

RVAH20 Technical Stakeholder Meeting

Tuesday, October 25, 2022

Photo Credit: Greg Velzy,

Friends of the James River Park, Chesterfield County,
James River Outdoor Coalition, James River Advisory Council,
Historic Falls of the James Scenic River Advisory Committee



**RVA
H2O**

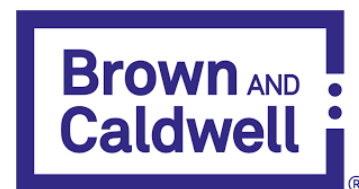
Welcome!

If you have access, feel free to put questions or comments in the chat as we go.

As always, we'll have Q&A at the end of the meeting today.



Thank You for Joining Us!



Supporting the park since 1997



Today's Agenda

National Recognition for Green Infrastructure

RVA Clean Water Plan

Green Infrastructure Projects

Greening Richmond Public Libraries

Flood Mitigation Projects

Interim Plan Projects Update

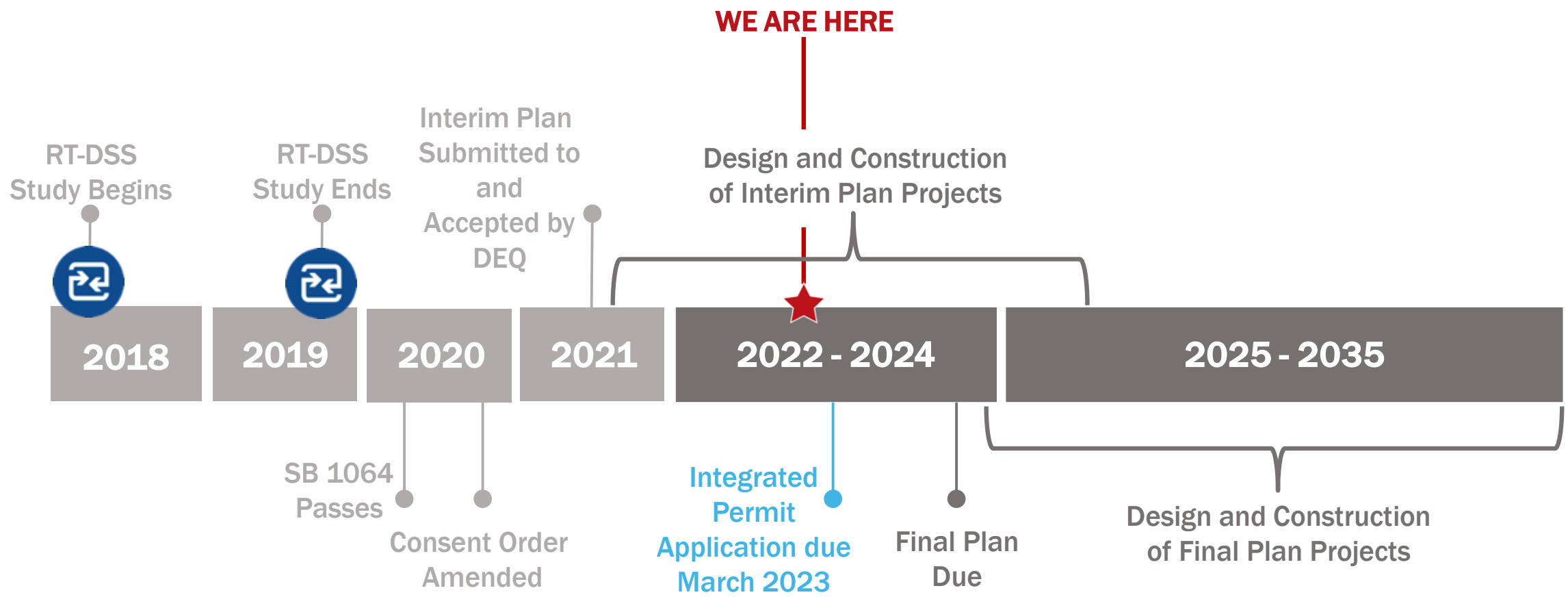
Final Plan Update



Water Environment Federation Award



Timeline





RVA Clean Water Plan

2017 – 2022 YTD



CSS Infrastructure

- WWTP Nutrient Removal
- CSS Separation
- WWTP Flow Upgrade



GI in MS4

- Target: 104 acres
- Achieved: 25.9 acres



GI in CSS

- Target: 18 acres
- Achieved: 5.2 acres

Photo Credit: Southside ReLeaf



2017 – 2022 YTD



Stream Restoration

- Target: 2,500 linear feet
- Achieved: 10,258 linear feet



Tree Canopy

- Target: 80 acres; 24,000 trees
- Achieved: 120.3 acres; 35,870 trees



Land Conservation

- Target: 10 acres of City property
- Achieved: 113 acres

Photo Credit: Southside ReLeaf



2017 – 2022 YTD



Natives & Invasives

- Target: 80% of plantings
- Achieved: 89.1% of tracked plants (42,884 native plants)



