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

A Resolution to Express Support

CITY OF RICHMOND · ESTABLISHED 1737

RVA H2O

Purpose

- Resolution:
  - To express the City Council's support for, and to prioritize the construction of, CSO Final Plan projects by July 1, 2035 to improve water quality in the James River.

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

Wastewater Service Area

Goochland/
Henrico

Henrico County

19 square miles

This 19 square miles is the oldest, most built-out portion of Richmond in terms of hardscape

Chesterfield County

City of Richmond
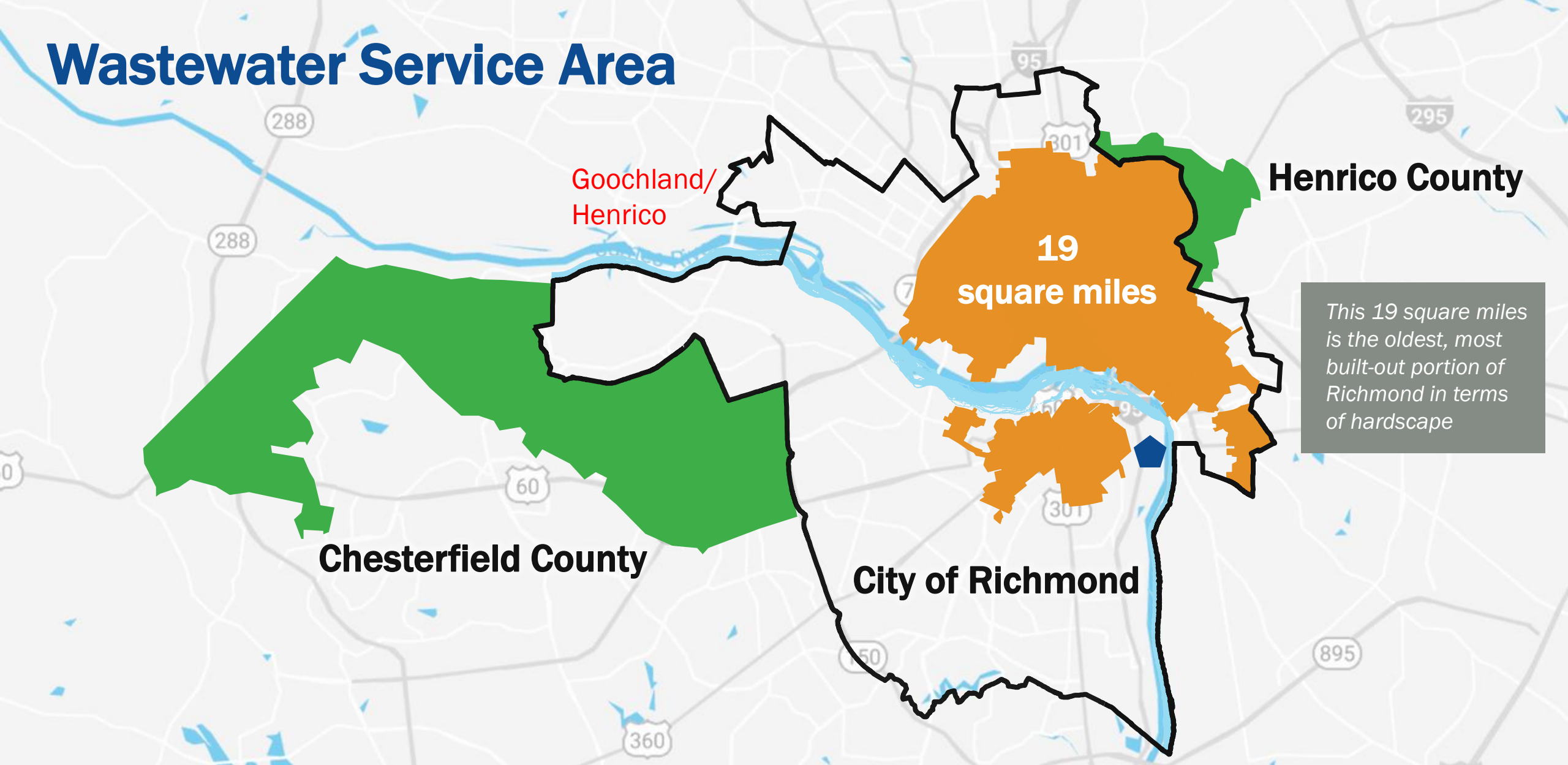
Combined Sewer System Drainage Area

