



Phase III CSO Program Update



Final Phase of the Largest Public-Works Project in Rhode Island History

September 30, 2021



Agenda

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**Introduction &
Overview of
CSO Program**

2

**Approach to
Project Delivery**

3

**Program
Assessments**

Introductions



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Narragansett Bay Commission

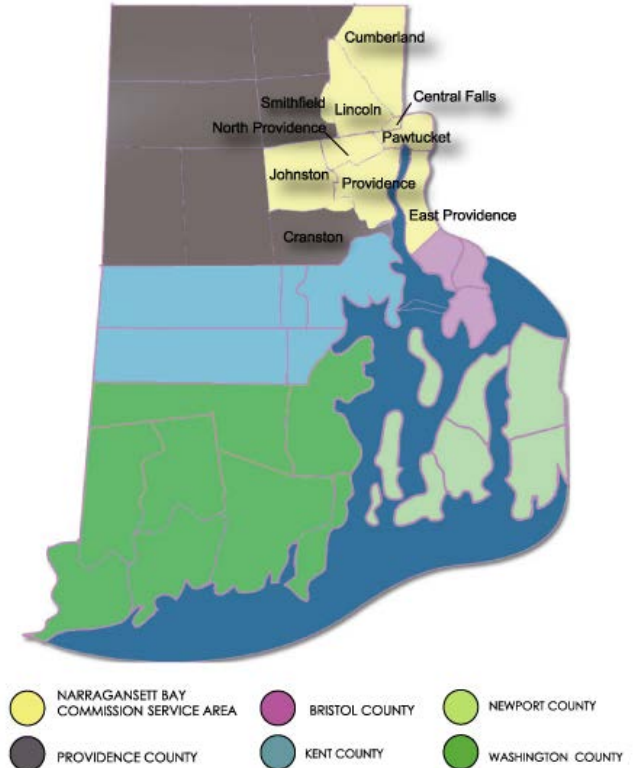


Melissa Carter, P.E., PMP

Program Implementation Manager
Stantec

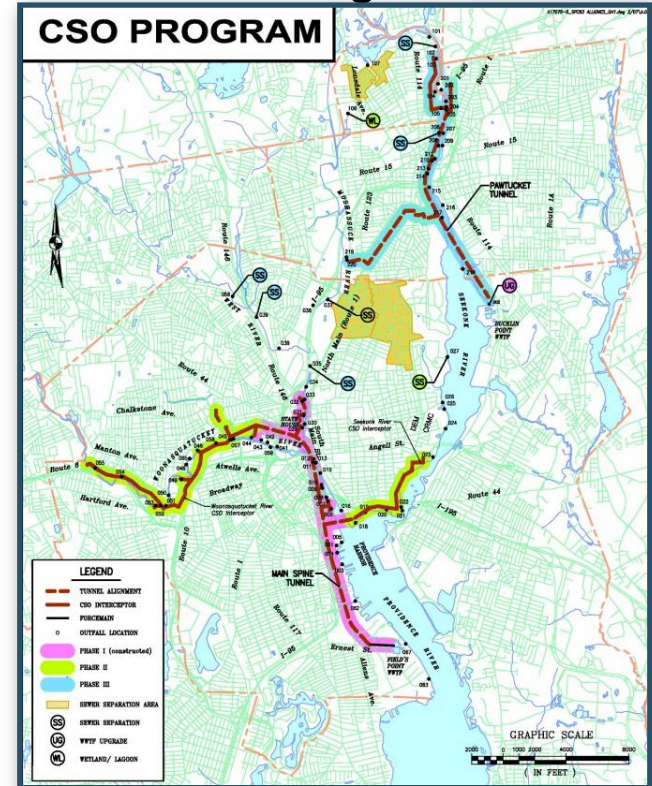
Narragansett Bay Commission (NBC)

- Provides Wastewater Collection and Treatment (Two Treatment Facilities)
- Ten Communities – Mostly Providence, Pawtucket and North Providence
- Serves 360,000 Residents
- Serves 7,800 Businesses