Water Conservation

- Target: 10% reduction of potable water consumption

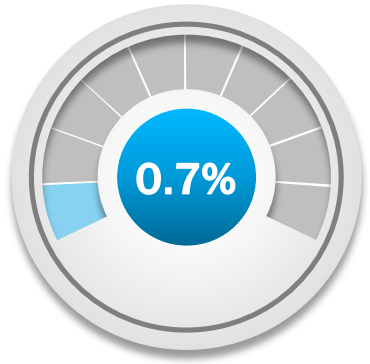


Pollution Identification & Reduction

- To be quantified



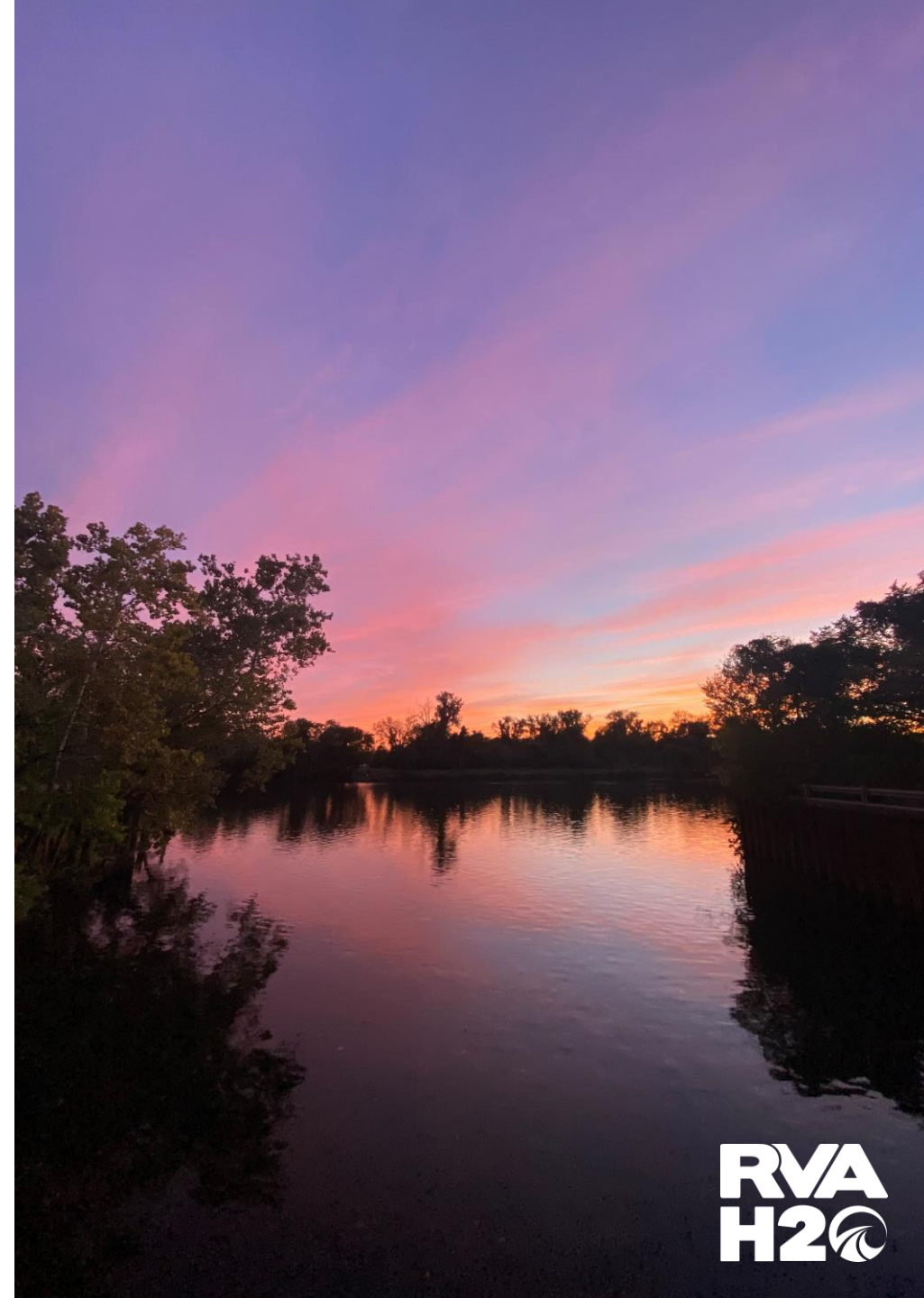
2017 – 2022 YTD



Riparian Area Restoration

- Target: 10 acres
- Achieved: 0.07 acres

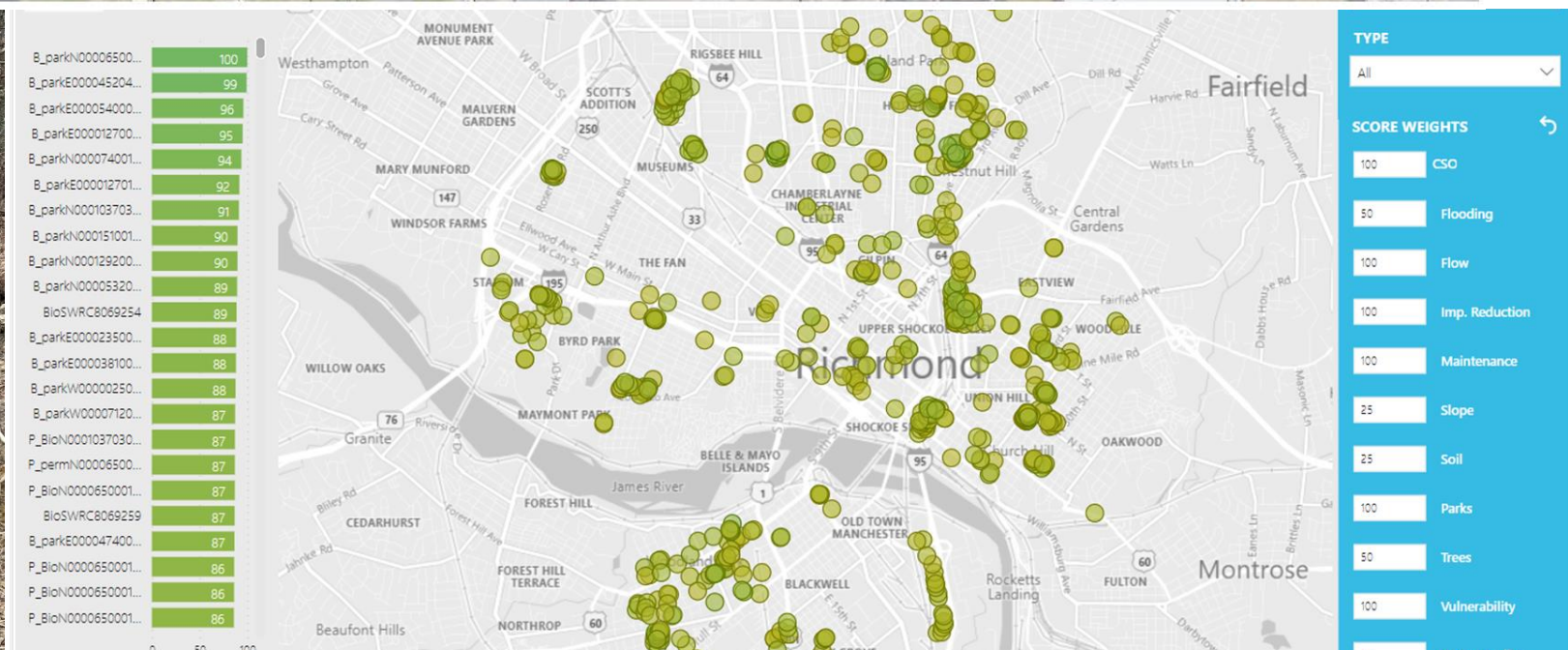
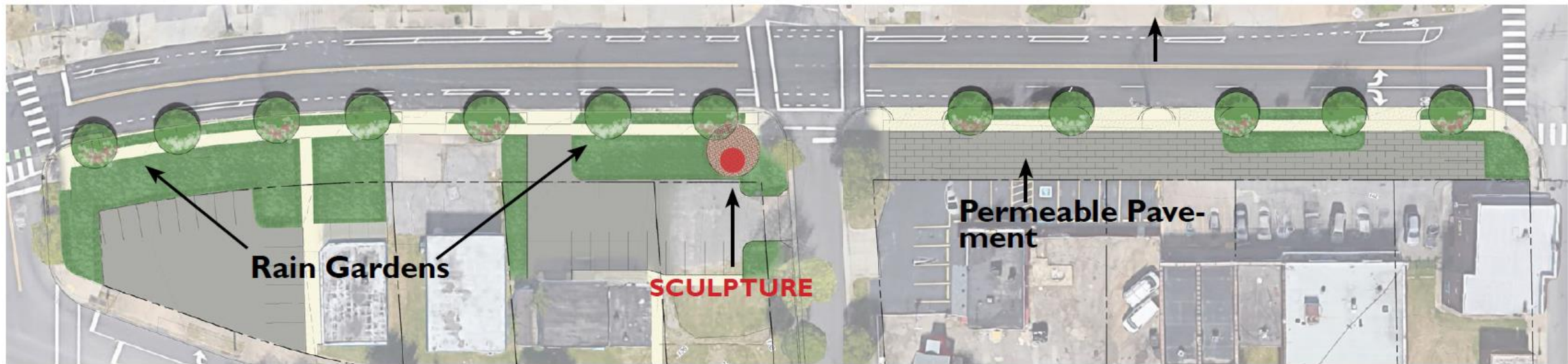
Your projects, and the metrics you help us to track, allow us all to reach these shared RVA Clean Water Plan goals!



The background is a solid dark blue color. On the left side, there are several overlapping, semi-transparent circular shapes in various shades of blue, creating a dynamic, layered effect. The text is centered horizontally and partially overlaps these shapes.

Green Infrastructure Projects

Green Infrastructure Projects



Greening Richmond Public Libraries

Justin Doyle, Director of Community Conservation
James River Association

jdoyle@thejamesriver.org

Greening Richmond Public Libraries

- The James River Association is working alongside Richmond Public Library, RVAH2O/Richmond Department of Public Utilities, and Four Winds Design to plan, design, and install **green infrastructure** at Richmond Public Library Branches
- Projects have been implemented at Broad Rock Branch, North Avenue Branch, West End Branch, and Westover Hills Branch to date
- The planning and design team sought input on **green infrastructure** and outdoor amenities that could be added around East End Branch in June



Applicable Green Infrastructure Practices

- Conservation landscaping
- Bioretention areas/rain gardens
- Street trees
- Pervious pavers



Westover Hills Branch
(2019)



North Avenue Branch
(2022)

Bioretention Basins at RPL Branches



West End Branch
(2022)



North Avenue Branch
(2022)

East End Branch Library

- Located at 1200 North 25th Street in Richmond's East End
- Opened in 1965
- Serves residents of Church Hill, Creighton Court, Fairfield Court, Fairmount, Fulton, Mosby Court, Oakwood, Shockoe Bottom, Union Hill, and Whitcomb Court



Greening Richmond Public Libraries

IMPROVING THE HEALTH OF THE JAMES RIVER BY REDUCING STORMWATER POLLUTION

East End Branch Library

1200 North 25th Street, Richmond, 23223

Legend:

- City Water Sampling Station
- Water Meter
- Gas Meter
- Electric Meter
- Backflow preventer
- City Street Lights
- City Utility Pole
- Hose Bib
- City Electrical Vault
- Gas Vault
- Clean out
- Bollard, 8
- Proposed Trash Can, 3
- Interpretive Sign
- Proposed Bioretention Basins
- Velocity reducer & trash/salt trap, see detail
- Bee Zone Markers, 10
- Bioretention basin inspection port, connect to underdrain, see notes
- Freestanding Trellis

Existing Trees & Shrubs To Be Preserved:

NOTES

THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES IS SHOWN ON THIS PLAN. CONTRACTOR TO CONTACT MISS UTILITY AND LOCATE GAS LINE CLOSEST TO PROPOSED IMPROVEMENTS ON R STREET.