County Area Serviced by City

Wastewater Treatment Plant

Combined Sewer System at-a-glance

Century-Old Sewer System

114 Average age of sewer pipes (years)
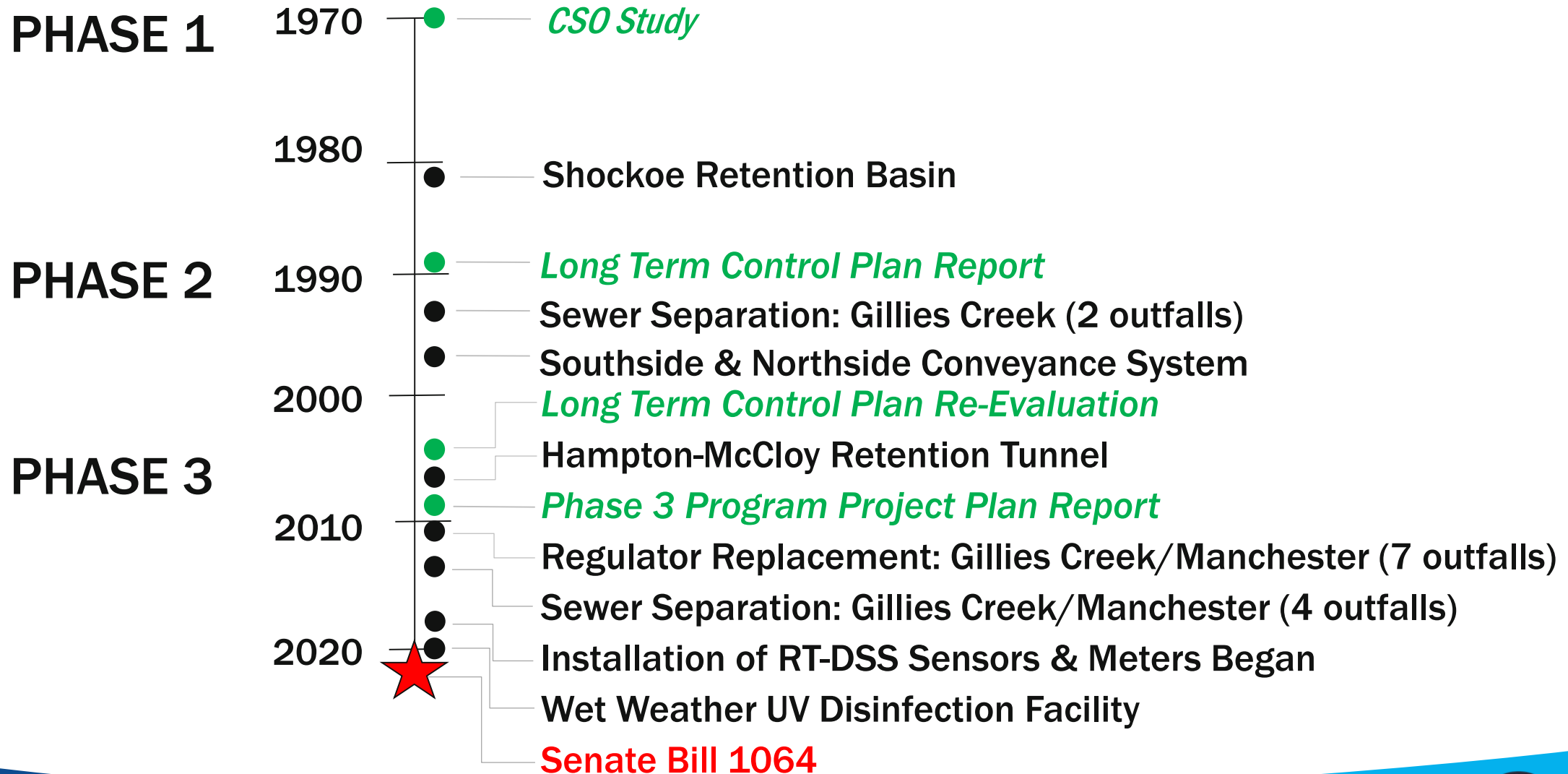
950 Miles of pipes

8" to 27' Pipe diameters

25 Combined sewer outfalls

140 Wastewater treatment plant capacity (MGD)

Combined Sewer System Improvements

PHASE 1 — 1970 ● *CSO Study*

1980 ● Shockoe Retention Basin

PHASE 2 — 1990 ● *Long Term Control Plan Report*
● Sewer Separation: Gillies Creek (2 outfalls)
● Southside & Northside Conveyance System