NBC CSO Control Program

- 1992: NBC commenced development of a CSO Control Program
- 1998: NBC Defined Three Phase Program
- Program goals for Narragansett Bay:
 - 98% reduction annual CSO volumes
 - 98% reduction fecal coliform loading
 - 95% reduction in number of annual overflows
 - < 4 overflows per year
 - 75% and 80% reduction in TSS and BOD loadings, respectively
 - 80% reduction in shellfish bed closures



NBC CSO Control Program

- Phase I (Complete)

Construction: 2001 to 2008 (Providence) Deep rock storage tunnel, tunnel pump station, drop shafts, and consolidation conduits.

- Phase II (Complete)

Construction: 2011 to 2015 (Providence) CSO interceptors, sewer separation, and storage/wetlands facility.

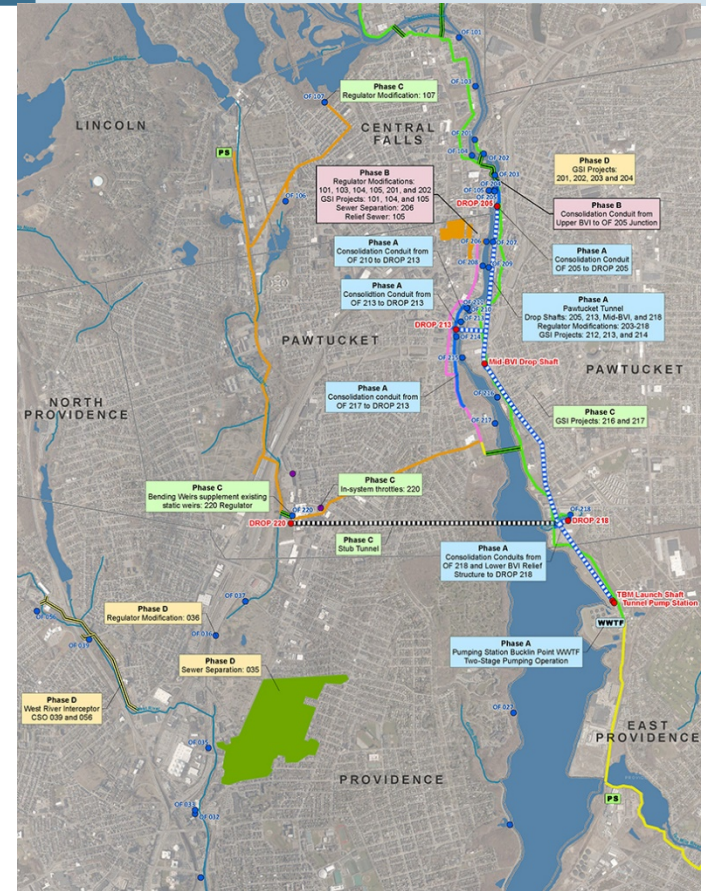
- Phase III (Commencing)

Construction: 2021 to 2041 (Pawtucket/ Central Falls) Deep rock storage tunnel, stub tunnel, tunnel pump station, drop shafts, consolidation conduits, targeted sewer separation, green stormwater infrastructure (GSI).



Approach to Phase III (Final Phase)

- NBC Commenced a Reevaluation of Phase III in 2014
- Phase III Reevaluation & Optimization Objectives:
 - ✓ Engage stakeholders
 - ✓ Prioritize water quality benefits
 - ✓ Evaluate affordability of program
 - ✓ Optimize plan through advanced hydraulic modeling and project solutions
 - ✓ Reduce cost
 - ✓ Extend implementation schedule to reduce impact on rate payers



Phase III Program Schedule

Phase IIIA (82% Annual CSO Reduction* in Bucklin Point Service Area)

Planning/Design/Pre-Construction: 7/2017 to 12/2021



Construction: 1/2021 to 4/2026 (Note: GSI Projects Begin 10/2019, Regulator Project Begins 7/2020)