CONTRACTOR TO ASSUME ALL RESPONSIBILITY FOR CONSTRUCTION METHODS EMPLOYED AND FIELD VERIFY ALL DIMENSIONS. ISSUES AND CONCERNS SHALL BE REPORTED TO FOUR WINDS.

CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS AT ALL TIMES DURING THE DEMOLITION AND BUILDING PROCESS.

NO PUBLIC THOROUGHFARES INCLUDING SIDEWALKS SHALL BE BLOCKED DURING DEMOLITION OR CONSTRUCTION WITHOUT PROPERLY DISPLAYED MUNICIPALITY PERMITS. NO HOLES SHALL BE LEFT OPEN OVERNIGHT WITHOUT SECURING PERIMETER FENCING OR INSTALLING CAUTION TAPE AROUND THE HOLE.

CONTRACTOR TO OBTAIN ALL BUILDING PERMITS, SOIL STUDIES, AND STRUCTURAL DETAILS AS REQUIRED BY THE MUNICIPALITY.

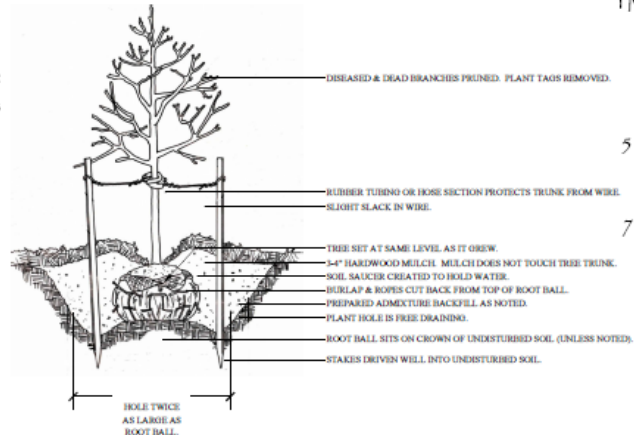
CONTRACTOR AND MASON AND SUBCONTRACTORS IF APPLICABLE TO ATTEND A PRECONSTRUCTION MEETING WITH JRA REPRESENTATIVES AND FOUR WINDS DESIGN.

CONTRACTOR TO DOCUMENT DEPTH OF EXCAVATION IN PROPOSED BIORETENTION AND PREVIOUS PAVED AREAS WITH PICTURES THAT SHOW MEASURING TAPE DIMENSIONS IN HOLES. THESE PICTURES SHALL BE EMAILED TO FOUR WINDS AS THEY ARE TAKEN. MINIMUM ONE PICTURE PER HOLE OR VARIOUS DEPTH APPLICATIONS.

THIS DRAWING SHALL BE PRINTED IN COLOR AND PRINTS TO SCALE ON 24"x36" PAPER. USING SMALLER PRINT SIZES IN THE FIELD IS NOT PERMISSIBLE. A COPY OF THE CITY APPROVED DRAWINGS AND STORMWATER PERMIT SHALL BE KEPT ON SITE AT ALL TIMES.

GRASS AND PERENNIAL SELECTION SUBJECT TO AVAILABILITY AT THE TIME OF INSTALLATION. ALL SPECIES WILL BE EAST COAST NATIVES.

Code	Botanical Name	Common Name	Quantity	Size
AR	Acer rubrum	Red Maple	4	1.75-2' Cal
AA	Aronia arbutifolia 'Lone Scape'	Red Chokeberry	10	3 Gal
CL	Chasmanthium latifolium	Sea Oats	89	1 Gal
CA	Clethra alnifolia 'Hummingbird'	Dwarf Clethra	9	3 Gal
GR	Gelsemium rankinii	Fall Carolina Jasmine	4	3 Gal
GS	Gelsemium sempervirens	Carolina Jasmine	4	3 Gal
IV	Ilex vomitoria 'Bordeaux'	Dwarf Yaupon Holly	6	3 Gal
IT	Itea virginica 'Marlot'	Sweetgum	10	3 Gal
JH	Juniperus horizontalis 'Bar Harbor'	Creeeping Juniper	11	3 Gal
MV	Magnolia virginiana	Sweetbay Magnolia	7	7-8'
PA	Panicum amaranum 'Dewey Blue'	Atlantic Coastal Panic Grass	103	3 Gal
PV	Panicum virgatum 'Heavy Metal'	Switch Grass	18	3 Gal
PV2	Panicum virgatum 'Shenandoah'	Switch Grass	6	3 Gal
RA	Rhus aromatica 'Low Grow'	Fragrant Sumac	14	3 Gal



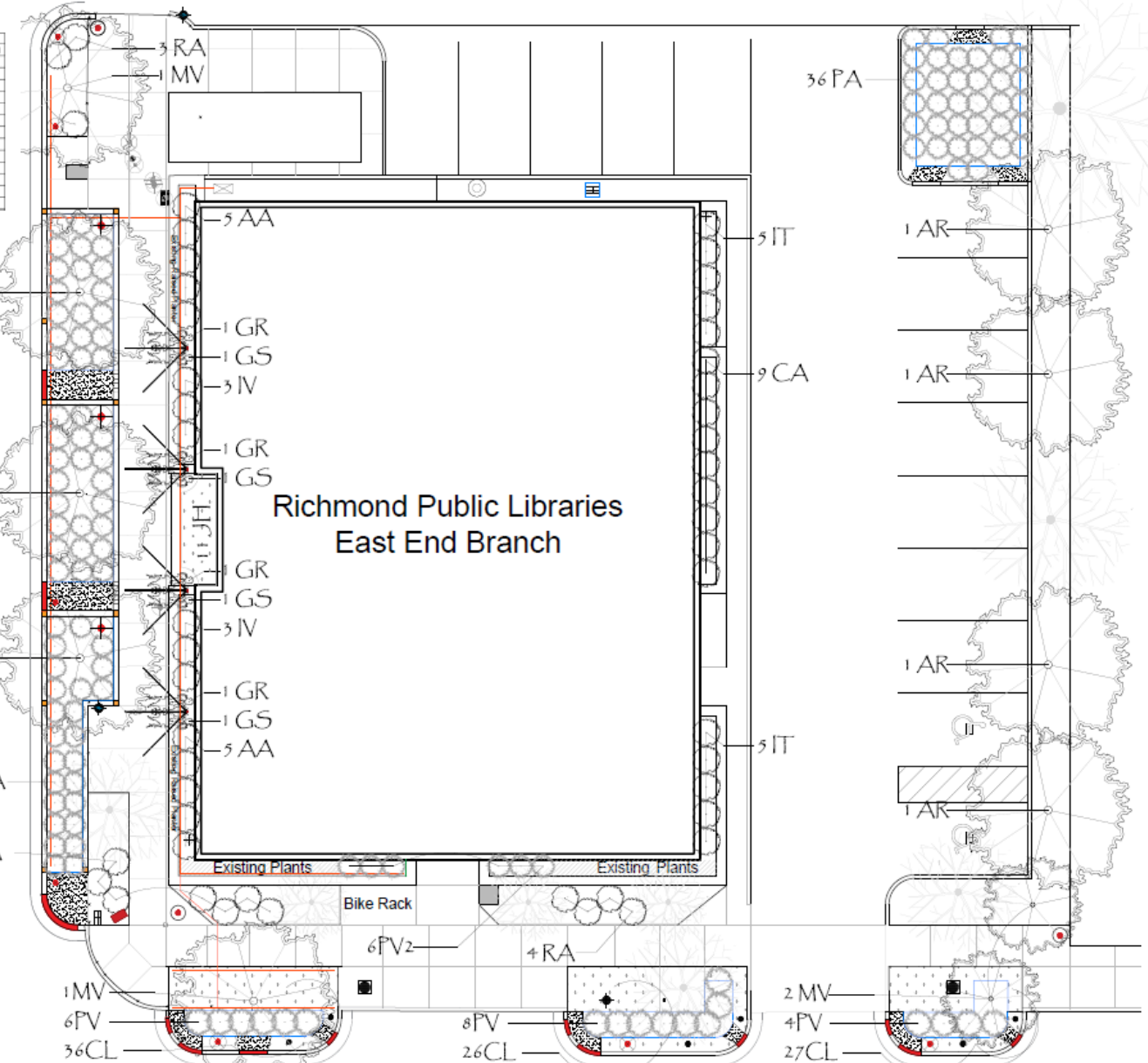
Tree Planting

Scale: none

Public Alley

R Street

Richmond Public Libraries East End Branch



25th Street

Existing Conditions at the East End Branch Library



Existing Conditions on R Street



Existing Alleyway Conditions



Existing Parking Lot Conditions



Native Plants at the East End Branch Library

Non-native plants on library grounds will be removed and replaced with native plants



Project Timeline

- **June 2022:** Community and stakeholder engagement
- **July 2022:** Conceptual plan
- **August – October 2022:** Contractor selection, plan review and revisions, approvals, and permits
- **November 2022:** Begin construction
- **Volunteer planting events at East End Branch to be scheduled (join us!)**
- **Street tree planting events at other library branches next week!**
- **Contact Information: Justin Doyle, Director of Community Conservation**
jdoyle@thejamesriver.org



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Flood Mitigation Projects

Flood Mitigation Projects

Please pardon our dust!