2000 *Long Term Control Plan Re-Evaluation*

PHASE 3 ● Hampton-McCloy Retention Tunnel
● *Phase 3 Program Project Plan Report*
2010 ● Regulator Replacement: Gillies Creek/Manchester (7 outfalls)
● Sewer Separation: Gillies Creek/Manchester (4 outfalls)
2020 ● Installation of RT-DSS Sensors & Meters Began
Wet Weather UV Disinfection Facility
Senate Bill 1064

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Progress

How It Started

46 Outfalls

75 WWTP capacity (MGD)

5B Gallons of overflow annually

$117M Invested

How It's Going

25 Outfalls

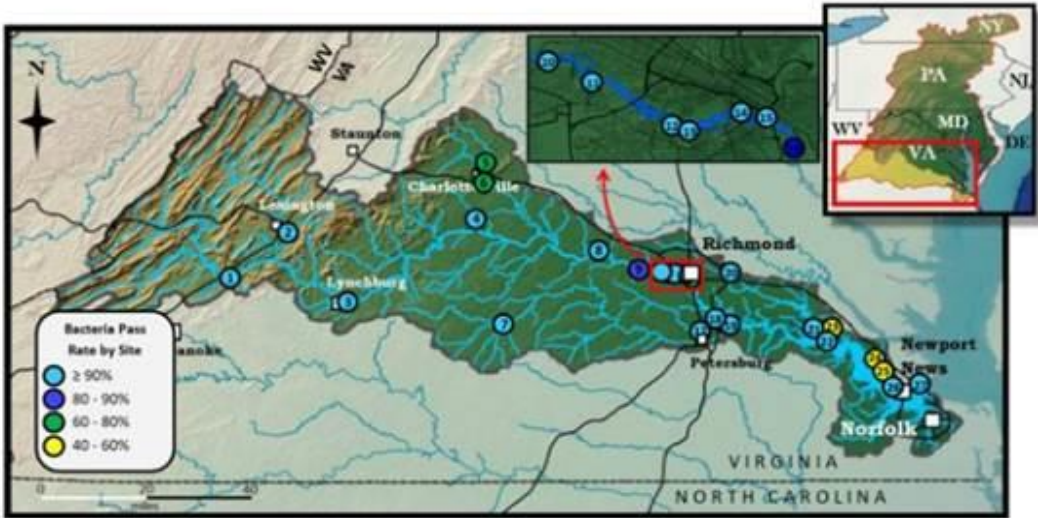**140** WWTP capacity (MGD)

1.9B Gallons of overflow annually

$315M Invested to date

$50M Provided by GA and matched by DPU
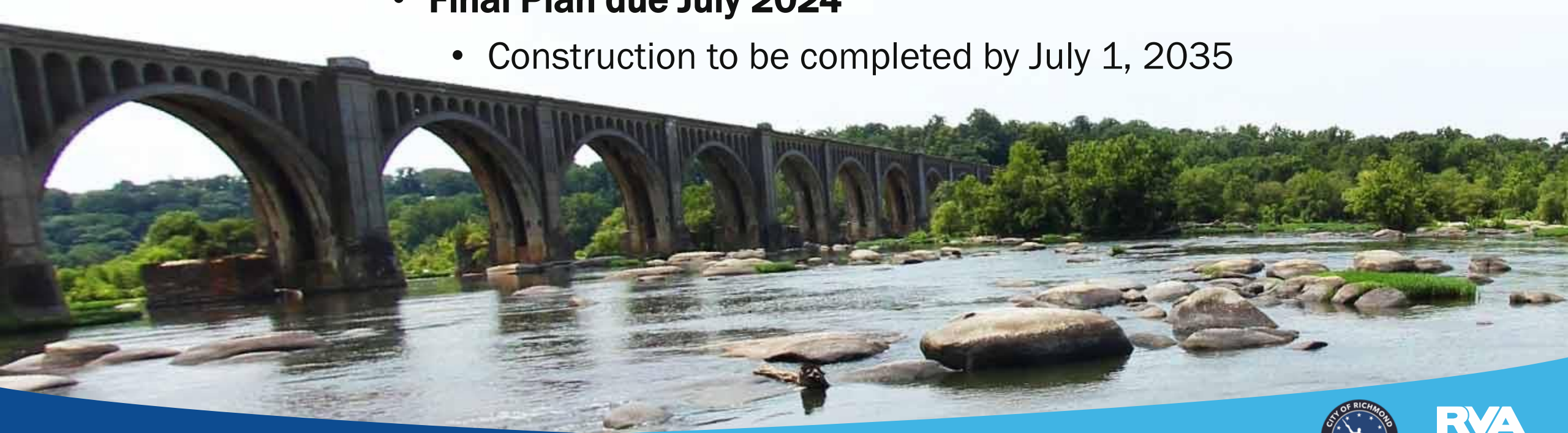
Water Quality Progress

