North Hudson Sewerage Authority
CSO Long Term Control Plan

Public Meeting #3

Agenda:

1. Summary Overview/Status of LTCP Program
2. Ongoing LTCP Project Updates
3. LTCP Development
4. NHSA Social Media Update
5. Next Steps

August 19, 2019

Greetings and Introductions

(Please do sign in)

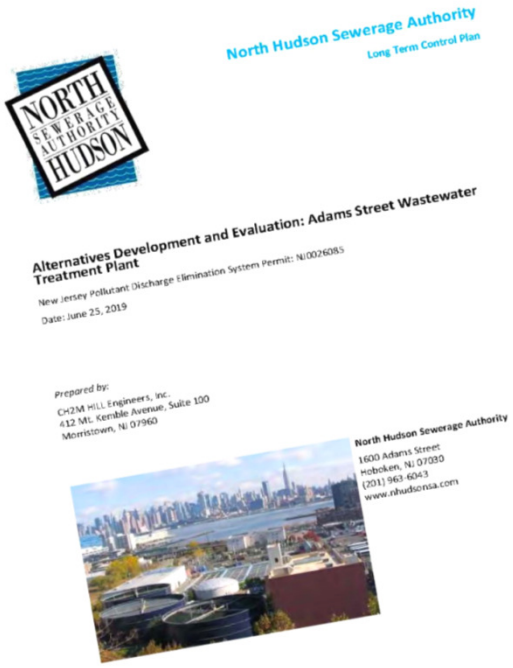
NJDEP Long Term Control Plan Requirements and Ongoing Activities

NJPDES LTCP Permit Requirements Met via a Series of Activities and Submittals to the NJDEP by June 1, 2020:

- System Characterization (Work Plans and Reports) – July 1, 2018 ✓
- Baseline Compliance Monitoring (Work Plans and Reports) – July 1, 2018 ✓
- Public Participation Process (Report) – July 1, 2018 ✓
- Identification and Consideration of Sensitive Areas (Report) – July 1, 2018 ✓
- Develop and Evaluate CSO Control Alternatives (Report) – July 1, 2019 ✓
- Select Alternatives and Plan Implementation of the LTCP (Report) – June 1, 2020

Performed as a LTCP Program with a Consultant Program Manager and a series of projects performed by the Authority's Engineering Consultants

Development and Evaluation of Alternatives Reports
Submitted to NJDEP June 26, 2019


North Hudson Sewerage Authority
Long Term Control Plan

Alternatives Development and Evaluation: Adams Street Wastewater Treatment Plant

New Jersey Pollutant Discharge Elimination System Permit: NJ0026085

Date: June 25, 2019

Prepared by:
CH2M HILL Engineers, Inc.
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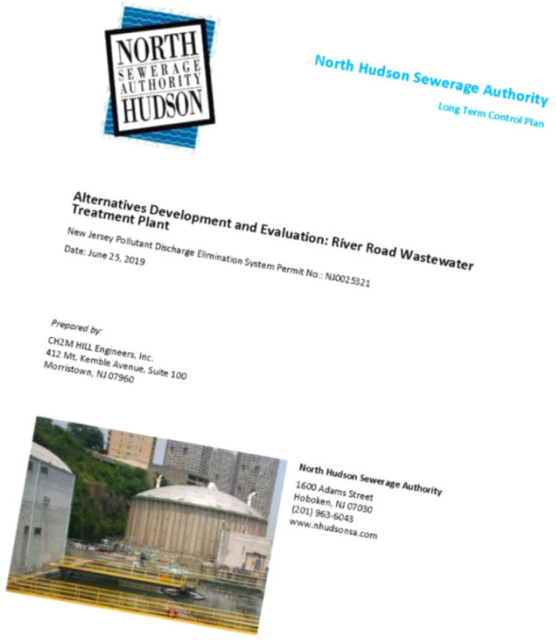
North Hudson Sewerage Authority
Long Term Control Plan

Alternatives Development and Evaluation: River Road Wastewater Treatment Plant

New Jersey Pollutant Discharge Elimination System Permit No.: NJ0025321

Date: June 25, 2019

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Can be downloaded at: https://www.nj.gov/dep/dwq/cso-ltcpsubmittals.htm

Where Are We on Developing the LTCP?

Characterization

- ✓ Work Plans
- ✓ Field Work
  - ✓ Condition Assessment
  - ✓ Sewer Flow Monitoring
  - ✓ CSO Water Quality (WQ) Monitoring
  - ✓ Hudson River WQ Monitoring
- ✓ Identify Sensitive Areas
- ✓ Engineering
  - ✓ Land Use and Drainage Analyses
  - ✓ Hydraulic Sewer Modeling
  - ✓ Hudson River WQ Modeling
- ✓ Public Participation
- ✓ Reports

Engineering Alternative Evaluation

- ✓ Establish CSO Reduction Targets
- ✓ Identify Opportunities with Communities to Reduce CSOs
- ✓ Identify and Evaluate CSO Control Strategies and Technologies
- ✓ Estimate Potential Project Costs
- ✓ Assess Cost/Performance for Potential Projects
- ✓ Report

Long Term Control Planning

- ❑ Assess Financial Capability
- ◔ Select Strategies and Controls
- ❑ Select Funding Mechanisms
- ❑ Develop Schedule for Implementation
- ❑ Finalize LTCP
- ❑ Report

Key:

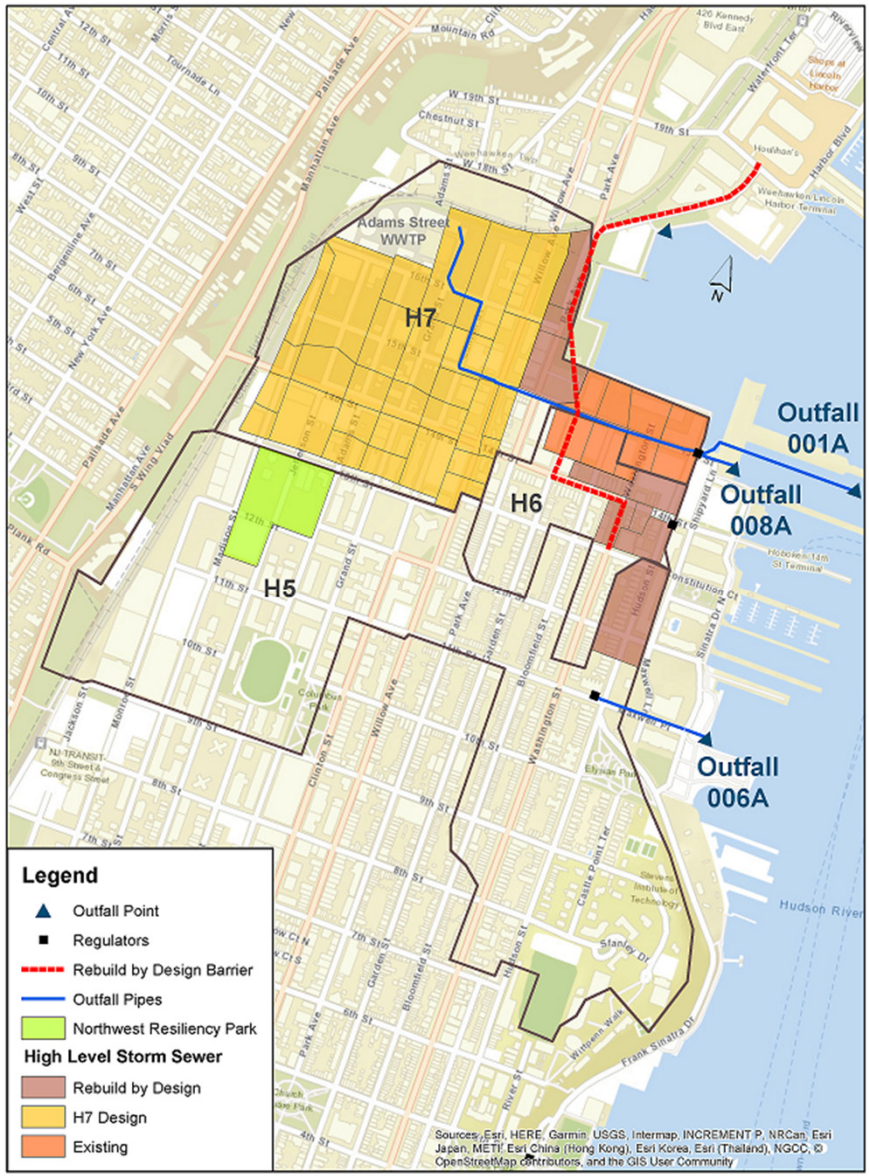
◔ Ongoing

✓ Completed

Ongoing Long Term Control Plan Project Updates

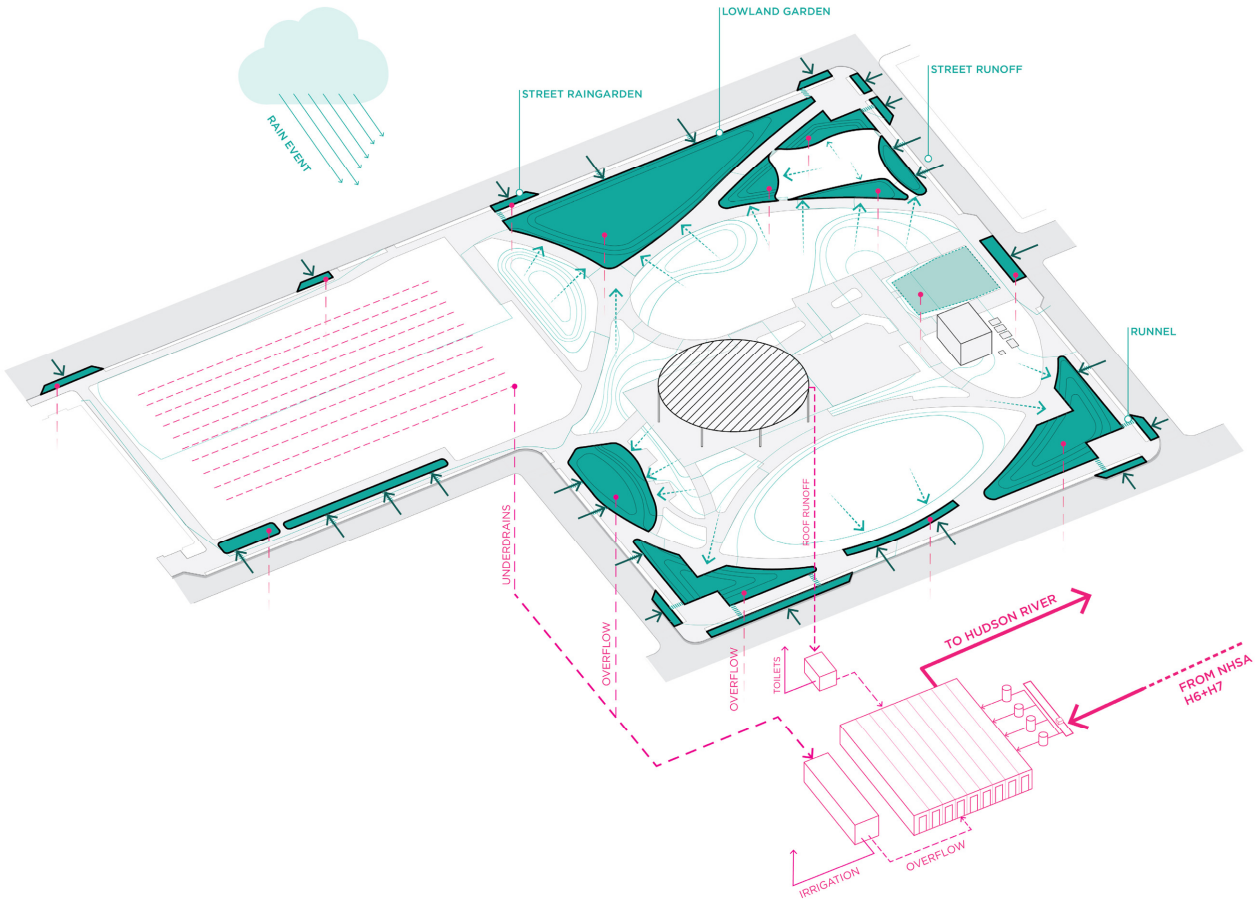
H6/H7 CSO LTCP Project

- Project Need:
  - Reduce CSOs at for LTCP
  - Improve long-term Resilience
- Project Goals:
  - Reduce CSOs at H6/H7 Outfall 008A
  - Reduce/eliminate street flooding
  - Integrate with Hoboken GI Plan
  - Integrate with Rebuild by Design
- Project Approach:
  - Work collaboratively with Hoboken on its Northwest Resiliency Park
  - New High-level Storm Sewers
  - CSO controls
- Status
  - Hoboken – Selected a Construction Contractor
  - NHSA 90% design, RFP Phase 1 Services During Construction, submitting permits