McGuire and Chapel Drive
Drainage Improvements Project
Construction Underway!

The Department of Public Utilities is creating solutions to reduce flooding occurrences in the neighborhood.



PHASE 1
PHASE 2

Please pardon our dust!

McGuire and Chapel Drive
Drainage Improvements Project
Construction Underway!

The Department of Public Utilities is creating solutions to reduce flooding occurrences in the neighborhood.

Timeline
Phase 1 construction activities have begun. Our teams will begin by staging necessary materials in the neighborhood.

Questions
Construction will

Thank you for your patience as these important improvements are made in the community!





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Interim Plan Projects Update

Interim Plan Projects

10 Projects

- Control overflows by **maximizing and using existing capacity** in the combined sewer system
- Estimated 182.3 MG capture

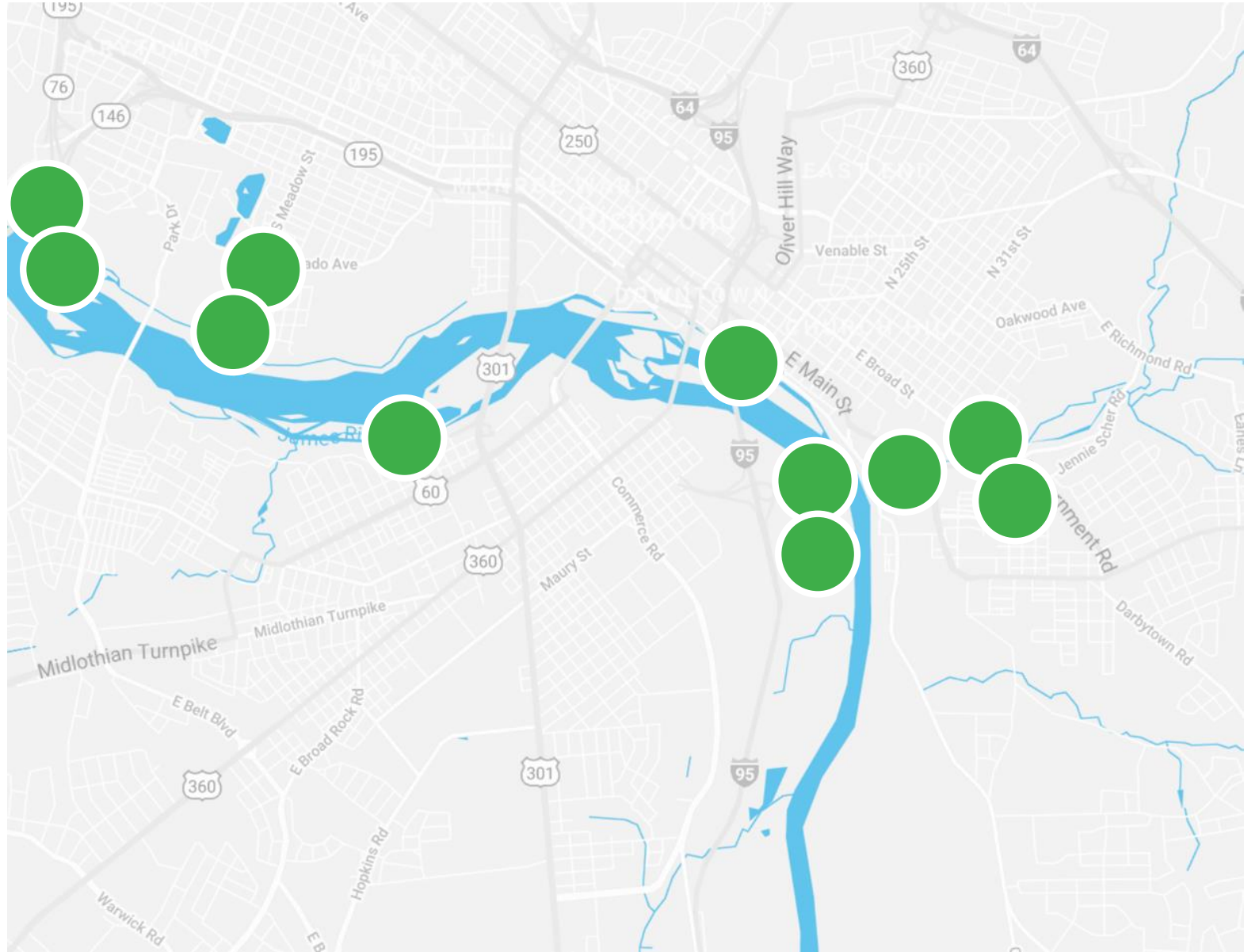
92% CSO Capture

Estimated Annual Basis

\$33.3M

July 1, 2027

Construction Deadline



Interim Plan Projects – Implementation Schedule

Year	2021		2022				2023				2024				2025				2026				2027	
Quarter	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2
Outfall 04																								
Level 1 Controls																								
Level 2 Controls																								
Outfalls 21 and 40 #1																								
Outfalls 19A, 19B, and 20																								
Outfalls 24 and 39																								



Construction Related Activities
(including design and procurement)



Construction



Interim Plan Project – Outfall 04

Divert additional wet weather flow to the Fulton Bottom Interceptor

Overflow Volume Reduction (MG)	5.1
Overflow Event Reduction (#)	48

Design Schedule



Design Update

- ☐ City Permit Review (Building, RSMP)
- ☐ Receive railroad crossing permit (CSX)
- ☐ Update design based on permit review comments

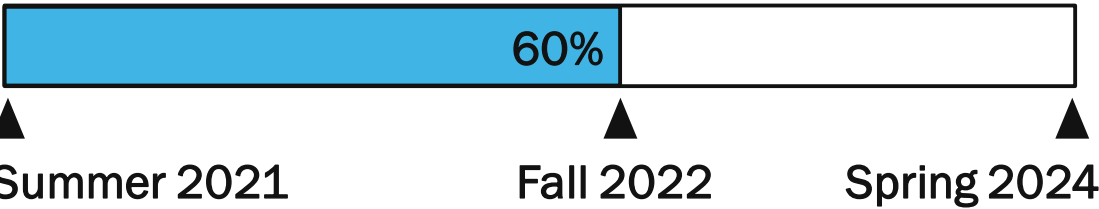


Interim Plan Project – Level 1 Controls

Automate Shockoe Retention Basin drainage (35 MG Storage)