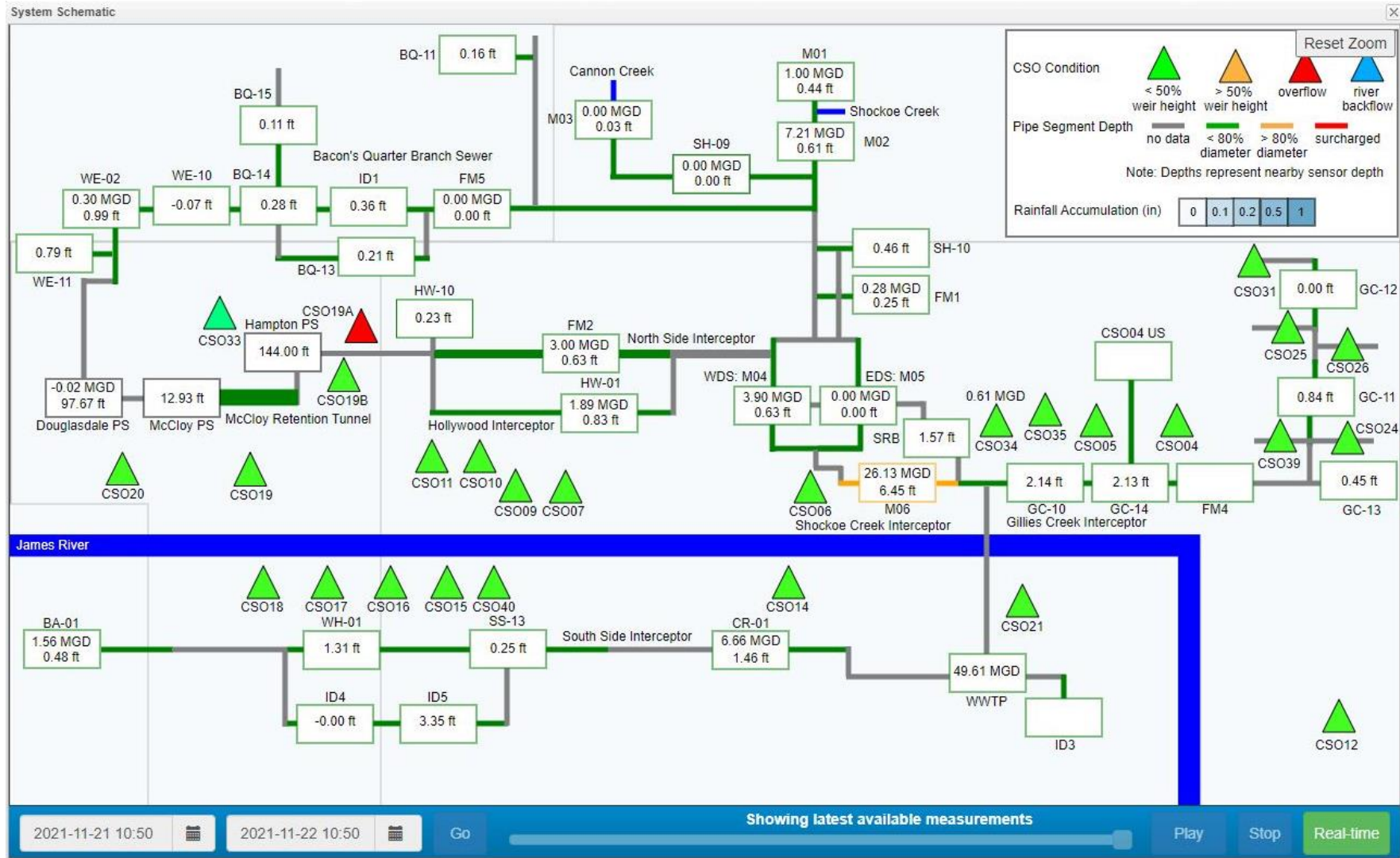| SITE NUMBER	SITE NAME	LOCATION	LENGTH OF RECORD (YRS)	PASS RATE (2013 – '18)	PASS RATE (2019)	DEPARTURE FROM AVG
1	Buchanan Boat Ramp	Buchanan	7	74%	100%	+26%
2	Maury at Ben Salem	Rockbridge	6	87%	100%	+13%
3	Riveredge Park	Lynchburg	7	95%	100%	+5%
4	Scottsville Boat Ramp	Scottsville	7	91%	100%	+9%
5	Rivanna at Riverview	Charlottesville	5	79%	71%	-8%
6	Rivanna at Darden Towe	Charlottesville	4	79%	71%	-8%
7	Main St. Bridge	Farmville	3	93%	92%	-1%
8	Tucker Park/Maidens	Goochland	7	86%	93%	+7%
9	Roblous	Chesterfield	4	91%	83%	-8%
10	Huguenot Flatwater	Richmond	5	92%	93%	+1%
11	Pony Pasture	Richmond	5	91%	93%	+2%
12	42nd Street	Richmond	5	80%	93%	+13%
13	Reedy Creek	Richmond	5	86%	93%	+7%
14	Tredegar	Richmond	7	83%	100%	+17%
15	14th Street	Richmond	7	73%	93%	+20%
16	Rockett's Landing	Richmond	6	64%	87%	+23%
17	Harvell Dam	Petersburg	6	80%	100%	+20%
18	Hopewell (Rt. 10)	Hopewell	4	96%	100%	+4%
19	City Point	Hopewell	7	76%	93%	+17%
20	Grapevine Bridge	Henrico	6	86%	91%	+5%
21	Chickahominy Riverfront Park	James City	4	97%	100%	+3%
22	Jamestown Beach	James City	7	97%	100%	+3%
23	Powhatan Creek	James City	5	72%	47%	-25%
24	Denbigh Boat Ramp	Newport News	6	91%	57%	-34%
25	Riverside Beach	Newport News	6	98%	92%	-6%
26	Hampton River	Hampton	5	93%	92%	-1%
27	Deep Creek	Newport News	3	100%	57%	-43%
TOTAL	-----	-----	7	85%	90%	+5%

