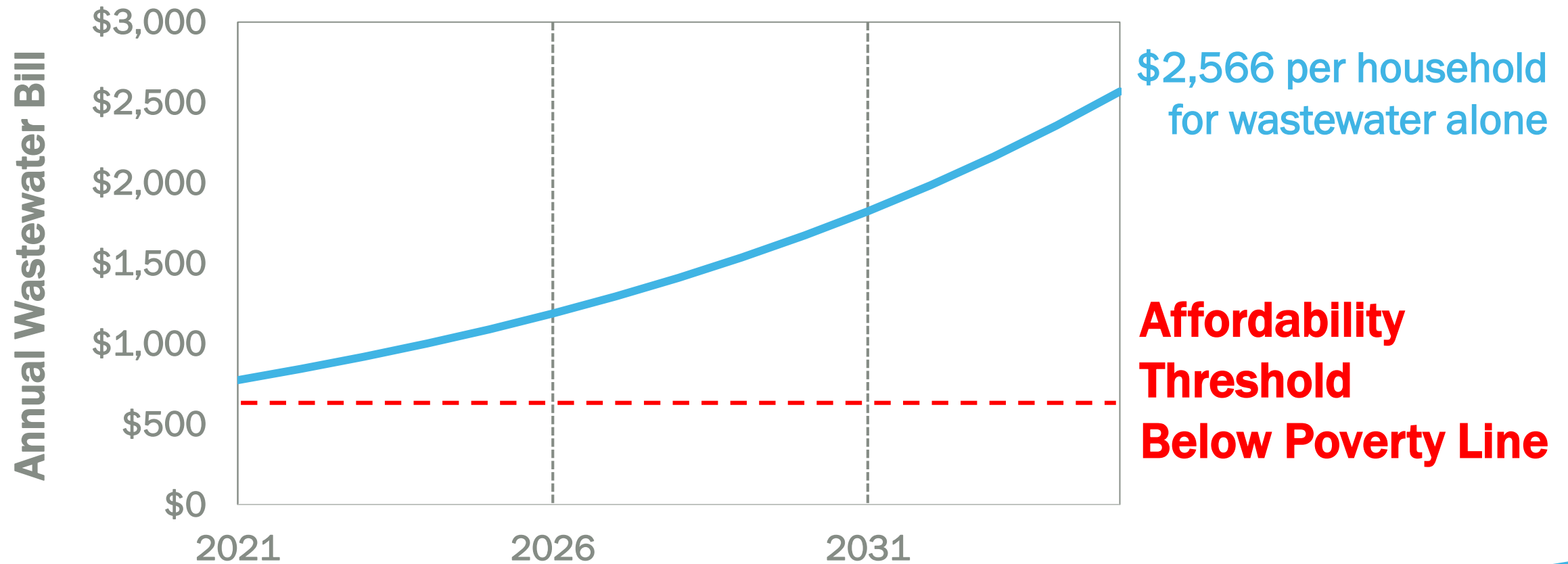


Richmond has the highest population below the poverty line of the 20 largest localities in Virginia