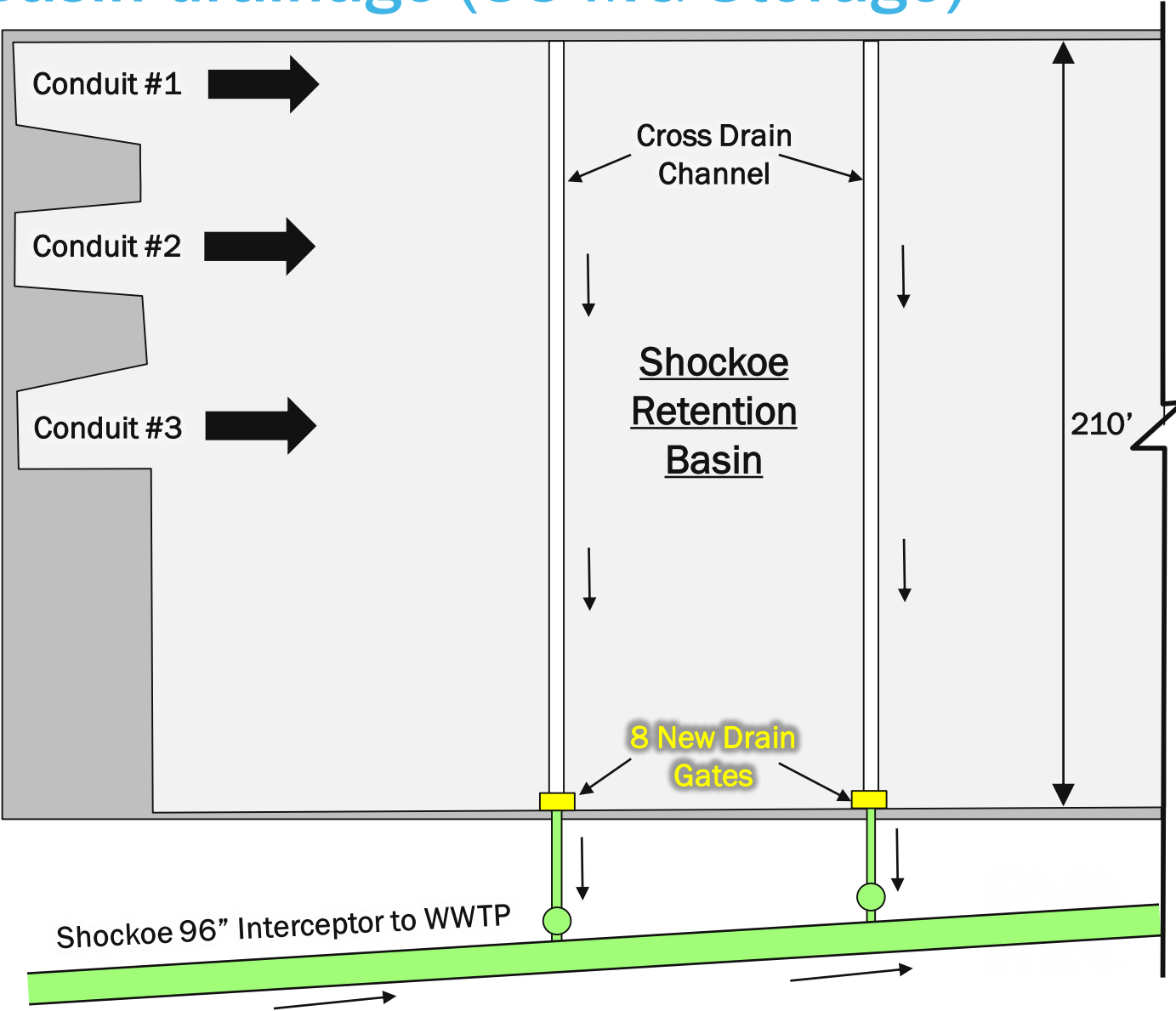
Overflow Volume Reduction (MG)	78.8
Overflow Event Reduction (#)	7

Design Schedule



Design Update

- ☐ Bringing Wet Weather SCADA designer under contract
- ☐ Advance the design of the Interim Plan project controls system

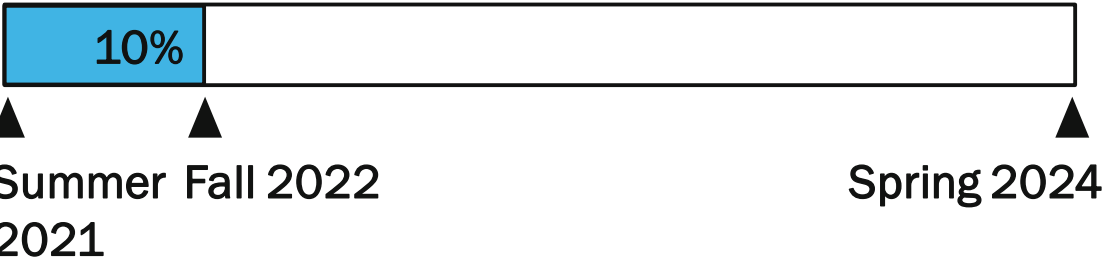


Interim Plan Project – Level 2 Controls

Maximize flow to Wastewater Treatment Plant (140 MGD)

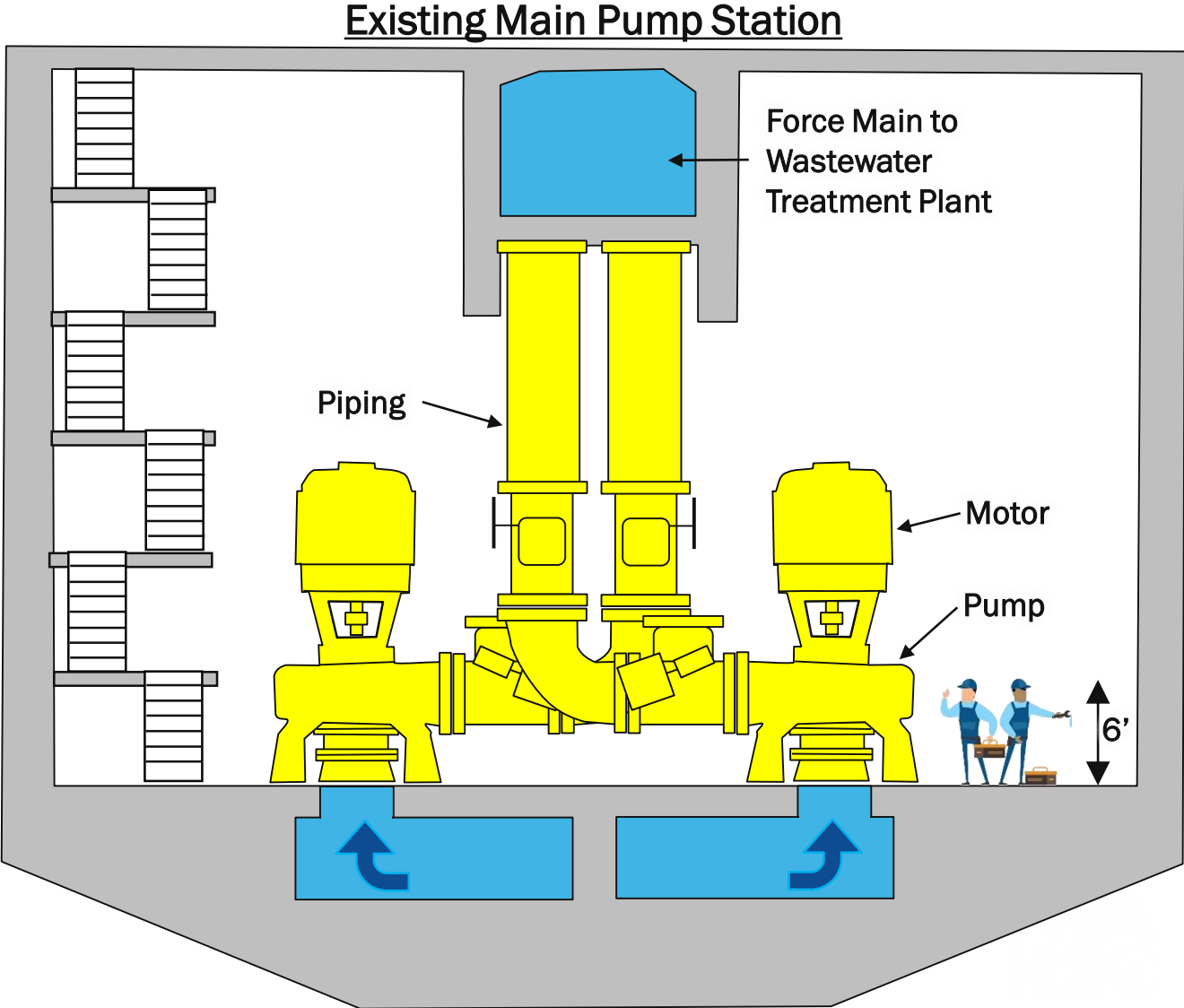
Overflow Volume Reduction (MG)	41.2
Overflow Event Reduction (#)	7