SB 1064 requires full compliance with Water Quality Standards by 2036

The City of Richmond is required to develop Interim and Final Plans:
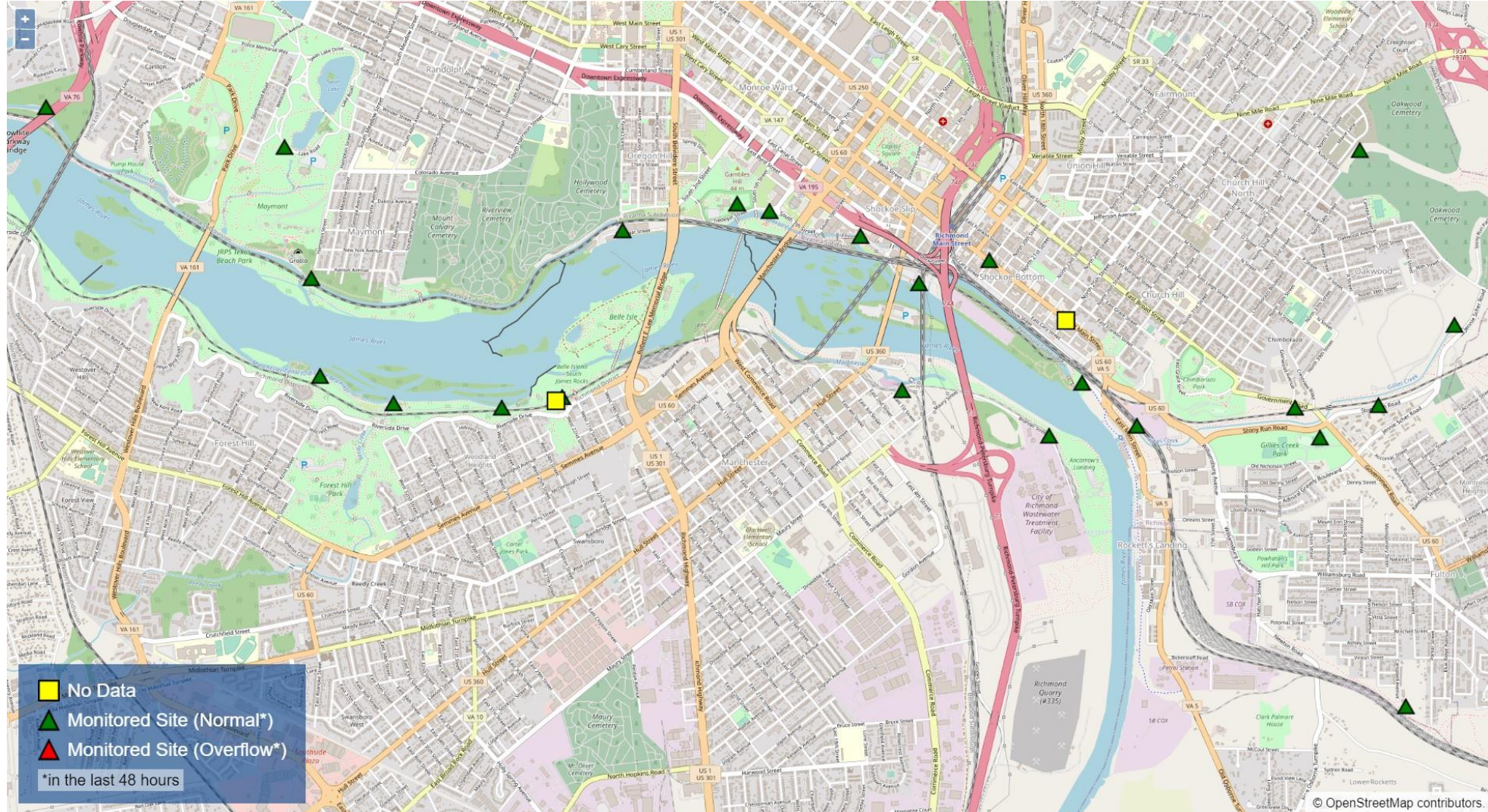
- **Interim Plan submitted July 2021**
  - Construction to be completed by July 1, 2027
- **Final Plan due July 2024**
  - Construction to be completed by July 1, 2035

Real-Time Decision Support System