New High Level Storm Sewer System

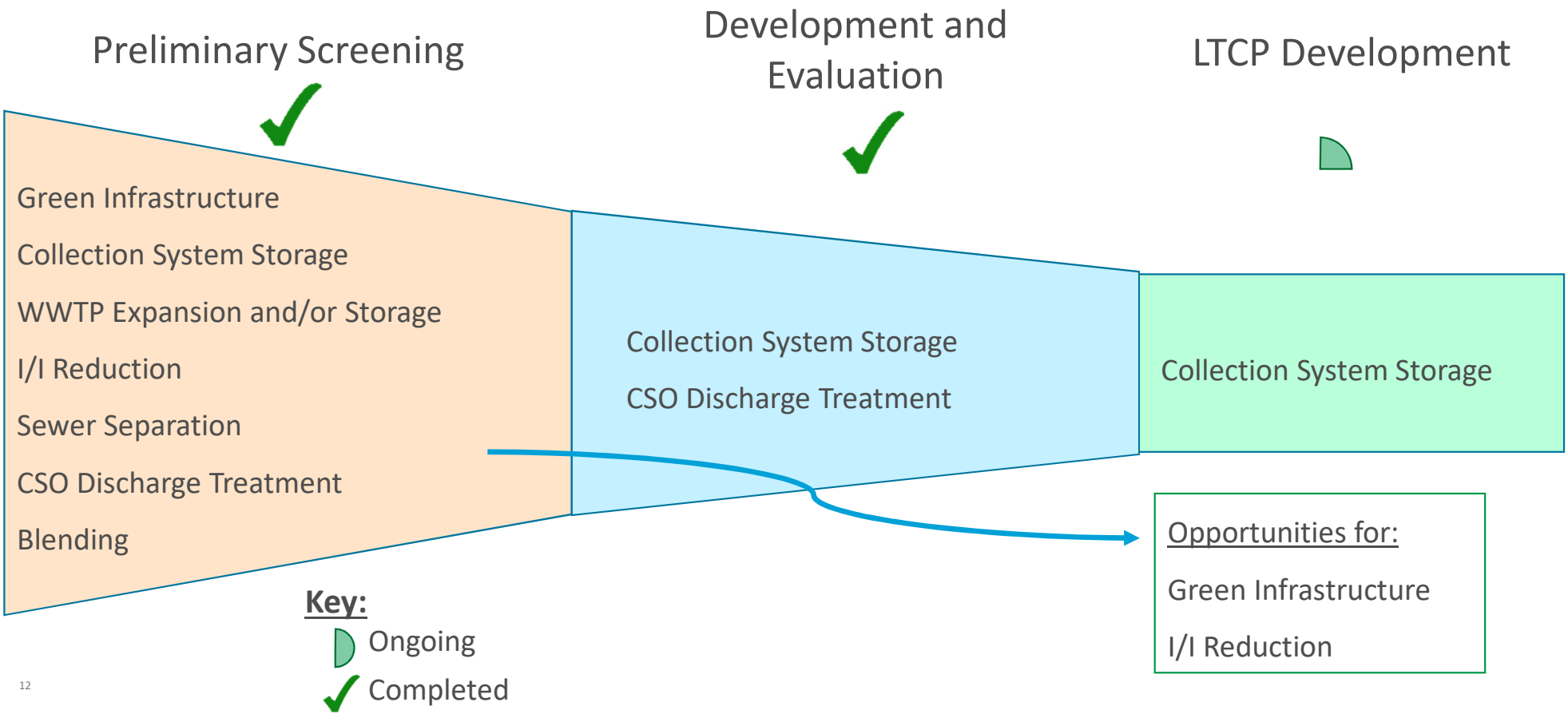
Northwest Resiliency Park Green Infrastructure, Storage and Conveyance



Source: Hoboken Northwest Resiliency Park website http://nwpark-cityofhoboken.opendata.arcgis.com/

Long Term Control Plan Development

CSO Control Identification, Evaluation and Selection Process Example

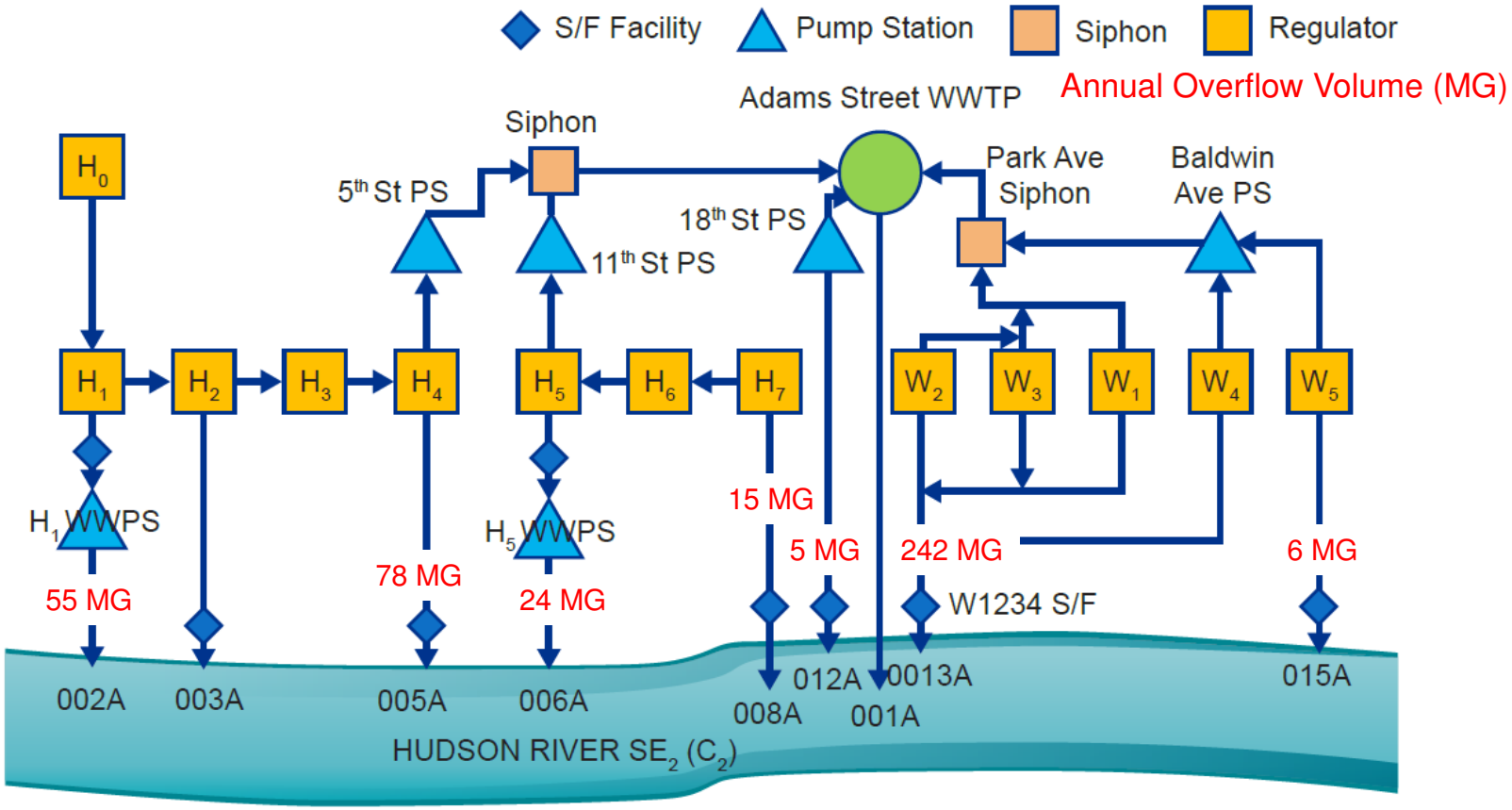


LTCP Development Approach

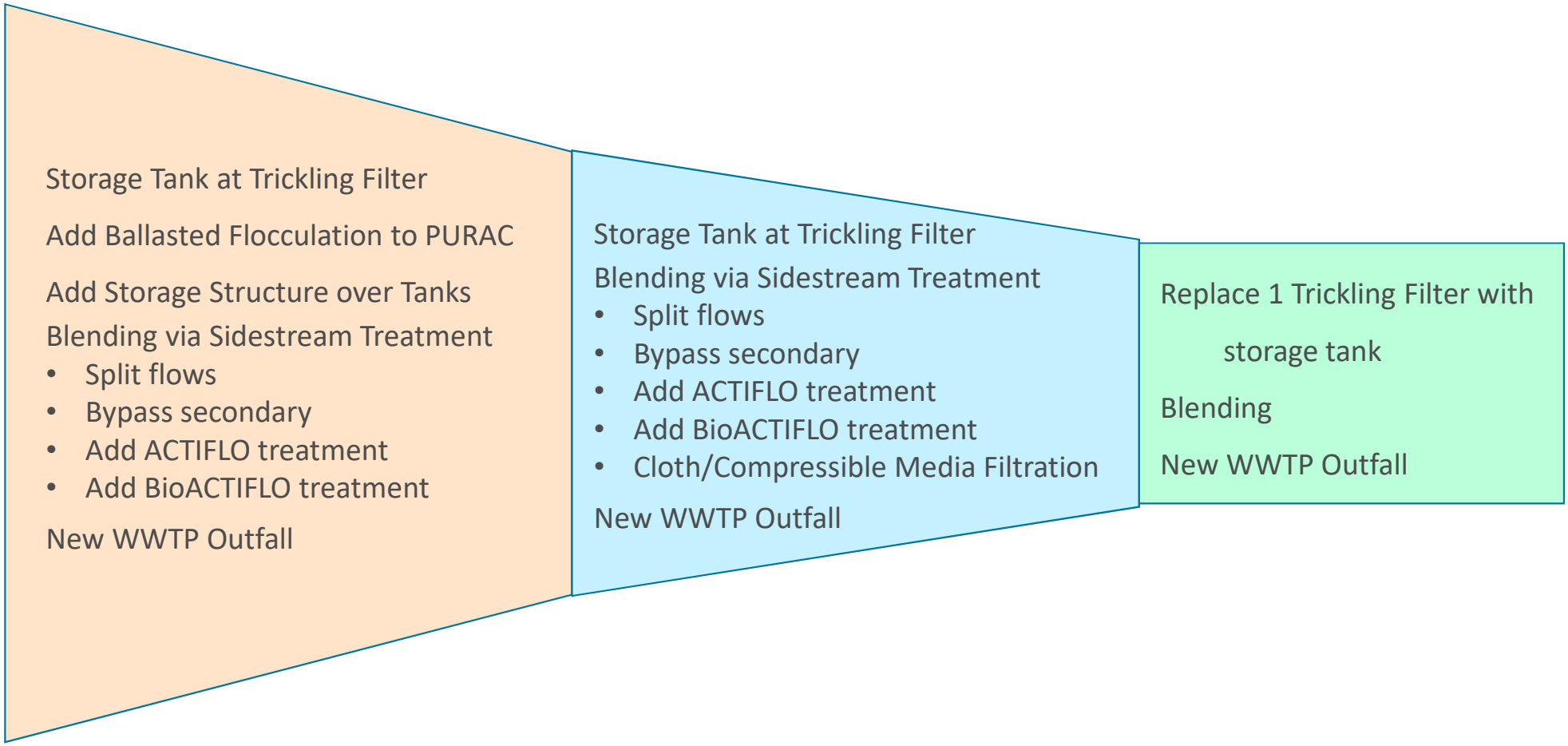
- Goal: Achieve 85% wet weather volume capture annually
- Planning Process:
  1. Build baseline condition with all committed projects (e.g. closing H2, H6/H7 project, GI, I/I)
  2. Optimize strategies to achieve maximum flow through the WWTPs
  3. Upgrade conveyance capacity to eliminate any bottlenecks for maximizing flow to the WWTPs
  4. Plan for storage in drainage areas to achieve capture