Design Schedule



Design Update

- ☒ PER Complete
- ☐ Begin the detailed design for the Level 2 Controls Project



Interim Plan Projects – Outfalls 21 and 40 #1

Store flow in upstream pipes

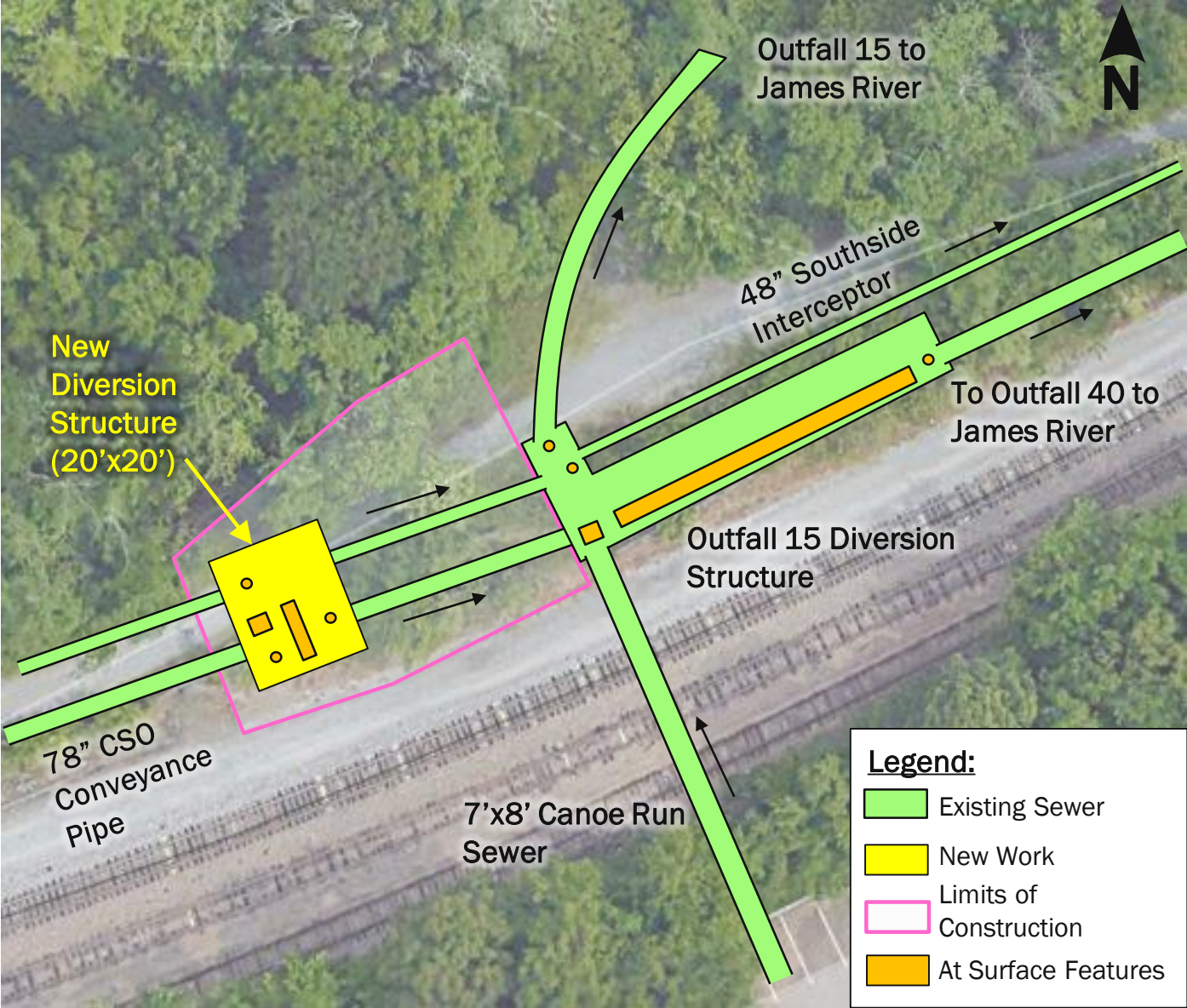
Overflow Volume Reduction (MG)	28.5
Overflow Event Reduction (#)	18

Design Schedule



Design Update

- ☒ City Permit Review (Building, RSMP)
- ☐ Receive railroad permit (Norfolk Southern)
- ☐ Update design based on permit review comments



Legend:

- Existing Sewer
- New Work
- Limits of Construction
- At Surface Features

Interim Plan Projects – Outfalls 19A, 19B, and 20

Divert flow to existing Hampton-McCloy Retention Tunnel

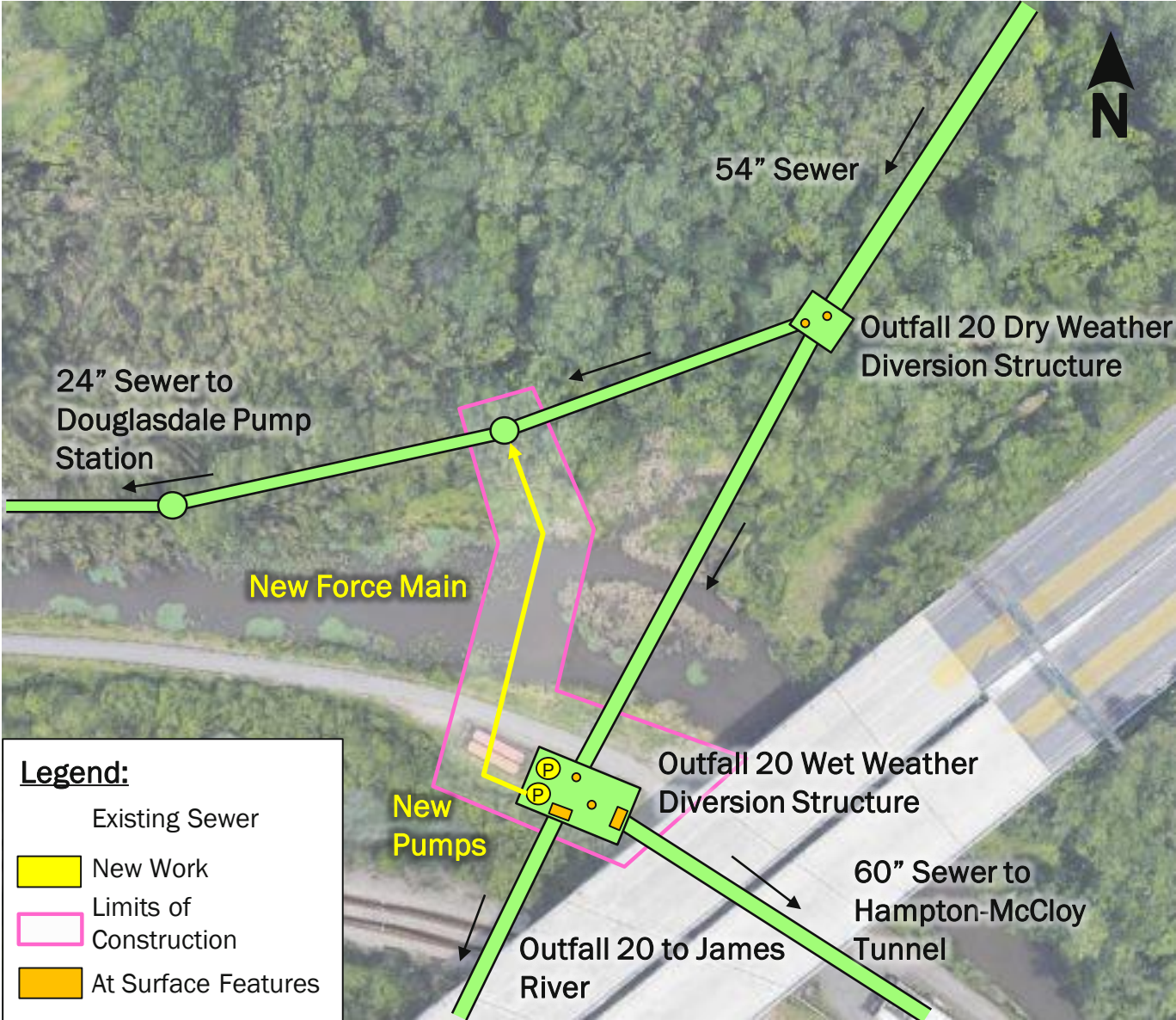
Overflow Volume Reduction (MG)	21.4
Overflow Event Reduction (#)	5

Design Schedule



Design Update

- ☒ City Permit Review (Building, RSMP)
- ☐ Progress the Outfall 20 Pump Station design
- ☐ Evaluate additional electrical improvements at the Hampton Pump Station

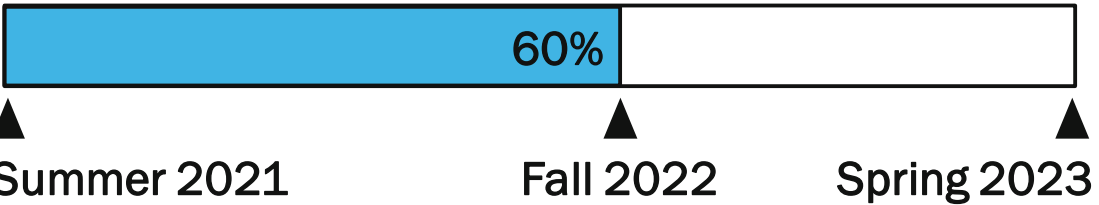


Interim Plan Projects – Outfalls 24 and 39

Divert additional wet weather flow to the Gillies Creek Interceptor

Overflow Volume Reduction (MG)	7.4
Overflow Event Reduction (#)	39

Design Schedule



Design Update

- ☐ Develop 90% design documents
- ☐ Evaluate options to get power to the Outfall 39 site



Interim Plan Projects – Implementation Schedule

Year	2021		2022				2023				2024				2025				2026				2027	
Quarter	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2
Outfall 04																								
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Construction Related Activities
(including design and procurement)