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

Legend:
- ⬜ No Data
- 🔺 Monitored Site (Normal*)
- 🔺 Monitored Site (Overflow*)

*in the last 48 hours

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Final Plan – Three alternatives being evaluated

Must capture, convey, and treat up to 5 billion gallons per year
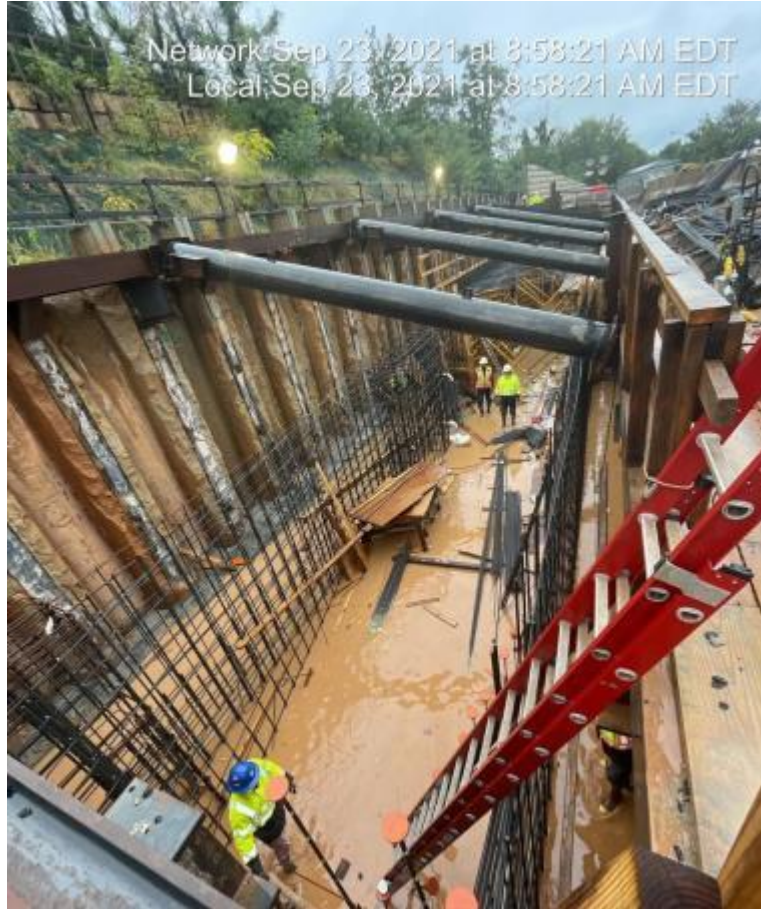
99% CSO Capture