LTCP Development - Adams Street

NHSA Adams Street Collection System Schematic

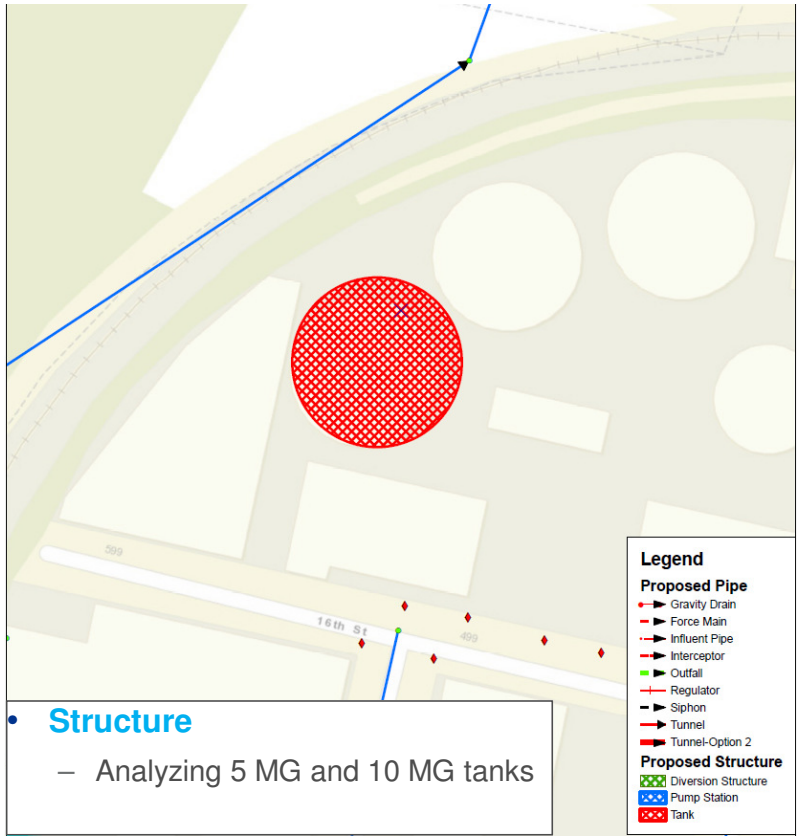


Adams Street WWTP



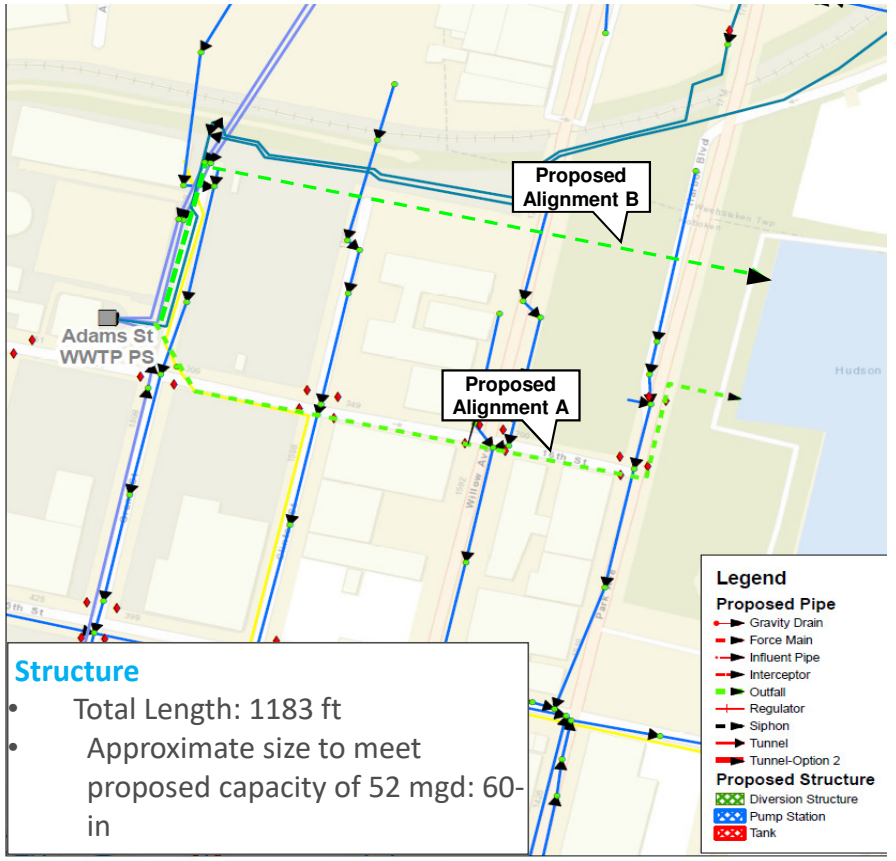
Adams Street WWTP

Install Storage Tank at Trickling Filter



- **Structure**
  - Analyzing 5 MG and 10 MG tanks

Construct New Plant Outfall



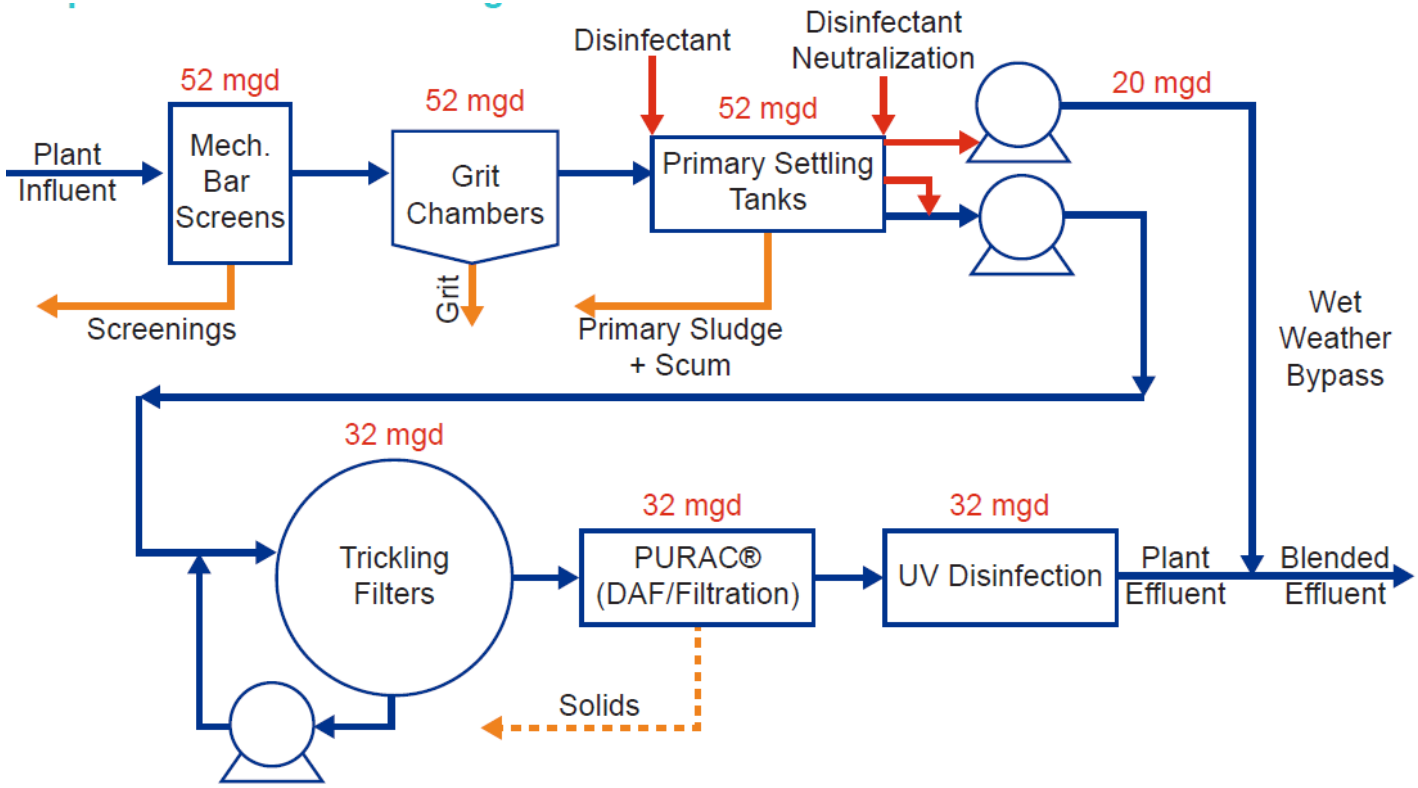
Structure

- Total Length: 1183 ft
- Approximate size to meet proposed capacity of 52 mgd: 60-in

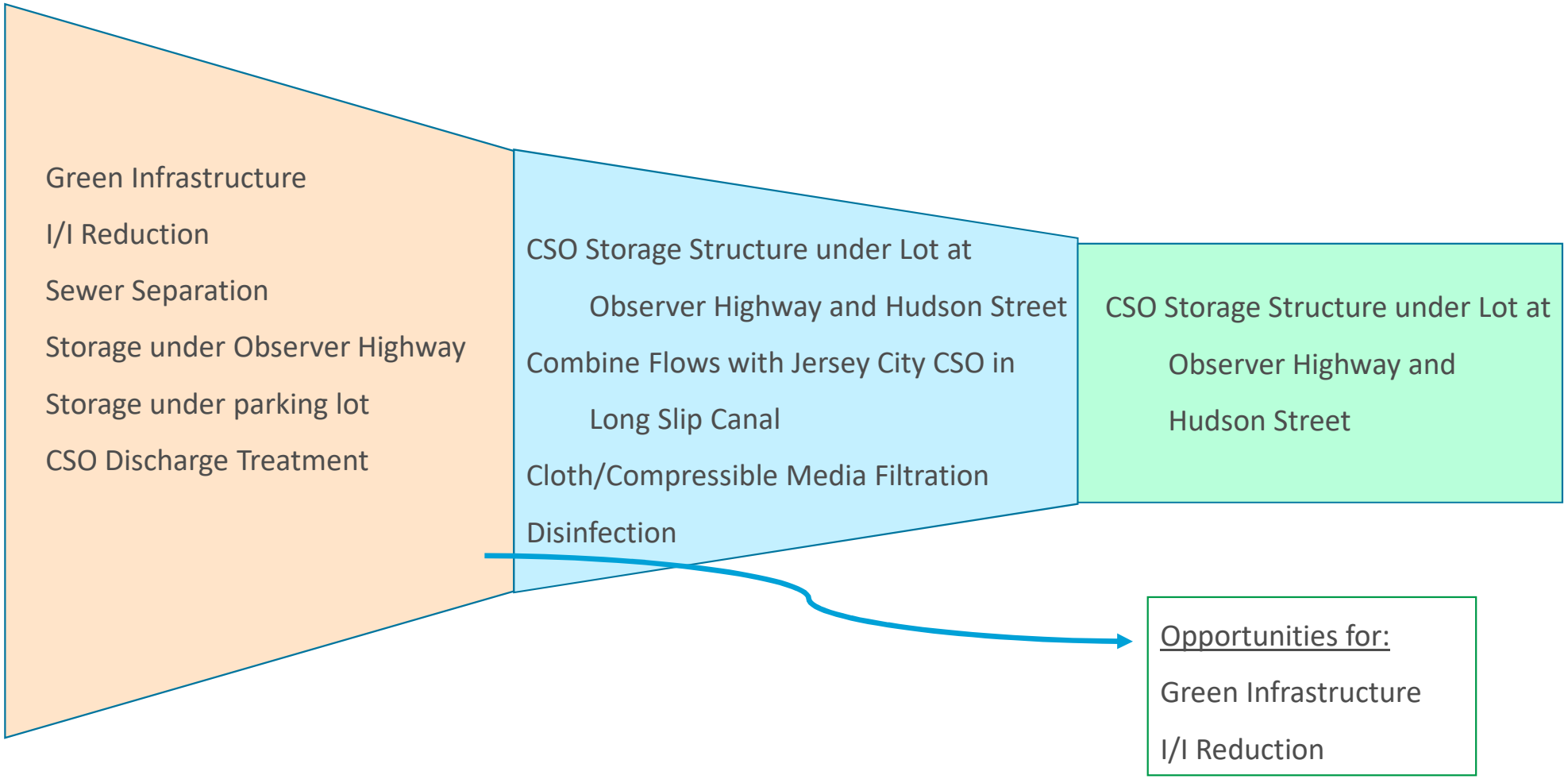
Adams Street WWTP

Blending Disinfected Primary Effluent with Secondary UV Disinfected Effluent to Allow for Increased Capacity at the WWTP

Proposed Process Flow Diagram

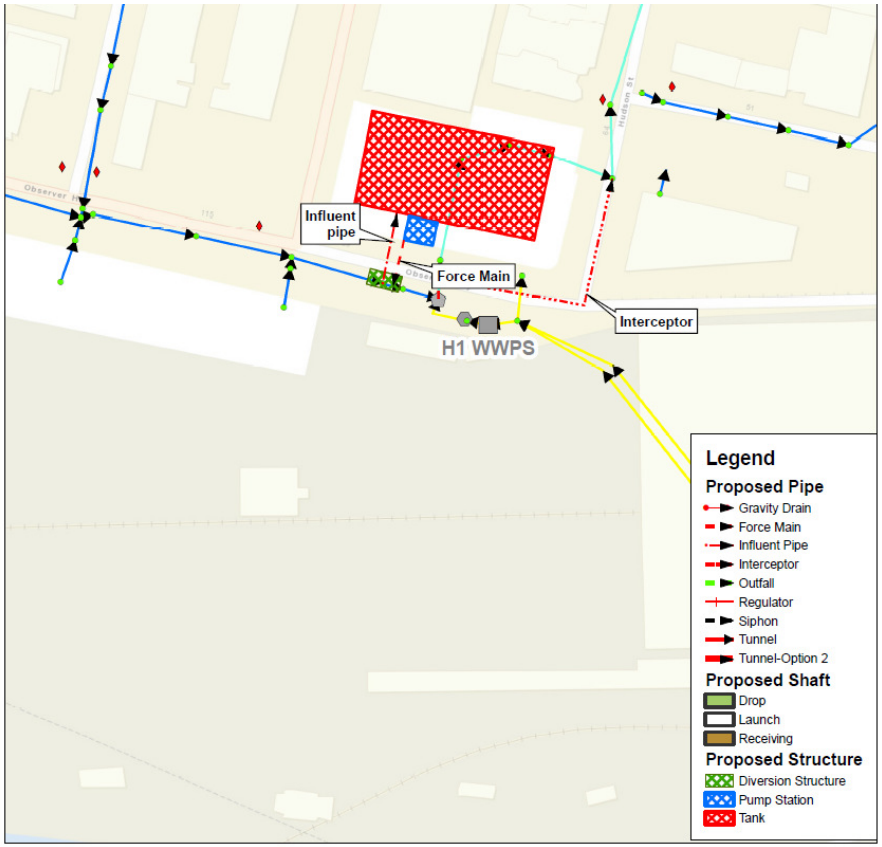


Outfall 002A (H1 Drainage Area - South Hoboken)