Construction



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Final Plan Update

Final Plan – Three solutions being evaluated

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

99% CSO Capture

Estimated Annual Basis

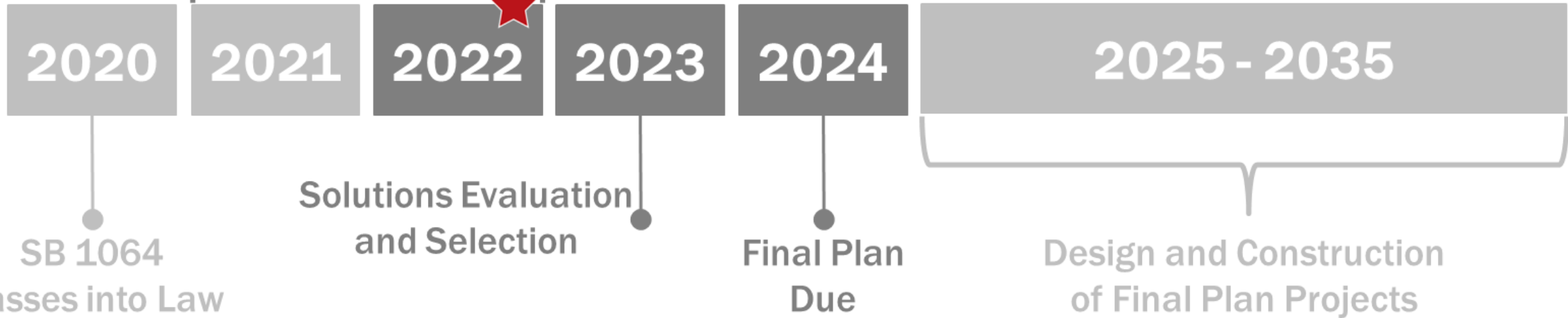
\$1.3B*

*in 2022 dollars

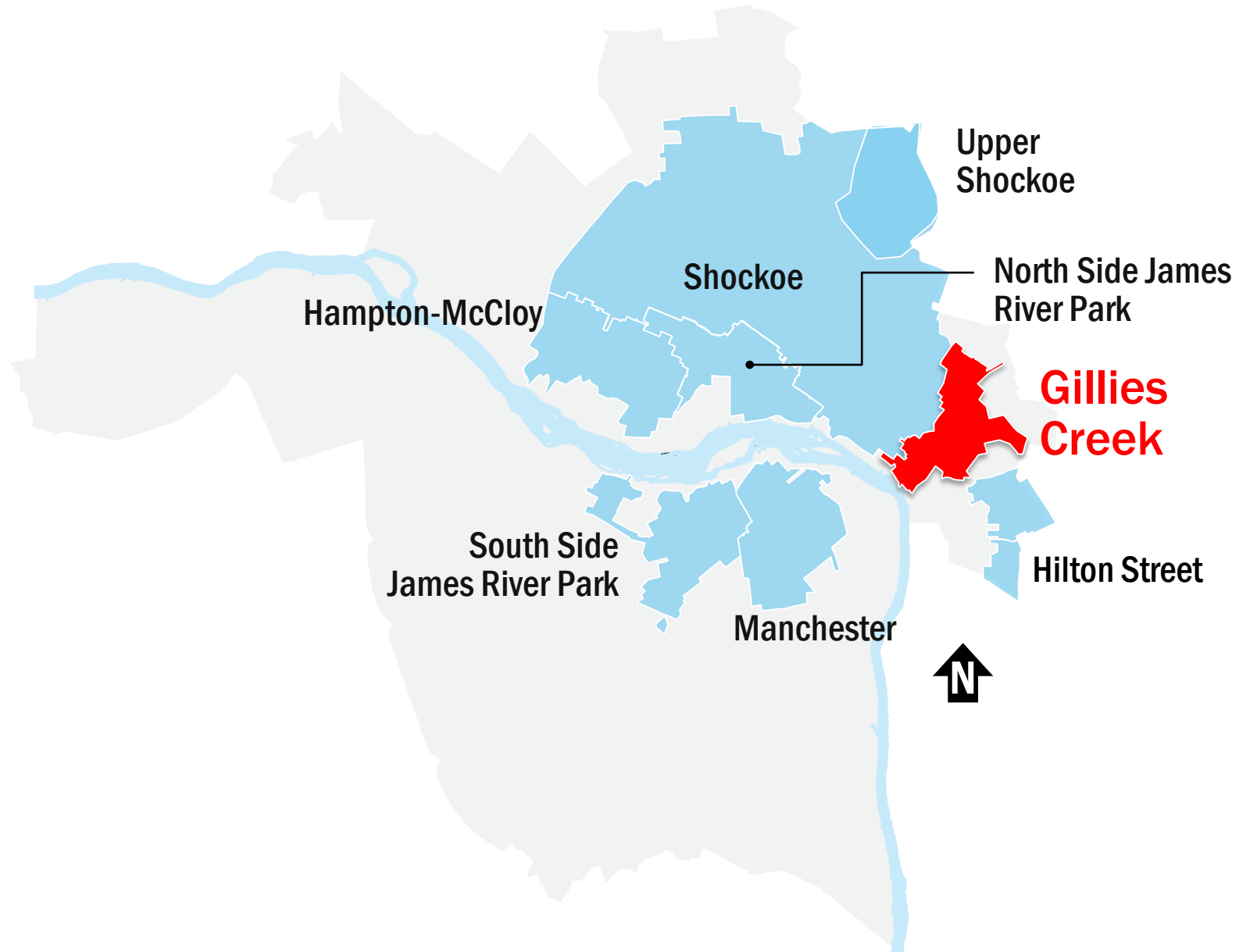
Final Plan Schedule Update

WE ARE HERE

System Characterization and
Solutions Identification



Solution Development Example

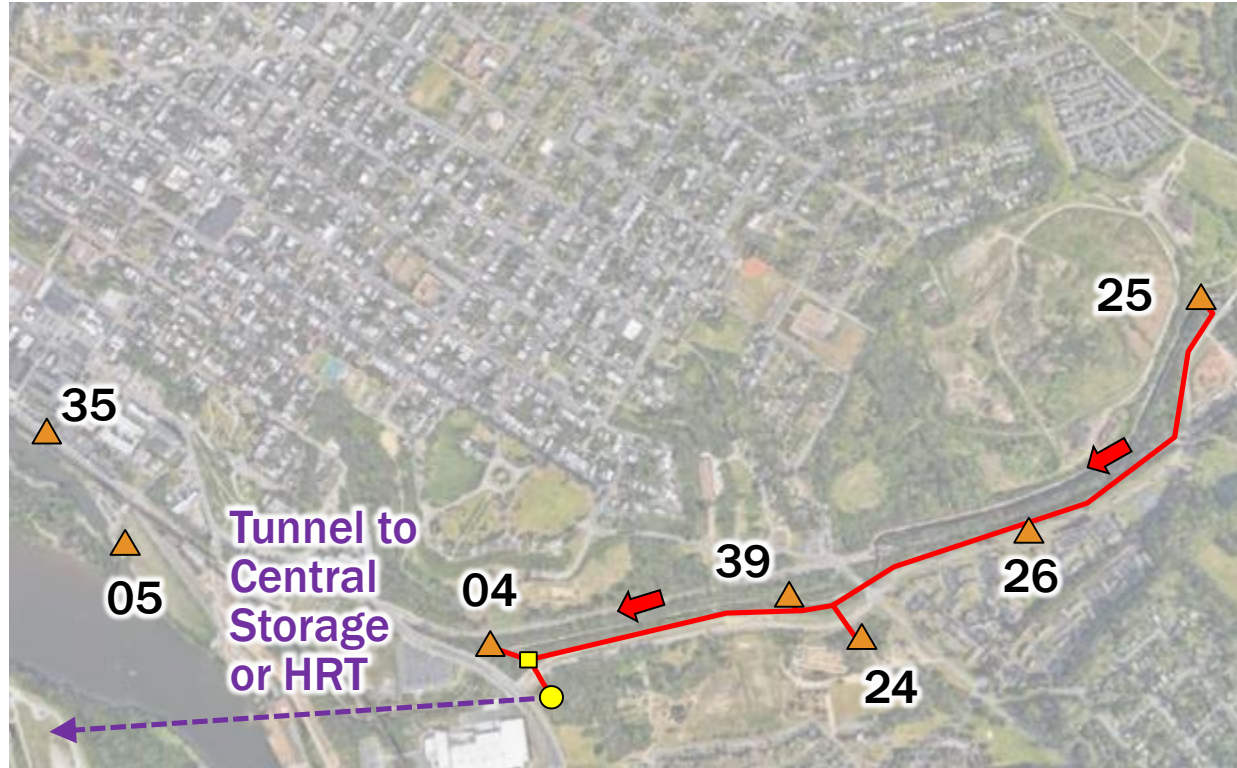


Problem Identification



Solution Identification

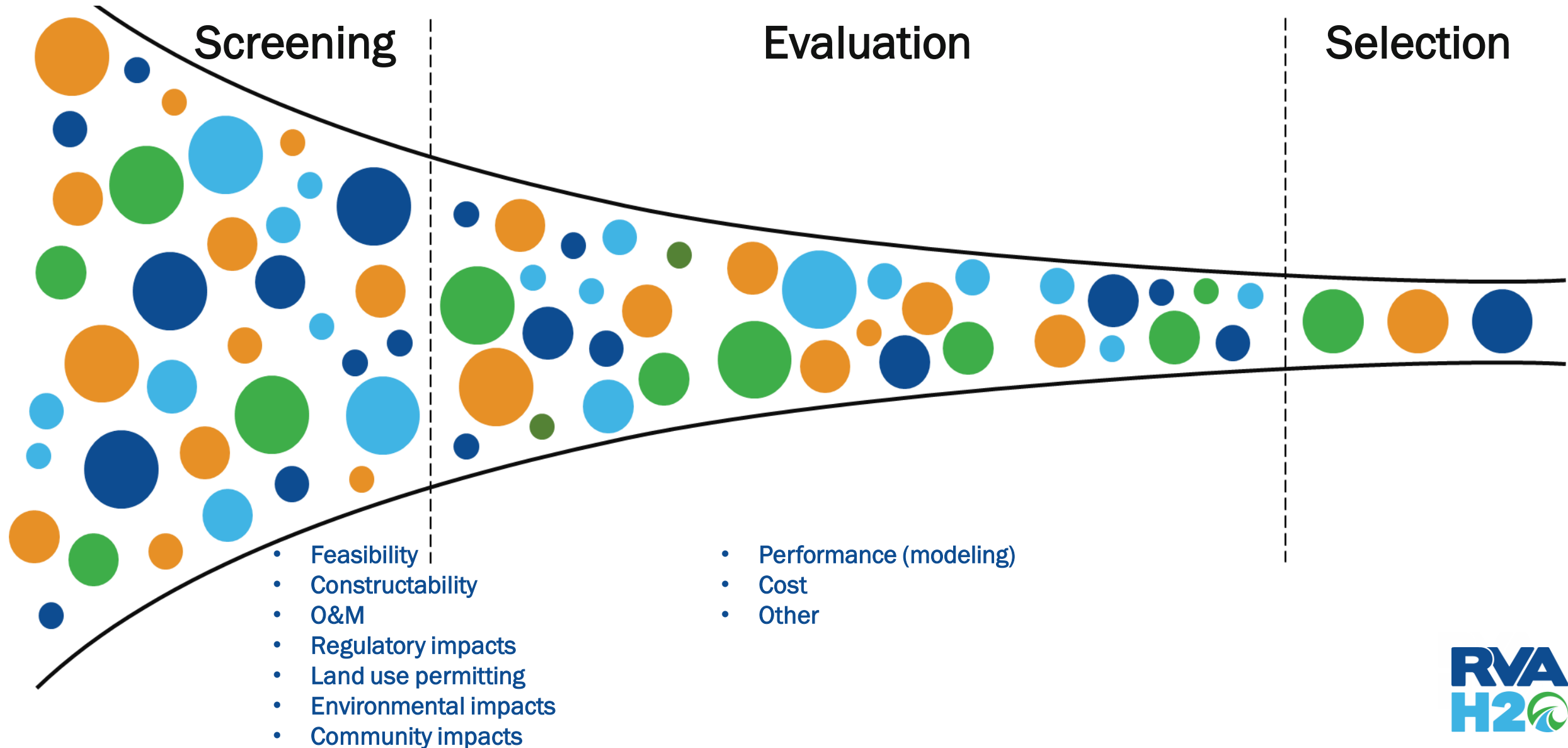
Option 1: Conveyance Sewer to Tunnel