Phase IIIB (7% Annual CSO Reduction* in Bucklin Point Service Area)

Planning/Design/Pre-Construction: 7/2017 to 12/2028

*Adaptive Management Period



Construction: 1/2029 to 6/2030



Phase IIIC (4% Annual CSO Reduction* in Bucklin Point Service Area)

Planning/Design/Pre-Construction: 1/2031 to 3/2034



Construction: 3/2034 to 12/2037



Phase IIID (N/A – Fields Point Service Area)

Planning/Design/Pre-Construction: 1/2036 to 9/2039



Construction: 9/2039 to 12/2041



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Phase III Project Delivery

Program Management

Advance Phases IIIA & IIIB to Conceptual Design Level

Develop project packages and sequence for design/procurement/construction

Prepare RFP for IIIA-1 Pawtucket Tunnel Design-Build Contract (Issued by NBC)

Issue RFQ/RFPs followed by subcontracts to selected design consultants to advance final design of remaining Phase IIIA & Phase IIIB project packages

Design-Build

IIIA-1 Pawtucket Tunnel
(including pump station shaft)

Design-Bid-Build

IIIA-2 Tunnel Pump Station Fit-Out
IIIA-3 OF-205 Facilities
IIIA-4 OF-210/213/214 Facilities
IIIA-5 OF-217 Facilities
IIIA-6 OF-218 Facilities
IIIA-7 Regulator Modifications
IIIA-8 GSI Demonstration Project
IIIA-9 GSI/Macomber Stadium Facilities
IIIA-10 BPWWTF Improvements
IIIB-1 Regulator Modifications
IIIB-2 GSI Projects
IIIB-3 OF-206 Sewer Separation
IIIB-4 Upper BVI Facilities