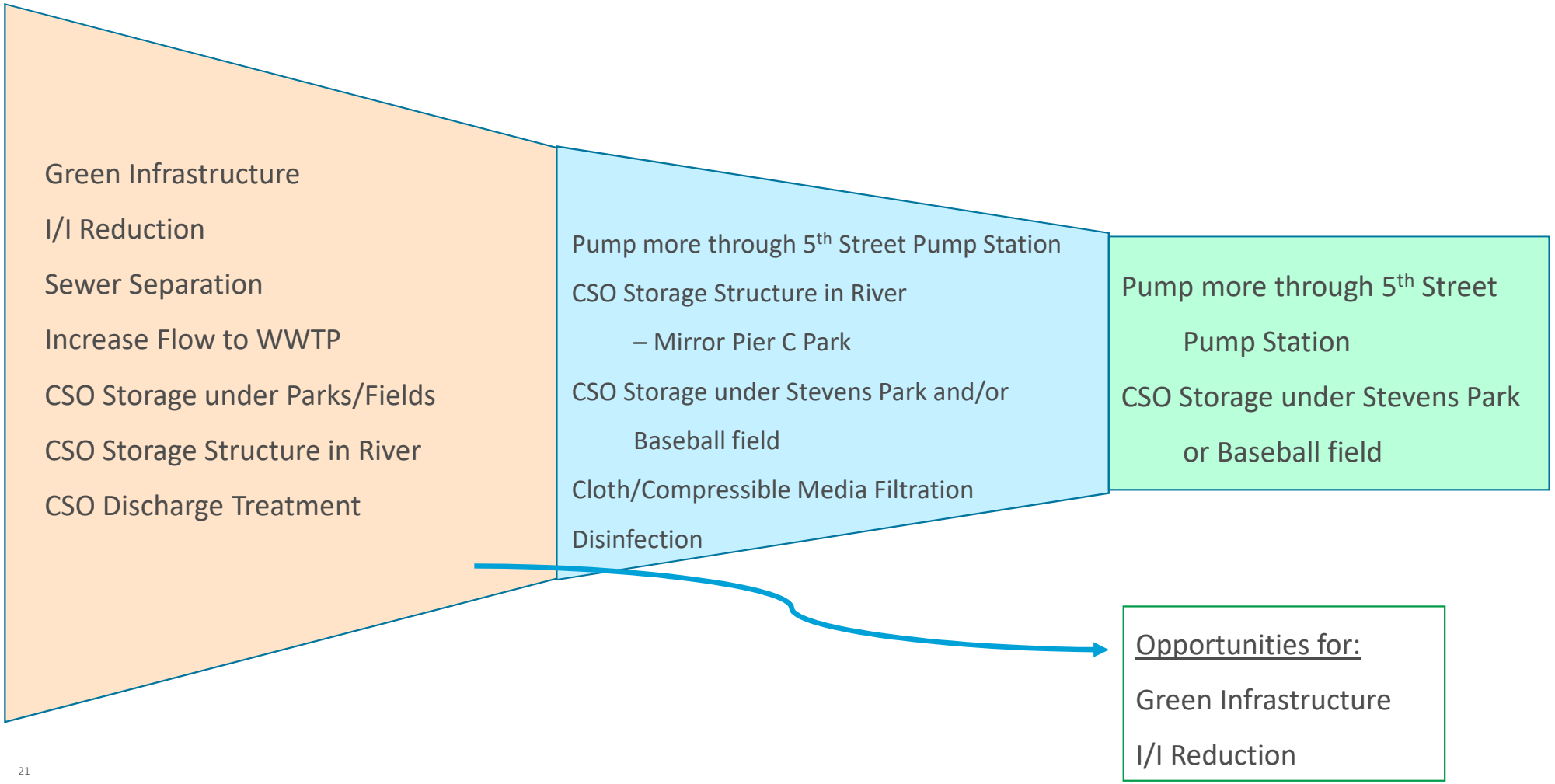


Outfall 002A

CSO Storage Structure at Lot at Observer Highway and Hudson Street

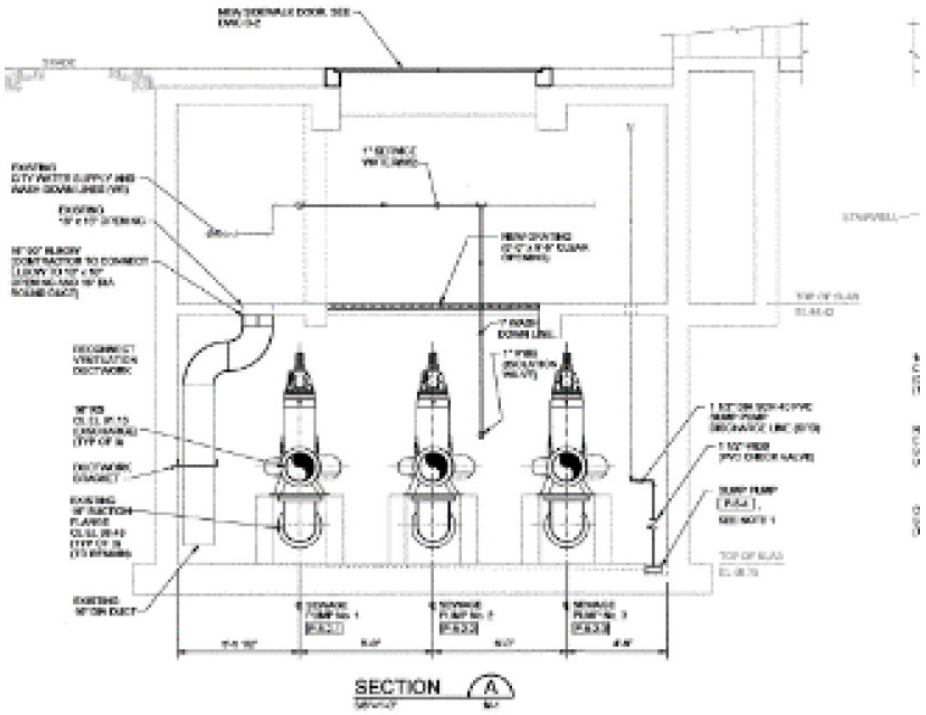


Outfall 005A (H3/H4/HSI Drainage Area - Central Hoboken)



Outfall 005A

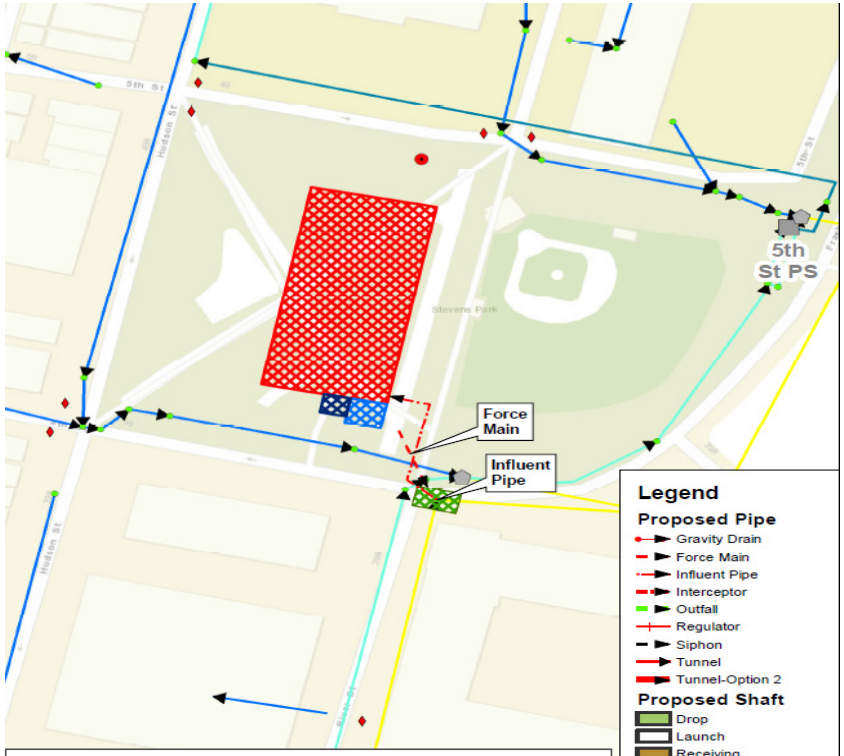
Increase Flows to WWTP through 5th Street Pump Station



- **General**
  - Adjust H3 and H4 regulator weirs
  - Increased peak pumping rate from 15.8 MGD to 31 MGD
  - Upstream capacity and piing downstream of pump station will need to be monitored

Outfall 005A

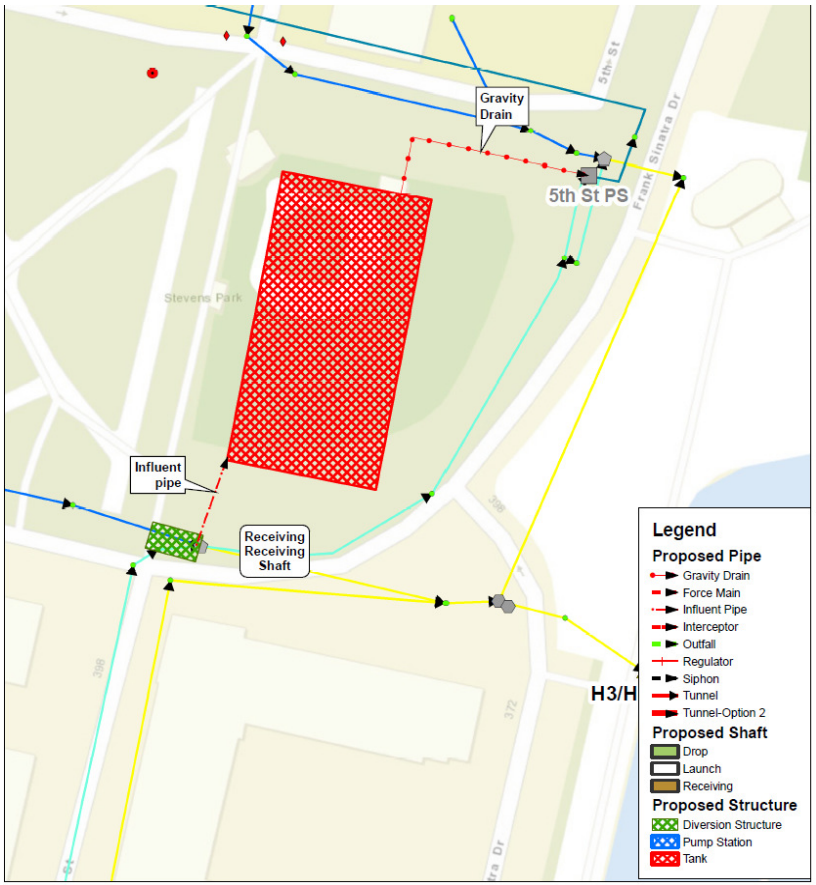
CSO Storage Structure at Stevens Park



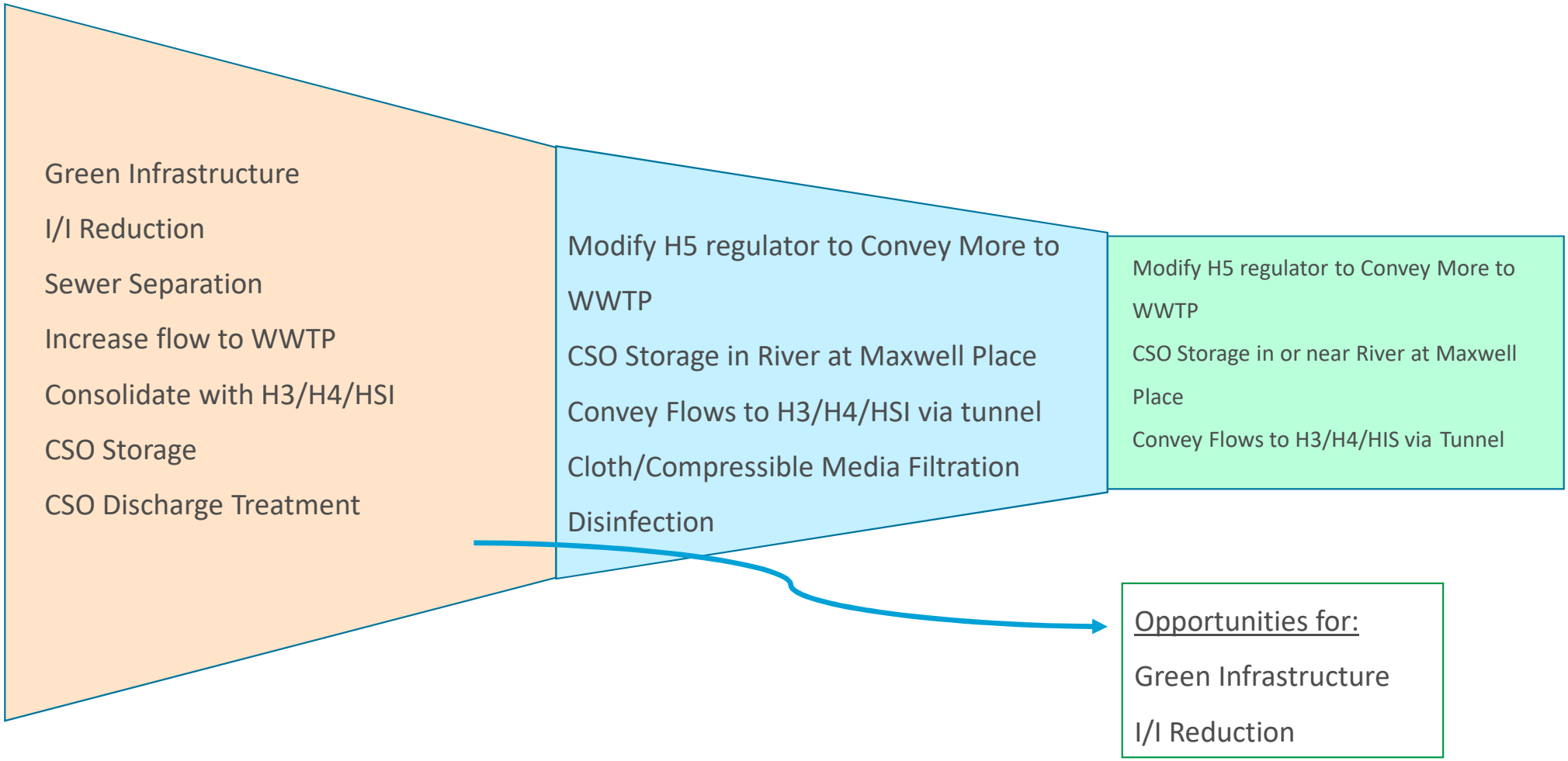
- **Storage Volume: 5 MG**
  - 25-30 foot storage depth

Outfall 005A

CSO Storage Structure at Baseball Field

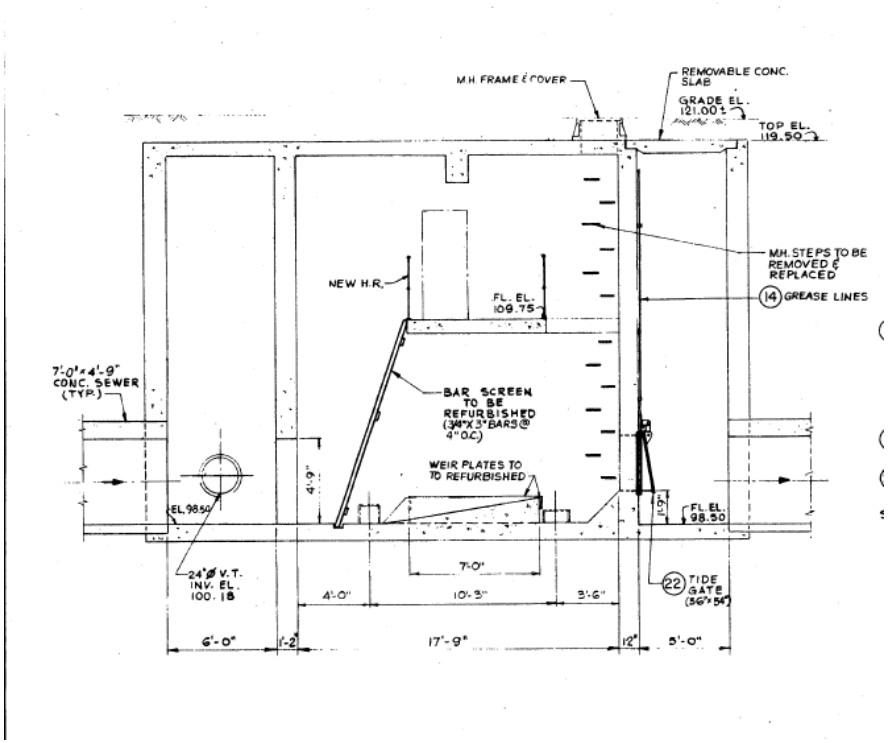


Outfall 006A (H5 Drainage Area - Central Hoboken)