Option 2: Conveyance Sewer to Remote Storage



Solution Screening and Evaluation



Solution Development Status



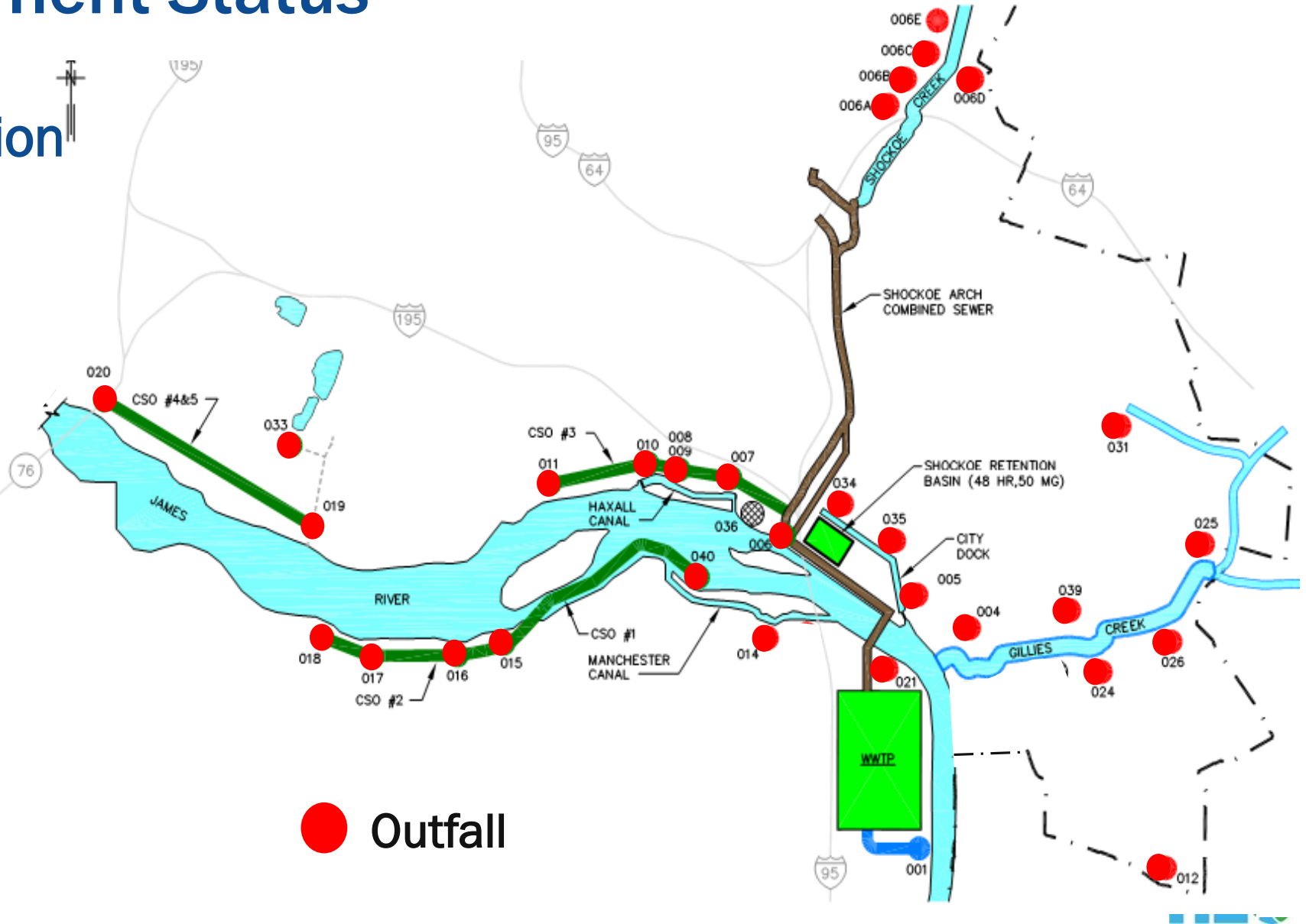
☒ Solution Identification

☐ Solution Screening

■ In Progress

☐ Solution Evaluation

■ Spring 2023





Public Stakeholder Group

Final Plan Public Stakeholder Group

18 members providing
community representation –
2 from each of the 9 City
Council Districts

Hearing new input,
perspectives, and insights

Helping Richmonders
understand progress made
and why this effort and work
is vital



Questions?

Please comment in the chat box or unmute!

NEXT MEETING
SPRING 2023



Grace.LeRose@rva.gov | www.rvah2o.org