Phase IIIA & B Criteria for Project Packaging

Conceptual Design



Packaging Criteria

Physical Proximity

Hydraulic Connectivity

Operational Constraints

**Grouping of Similar
Work Items**

Specialized Work

**Maximize Local
Contractors/ Trades**

Contract Value Limits



Project Packages

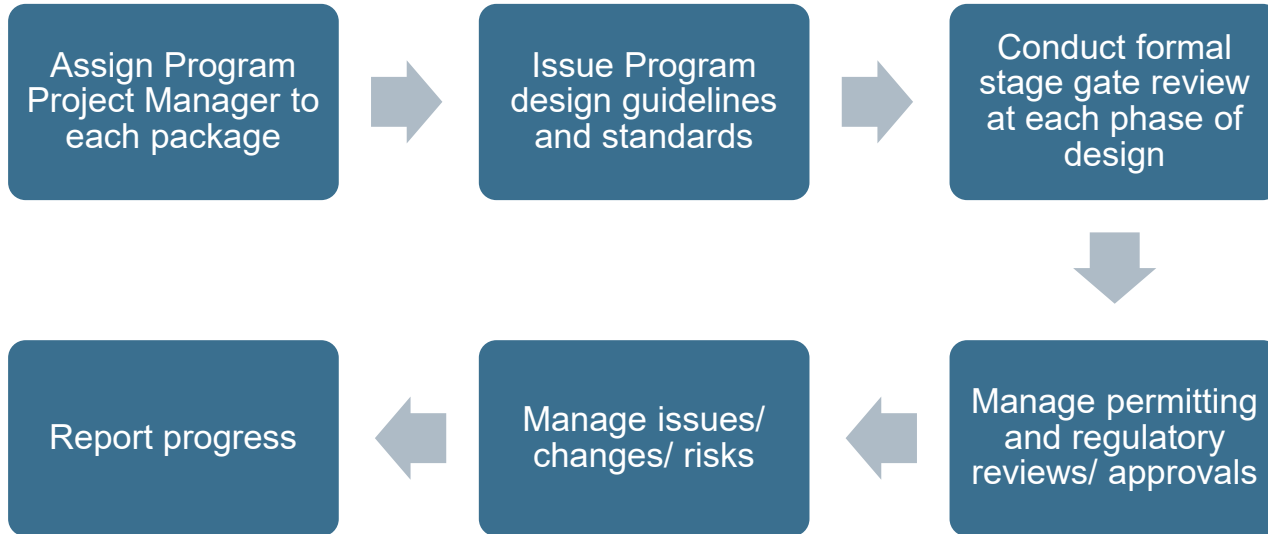


Pawtucket Tunnel: Design-Build Delivery

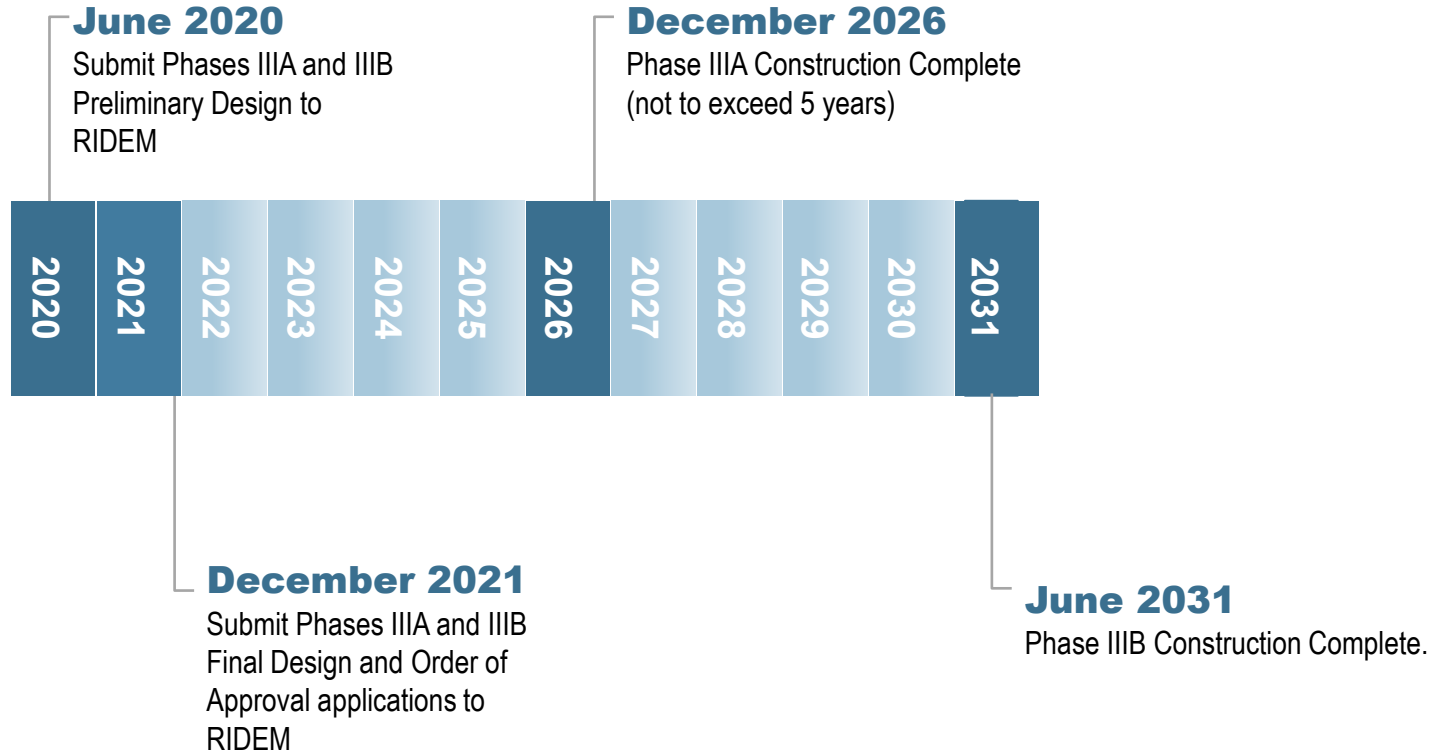
NBC criteria for selecting Design-Build (DB) delivery method for the Pawtucket Tunnel project:

- Single point of accountability for final design and construction
- Contractor involvement in tunnel design process
- Price certainty
- Efficiency of delivery

Phase IIIA & B Design Management



Phase IIIA & B Consent Agreement Milestones



Phase IIIA & B Status

Package	Contract Name	Status	Description
Phase IIIA Facilities			
IIIA-1	Pawtucket Tunnel	OA submitted March 2021, construction started June 2021	Main tunnel and shaft, plus pump station shaft
IIIA-2	Tunnel Pump Station Fit Out	OA submittal pending (expected December 2021)	Tunnel dewatering pump station fit-out
IIIA-3	OF-205 Facilities	OA submitted September 2021	Consolidation conduits, drop shaft gate & screening structure
IIIA-4	OF-210/213/214 Facilities	OA submittal pending (expected November 2021)	Consolidation conduits, drop shaft gate & screening structure
IIIA-5	OF-217 Facilities	OA submitted June 2021, bids received September 2021	Consolidation conduits, flow diversion/control structure
IIIA-6	OF-218 Facilities	OA submittal pending (expected October 2021)	Consolidation conduits, drop shaft gate & screening structure
IIIA-7	Regulator Modifications	OA submitted April 2021, construction started August 2021	CSO regulator modifications
IIIA-8 & 9	GSI Projects	Construction is complete	Green stormwater infrastructure
IIIA-10	Bucklin Point WWTF Improvements	OA submitted June 2021	Wastewater Treatment Facility (WWTF) improvements
Phase IIIB Facilities			
IIIB-1	Regulator Modifications	OA submitted April 2021	CSO regulator modifications
IIIB-2	GSI Projects	OA submittal not required	Green stormwater infrastructure
IIIB-3	OF-206 Sewer Separation	OA submitted September 2021	Sewer separation
IIIB-4	Upper BVI Relief Facilities	OA submitted June 2021	Consolidation conduits, drop shaft gate & screening structure

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Program Assessments (Phase IIIA & B)

To address future uncertainty regarding construction costs and impacts to rate payers, NBC negotiated an updated consent agreement with RIDEM in 2018 to incorporate periodic program assessments (adaptive management approach):

1. Within 6 months after issuing the Notice to Proceed for the last Phase IIIA construction contract, NBC will evaluate financial conditions and notify RIDEM whether it is appropriate to expedite construction of Phase IIIB.
2. Within 24 months after initiating operation of the Phase IIIA CSO control facilities, the NBC will submit a report which details the results of an Integrated Planning Framework assessment of all regional Clean Water Act projects, an evaluation of water quality improvements achieved through Phase IIIA, the affordability of the CSO program after completion of Phase IIIA construction, and if the report recommends substantial changes to the Phase IIIB design as a result. Within 30 months after RIDEM approval of the report, the NBC is to complete construction and initiate operation of Phase IIIB CSO control facilities.
3. Within 12 months after initiating operation of the Phase IIIB CSO control facilities or within 66 months of initiating operation of the Phase IIIB CSO control facilities if construction was expedited, the NBC is to submit a report which details the results of an Integrated Planning Framework assessment of all regional Clean Water Act projects, an evaluation of water quality improvements achieved through Phase IIIB, and the affordability of the CSO program after completion of Phase IIIB construction.

Risks/Opportunities

Adaptive management is key to maintain the right balance between water quality and affordability goals throughout the life of the Phase III CSO program.

Currently identified risks/opportunities which could affect the Phase IIIA & B implementation schedule include:

1. Volatility of construction costs
2. Disruptive social/economic events (e.g. COVID-19)
3. Federal funding for infrastructure
4. Tunnel boring machine (TBM) failure
5. Regulatory changes

Questions?