Outfall 006A

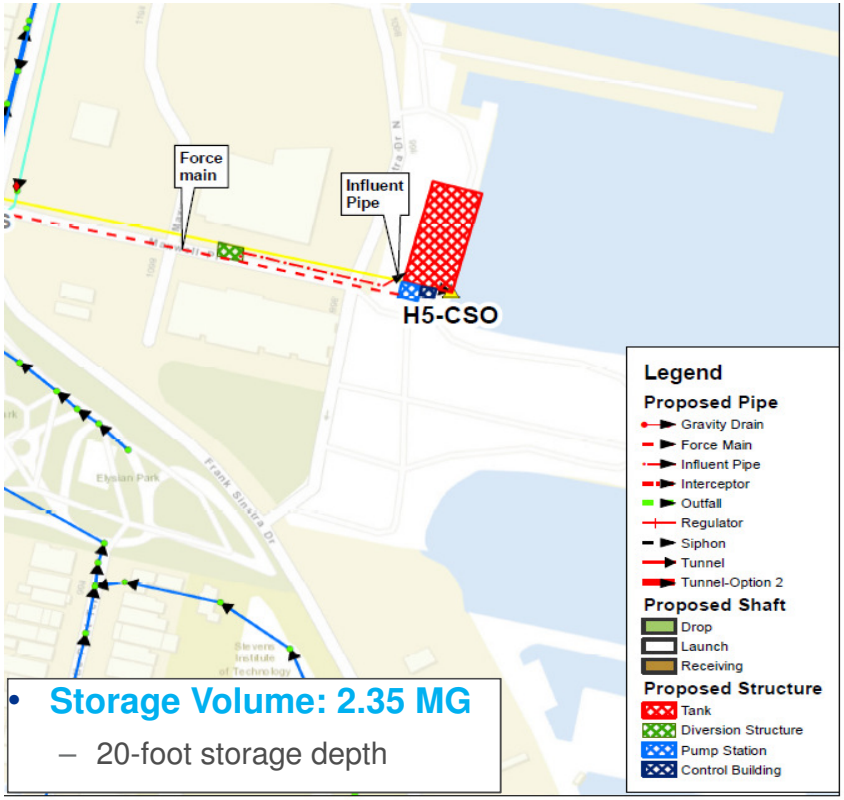
Modify the H5 Regulator to Convey More Flow to the 11th Street Pump Station



- General
  - Raise H5 Regulator Weir
  - Increase pump station capacity from 10 to 31 MGD

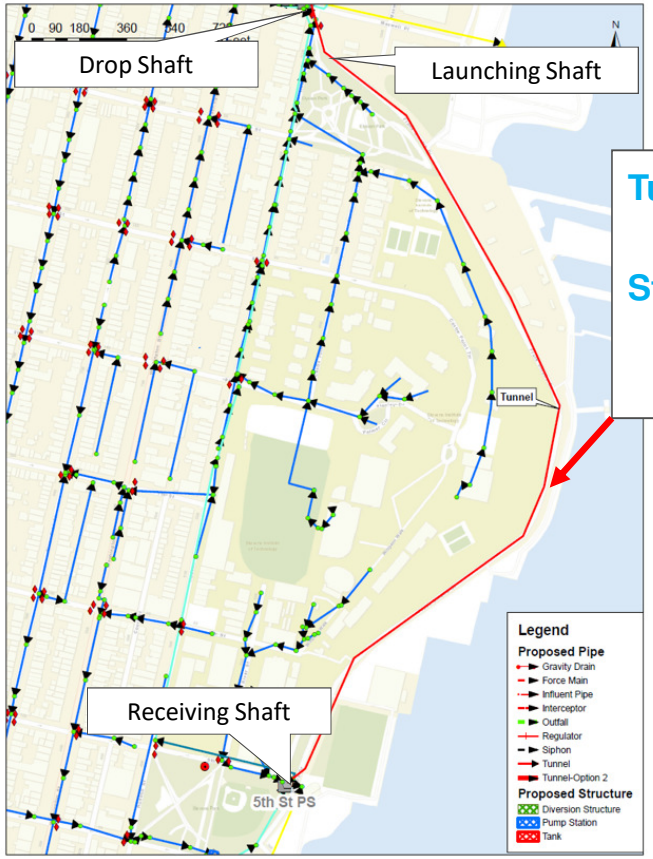
Outfall 006A

CSO Storage Structure At Maxwell Place



- **Storage Volume: 2.35 MG**
  - 20-foot storage depth

Convey Flows to H3/H4/HSI Outfall



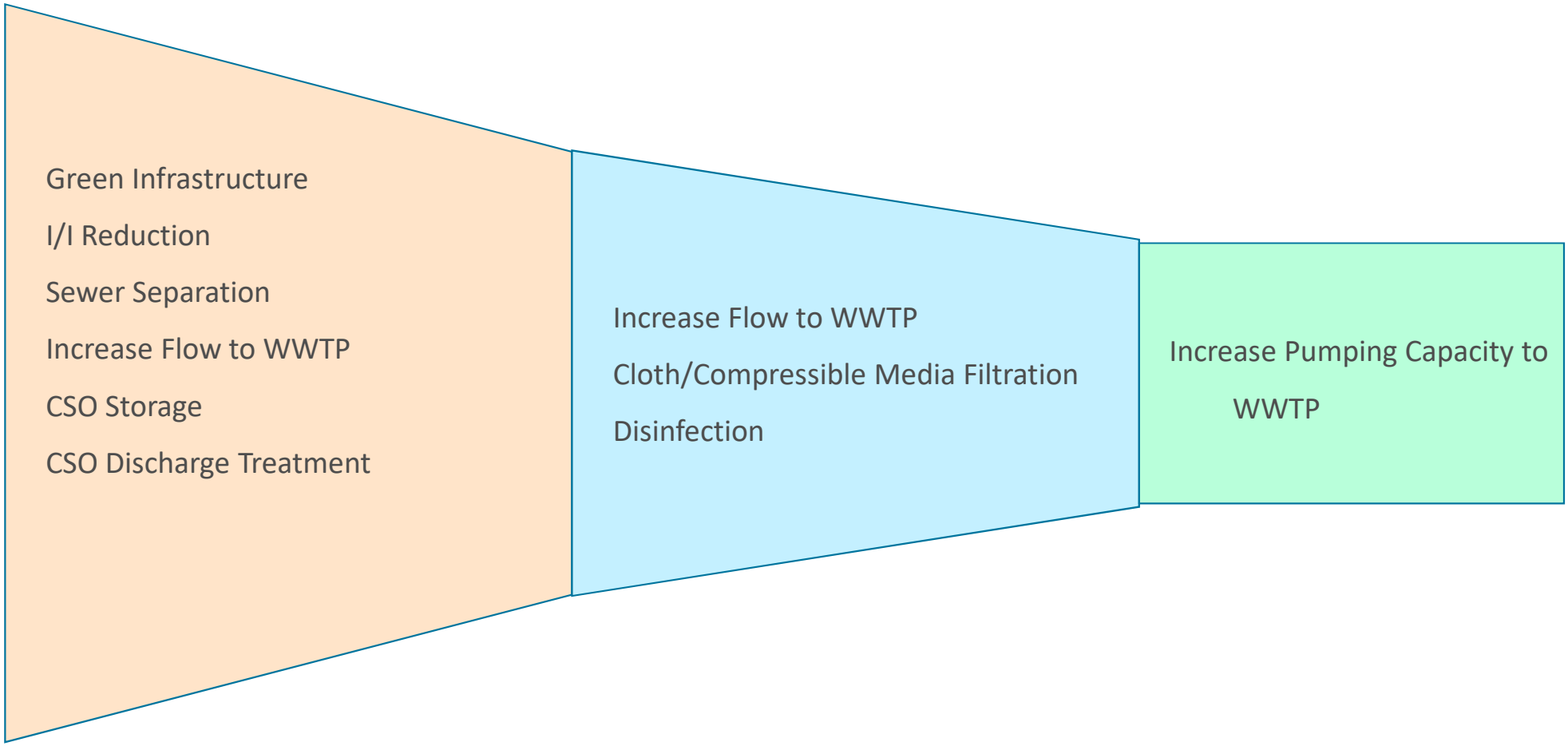
Tunnel Volume: 2.35 MG

3730’ in length; 10’ ID

Structure

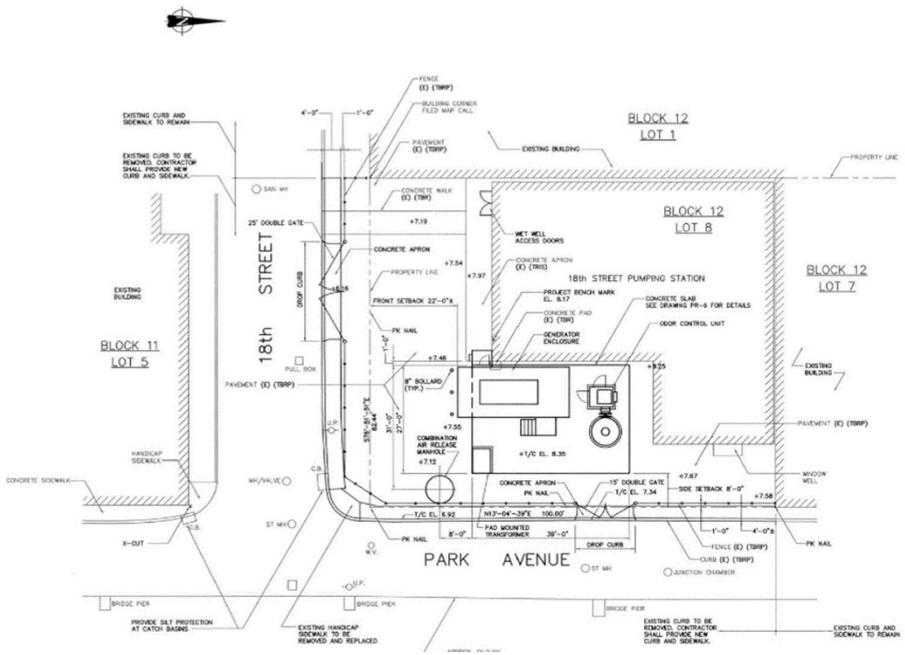
20 feet of cover

Outfall 012A (18th Street Pump Station – Weehawken)