Estimated annual basis
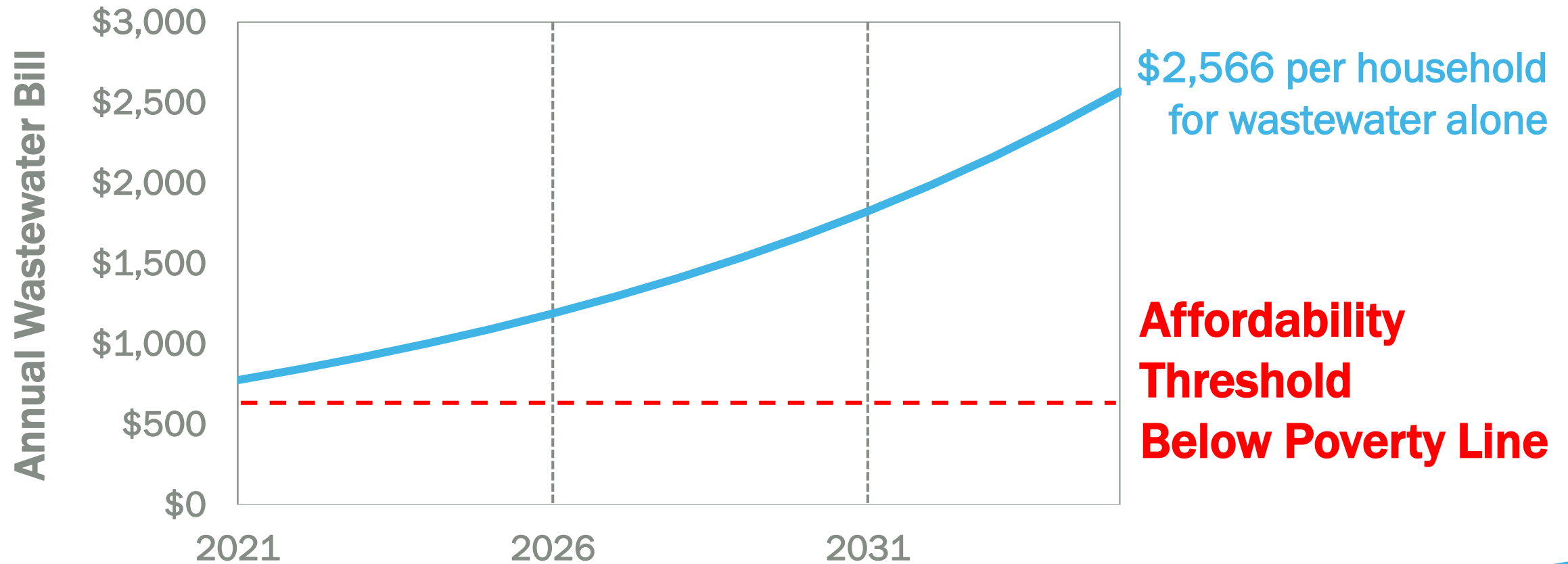
$1.3B*

*In 2021 dollars

Very Large Infrastructure Projects

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

Annual Wastewater Bill

$3,000
$2,500
$2,000
$1,500
$1,000
$500
$0

2021   2026   2031

$2,566 per household
for wastewater alone

**Affordability
Threshold
Below Poverty Line**

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**

*Richmond 300 Master Plan

Communication

- ## Past:
  - RVAH2O
  - Citizen's Academy
  - State Water Commission
  - Press Conference and Tour of Shockoe Retention Basin with Congressman McEachin, Senator Kaine and Administrator Regan

- ## Going Forward
  - Final Plan Stakeholder Group
  - Combined Sewer System and Water Plant Tours

Summary

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Questions?