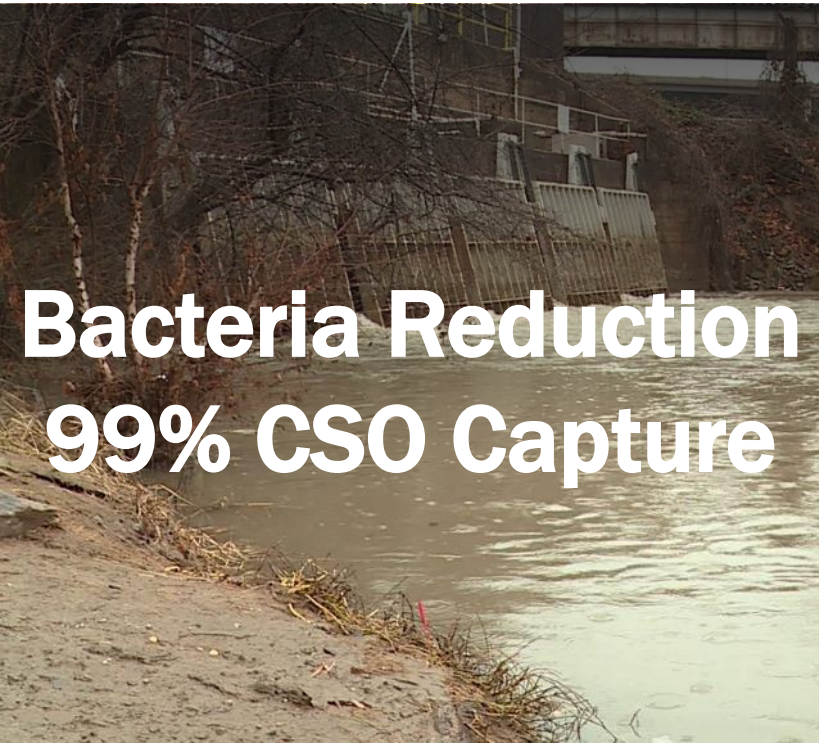
Wastewater bills would increase 232% to \$2,566 per year

Rate increases would create an affordability crisis for 53,000 citizens below the poverty line

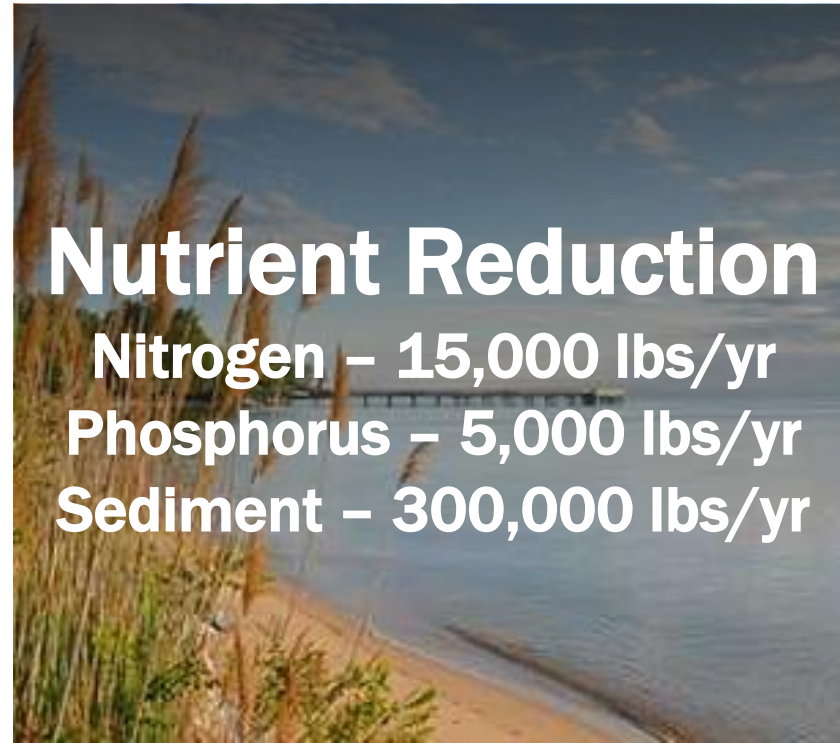


CSS projects offer enormous benefits to the Commonwealth

Recreation



Chesapeake Bay



Environment



CSS projects enhance Virginians' connections to waterways

Community enhancements in previous CSS projects benefit all users of the James River

Potential improvement in Final Plan



Brown's Island and Canal Walk Improvements



James River Park System Improvements



Chapel Island Park

The City of Richmond requires an additional commitment of \$1.3 billion to meet the mandates of SB 1064

- Resolve extensive, centuries-old sewer system issues
- Promote environmental justice
- Avoid affordability crisis for all ratepayers
- Boost economic growth and resilience





Questions?
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