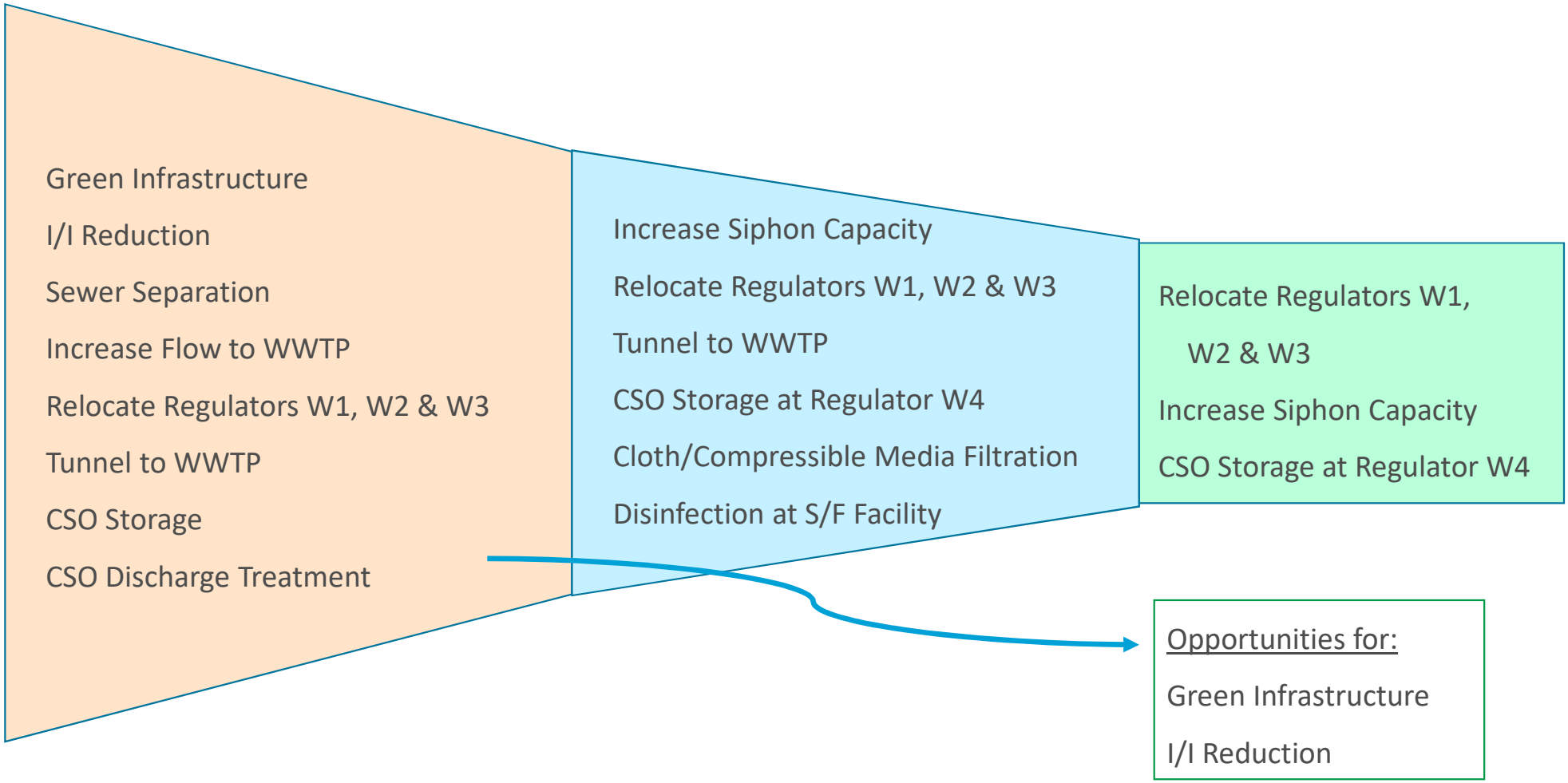
Outfall 012A

Increase Pumping Capacity of 18th Street Pump Station



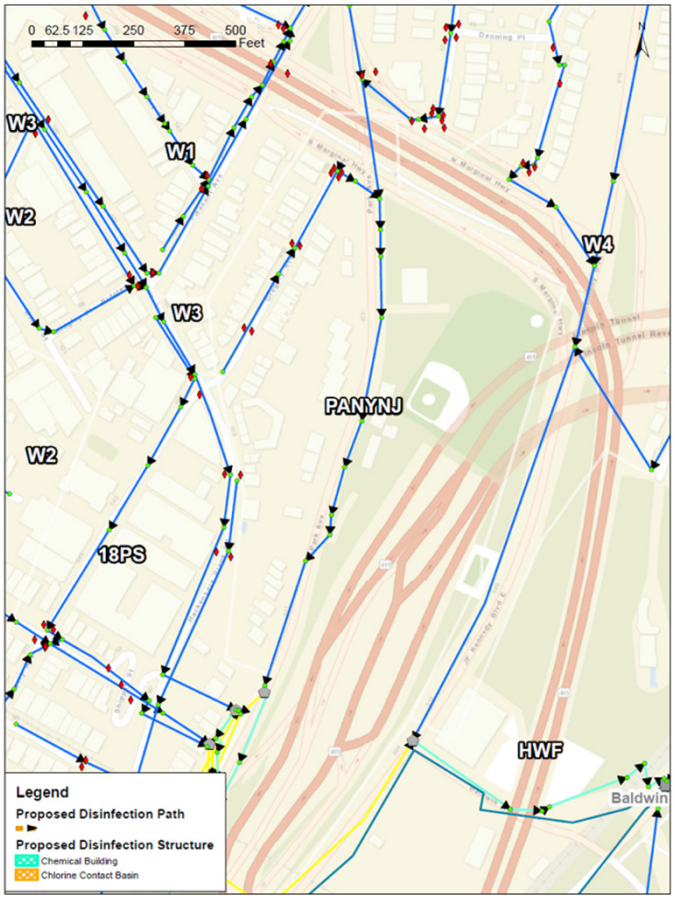
- General
  - Upgrade Capacity from 5 MGD to 18 MGD
  - Increase size of force main

Outfall 013A (W1234 Drainage Area - Weehawken)



Outfall 013A

Relocate Regulators W1, W2, and W3



- Potential Construction
  - With potential work on increasing siphon capacity, this would provide an opportunity to relocate regulators to aid in decelerating flow to interceptor
  - This alternative is not expected to reduce flows significantly and will be combined with the other proposed alternatives for W1234 which convey flow to the plant for optimization

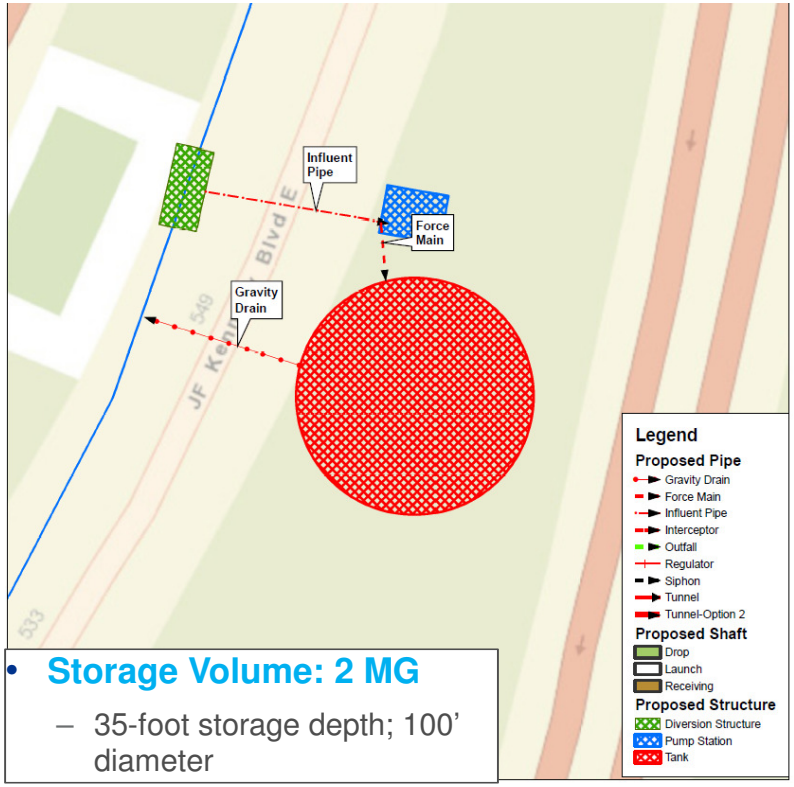
Outfall 013A

Install a 3rd Barrel for the Park Avenue Siphon to Increase Flow to WWTP

- **Structure**
  - Parallel to existing Siphon
- **Piping**
  - Existing siphons are 24” and 12”
  - Next increment is 36” pipe
  - Analyzing larger pipe sizes or additional barrel to target more flow

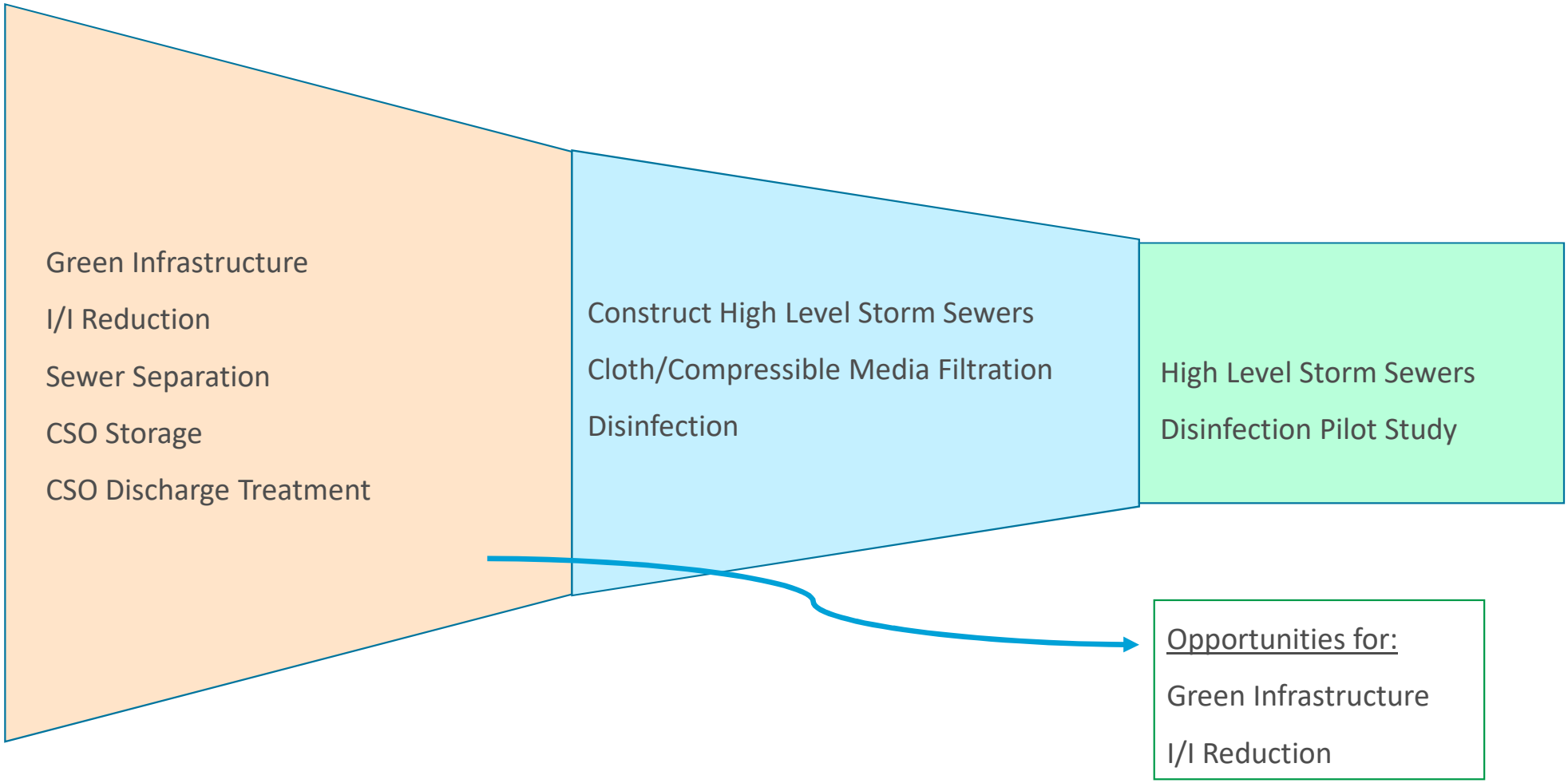
Outfall 013A

CSO Storage Tank at Regulator W4



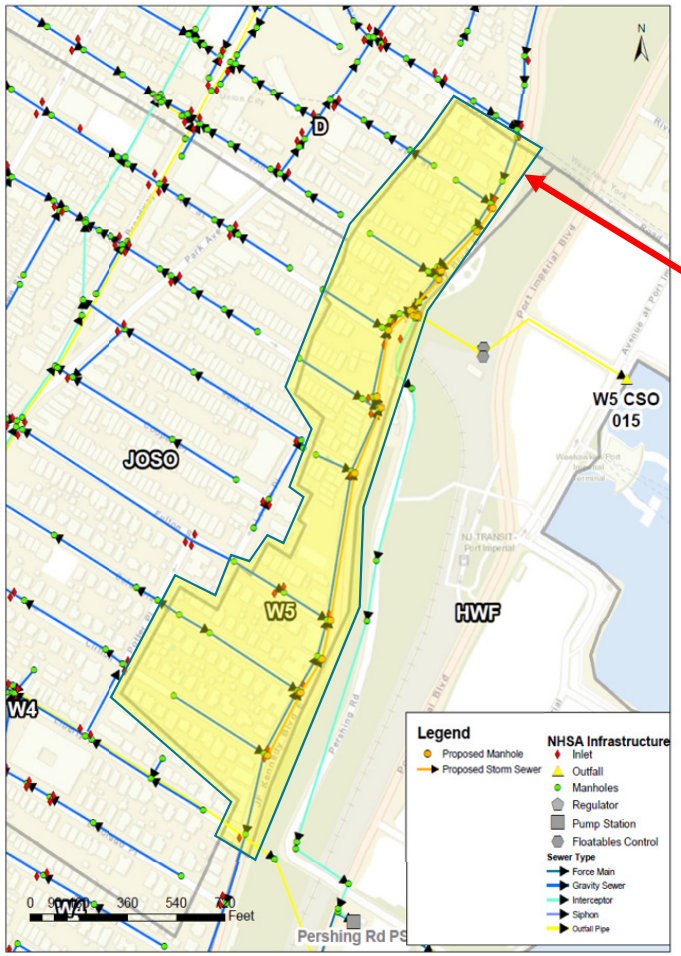
- **Storage Volume: 2 MG**
  - 35-foot storage depth; 100' diameter

Outfall 015A (W5 Drainage Area – Weehawken)



Outfall 015A

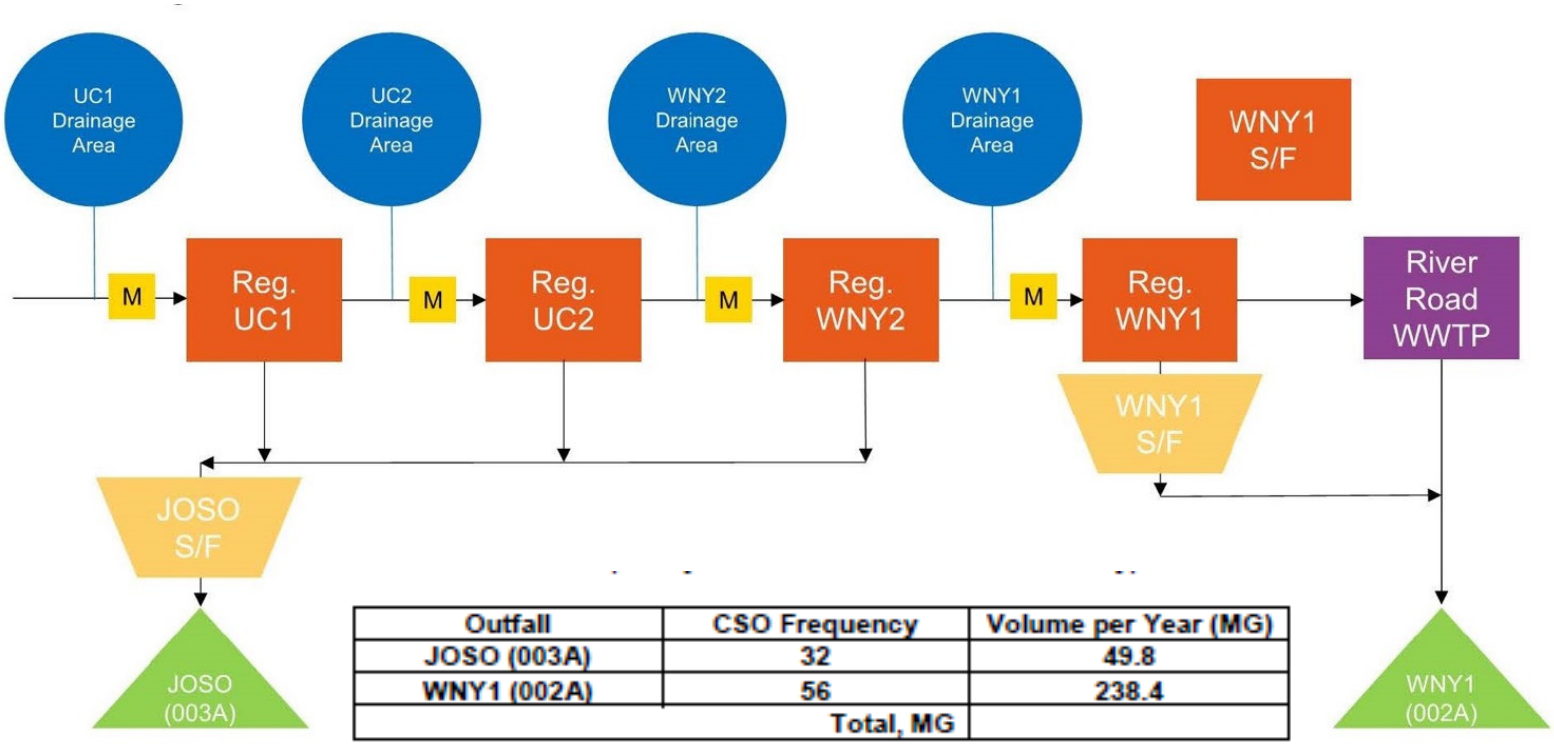
High Level Storm Sewer



- **Project Concept**
  - Construct stormwater system in parallel to existing combined system along Boulevard East
  - Disconnect catch basins from combined sewers and connect to new high level storm sewers
  - Reconfigure regulator to direct sanitary flows to existing 12” Interceptor

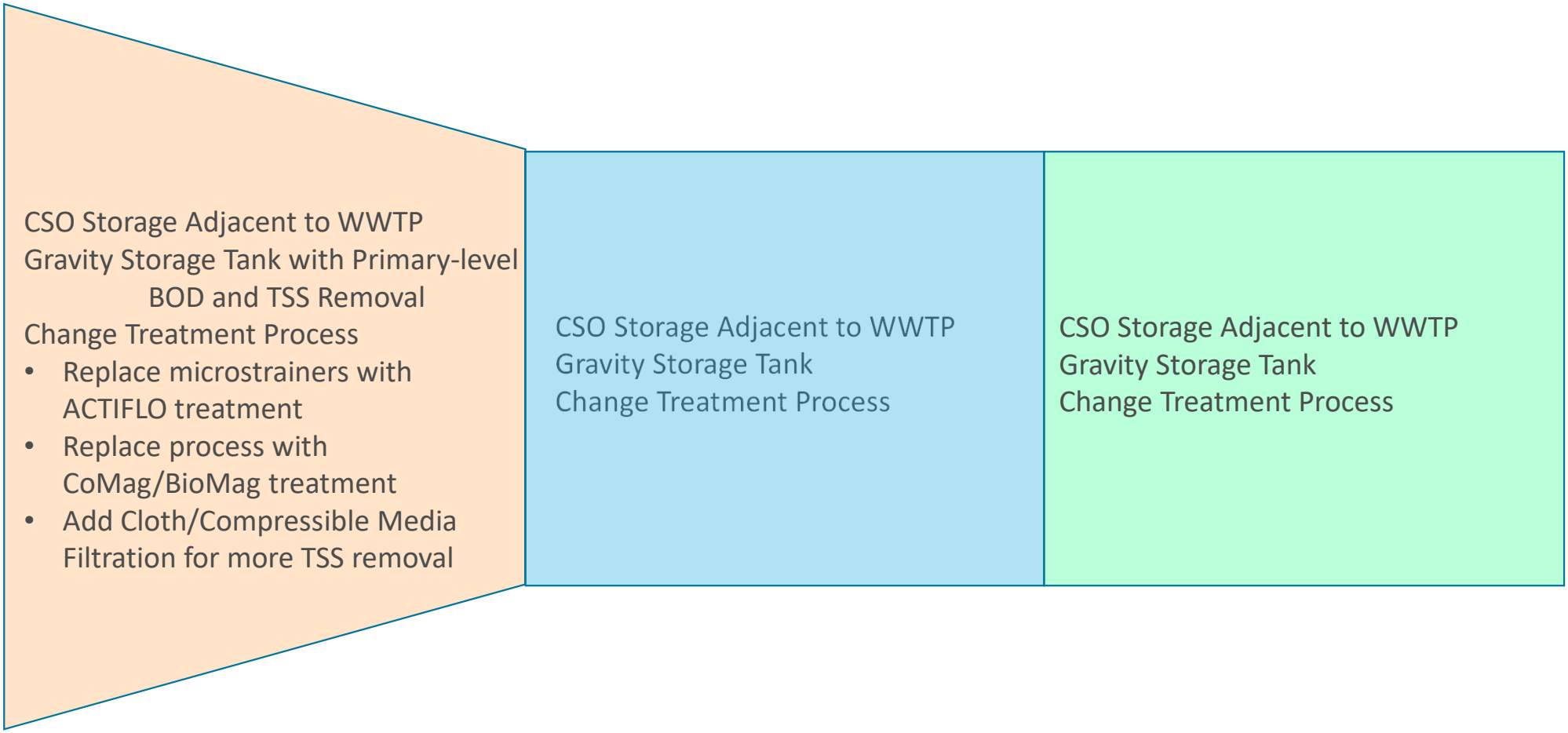
LTCP Development - River Road

River Road Combined Sewer System

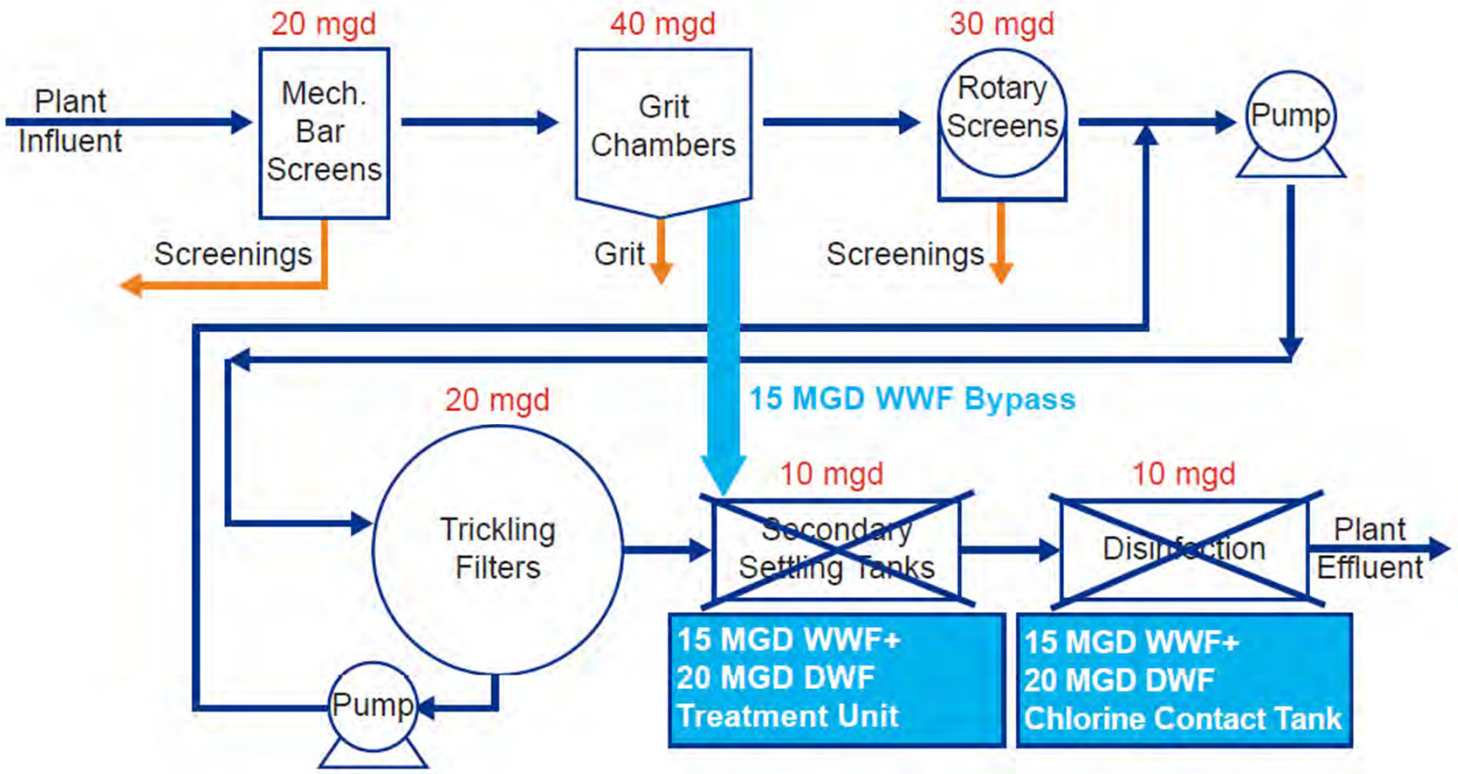


Outfall	CSO Frequency	Volume per Year (MG)
JOSO (003A)	32	49.8
WNY1 (002A)	56	238.4
	Total, MG	

River Road WWTP

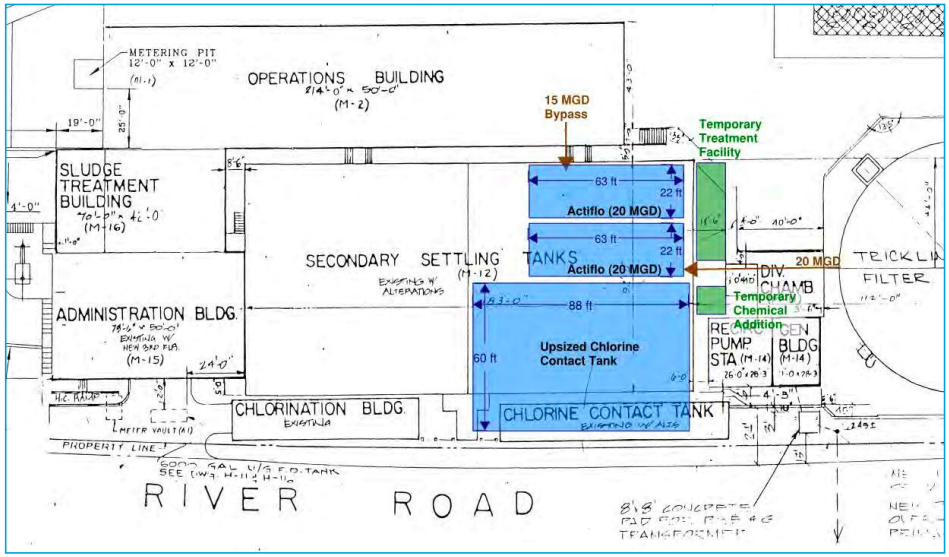


River Road WWTP – Change Treatment Processes

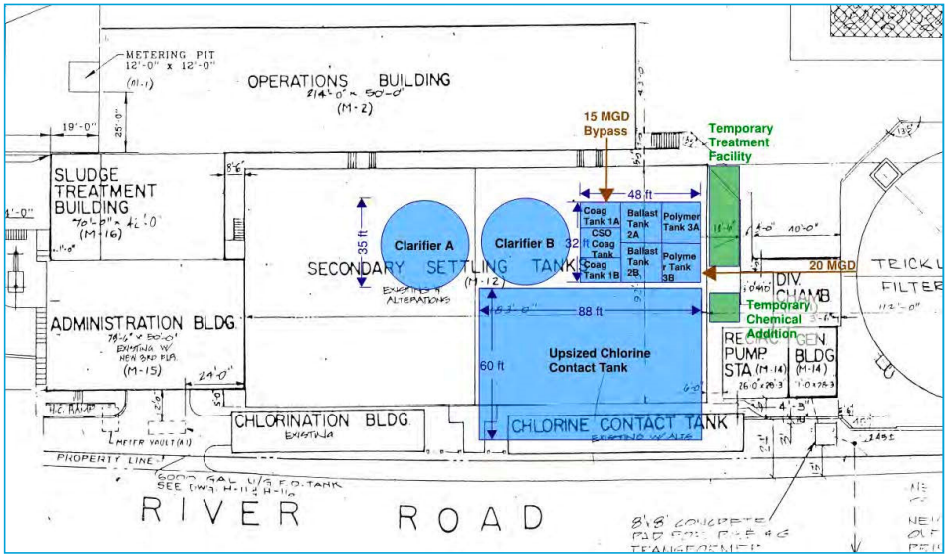


River Road WWTP – Change Treatment Processes

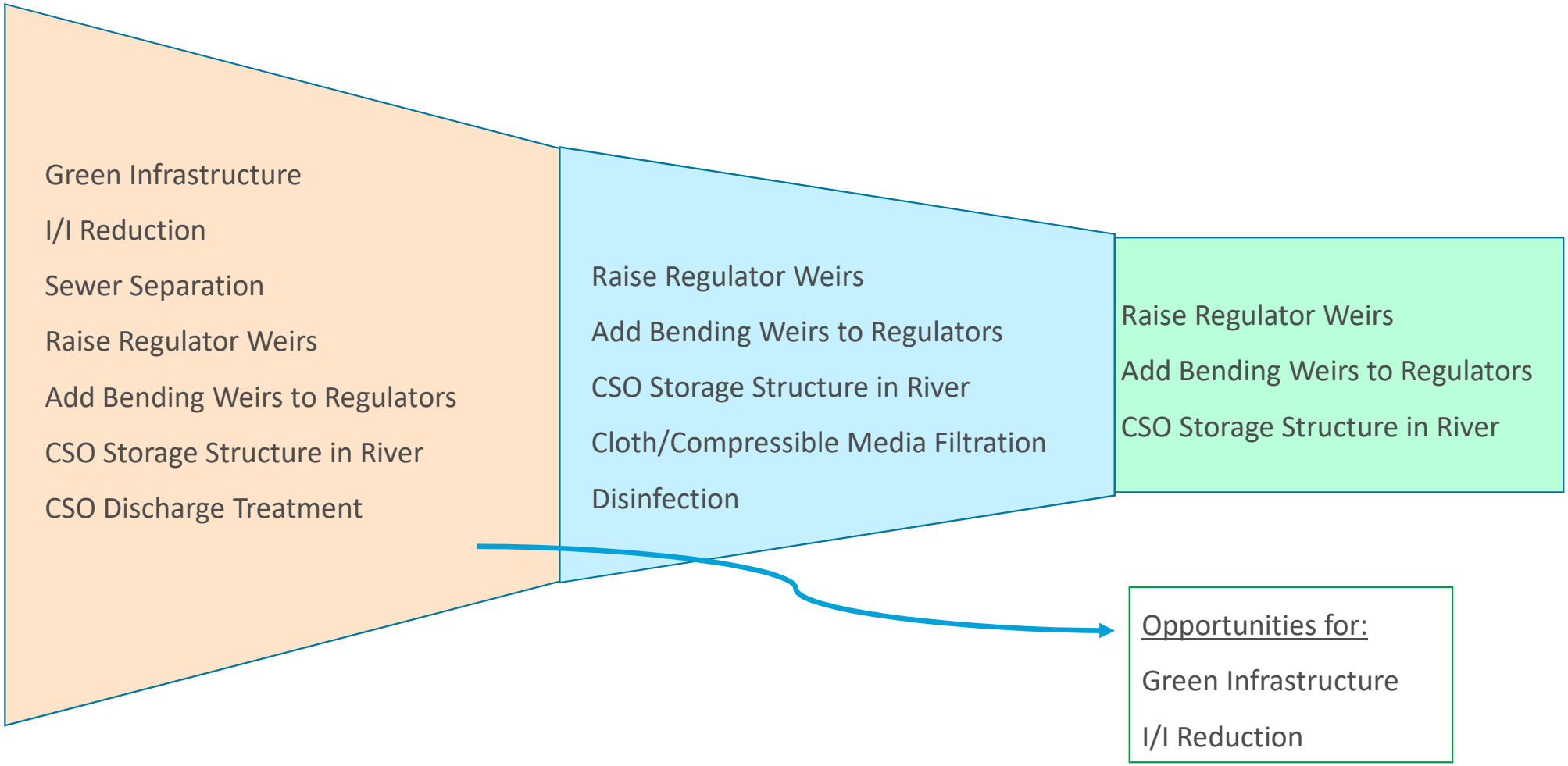
ACTIFLO Treatment



CoMag Treatment

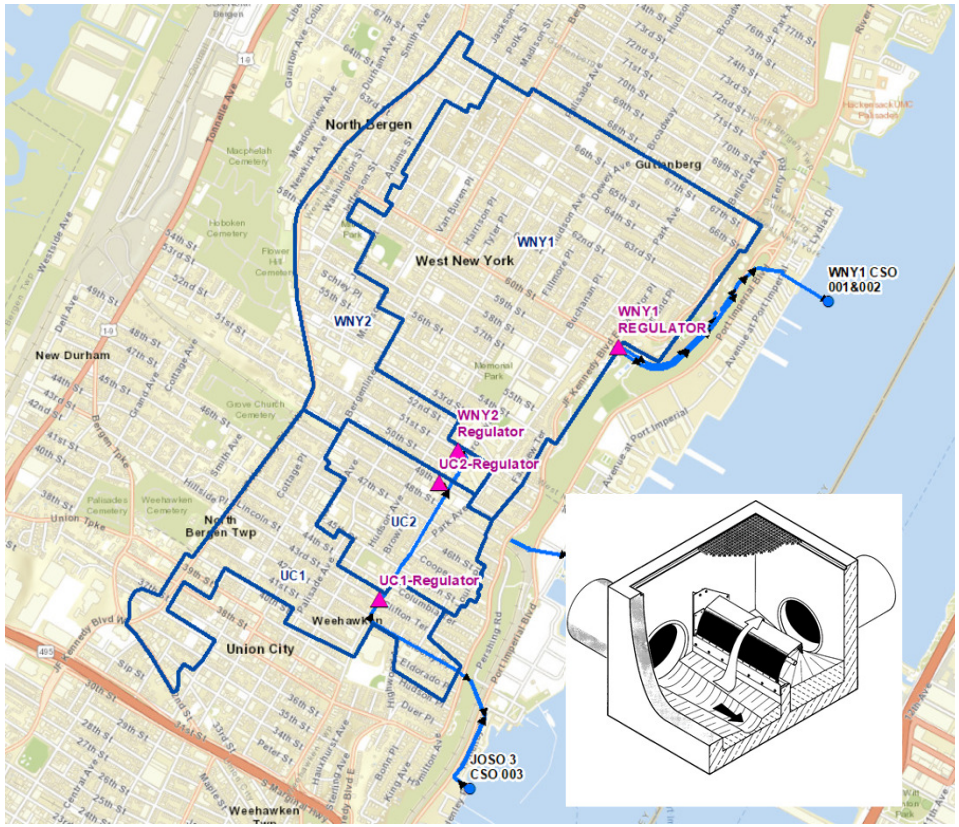


Outfall 003A (JOSO Drainage Area – Union City & West New York)



Outfall 003A

Replace Existing JOSO Side-flow weirs with Bending weirs



	Number of Overflows		Total CSO Volume (Mgal)	
	Existing	Bending Weirs	Existing	Bending Weirs
JOSO (003A)	61	24	95	28
River Road (002A)	60	60	190	254

Raise Regulator Weirs at UC1, UC2 and/or WNY2

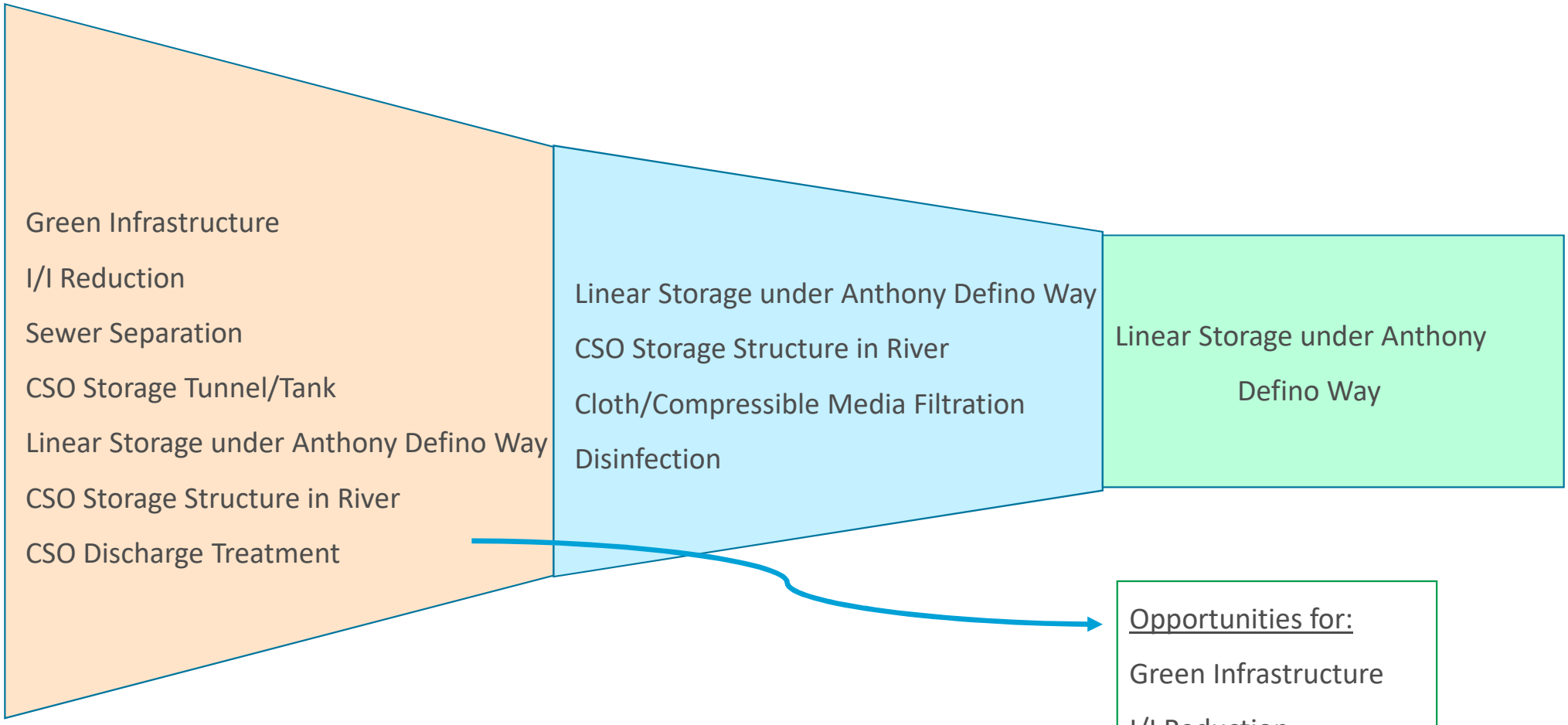
- Divert flows to WWTP and minimize amount routed to JOSO outfall
- Iterate scenarios raising weirs and analyzing overflow amounts

Outfall 003A

CSO Storage Structure constructed in River

- **Storage Volume: 5 MG**
  - 10-foot storage depth; 250'L x 250'W

Outfall 002A (WNY1 –West New York)



Outfall 001A/002A

Linear Storage along Anthony M. Defino Way

- 2,200 ft long, 26 ft diameter = 8.3 MG storage
- Number of overflow events at River Road reduced from 60 to zero. No improvement at JOSO but can combine with weir optimization
- Site considerations: slope, existing infrastructure
- Vortex drop structure, WWPS, HRT, disinfection, new parallel outfall, tide gate

NHSA Social Media Update

Redesigned Website:

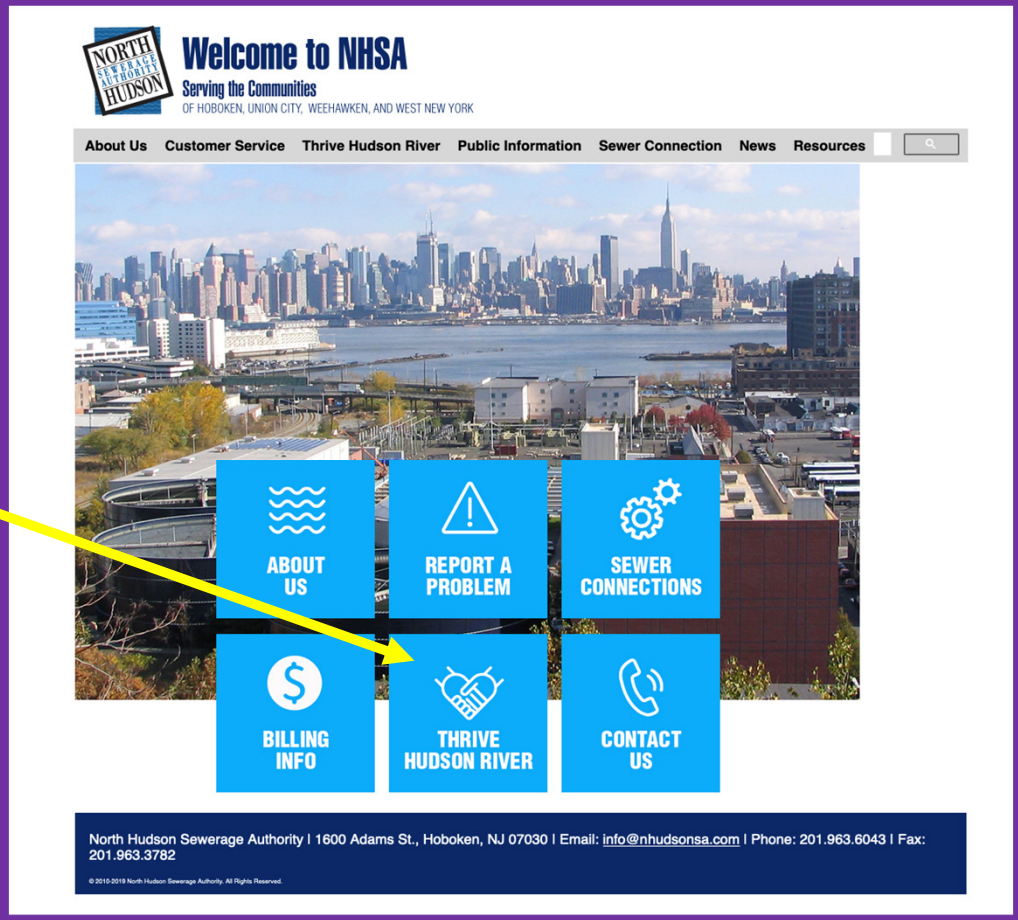
http://www.nhudsonsa.com

Dedicated LTCP Section with Waterbody Advisory System

Twitter

@NHSALTCP

or https://twitter.com/NHSALTCP



Next Steps

- Public Input on Remaining CSO Control Options
- Sequencing of CSO Control Construction
- Analysis of the Financial Implications of Implementing CSO Controls
- Develop Long Term Control Plans (LTCPs)
- June 2020: Submit LTCPs for NJDEP Approval

Next Public Meeting Date November 18, 2019

Thank You

NORTH SEWERAGE AUTHORITY HUDSON