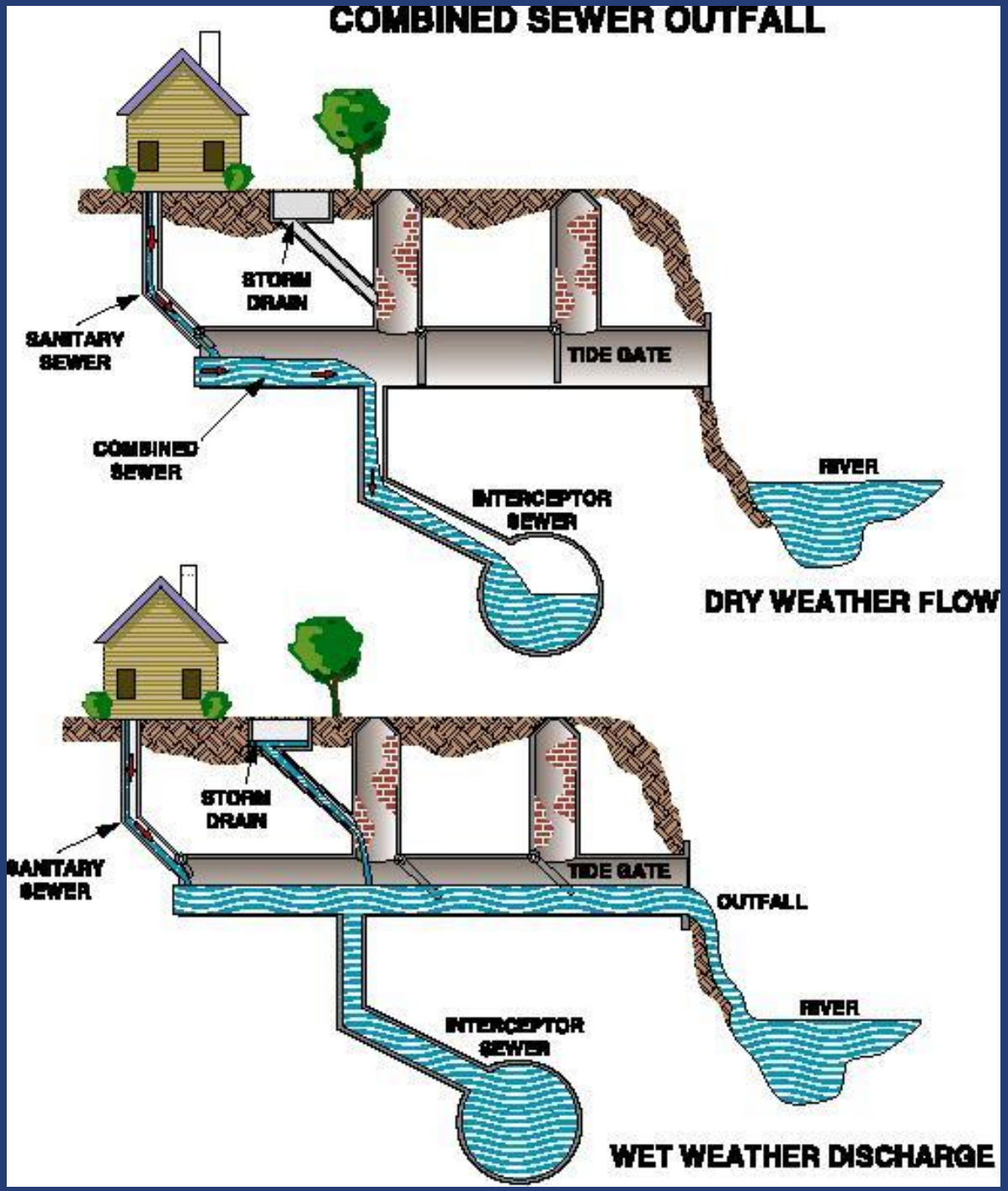
THE RE-EVALUATION OF PHASE III NBC CSO PROGRAM

WHAT IS A COMBINED SEWER OVERFLOW (CSO)?



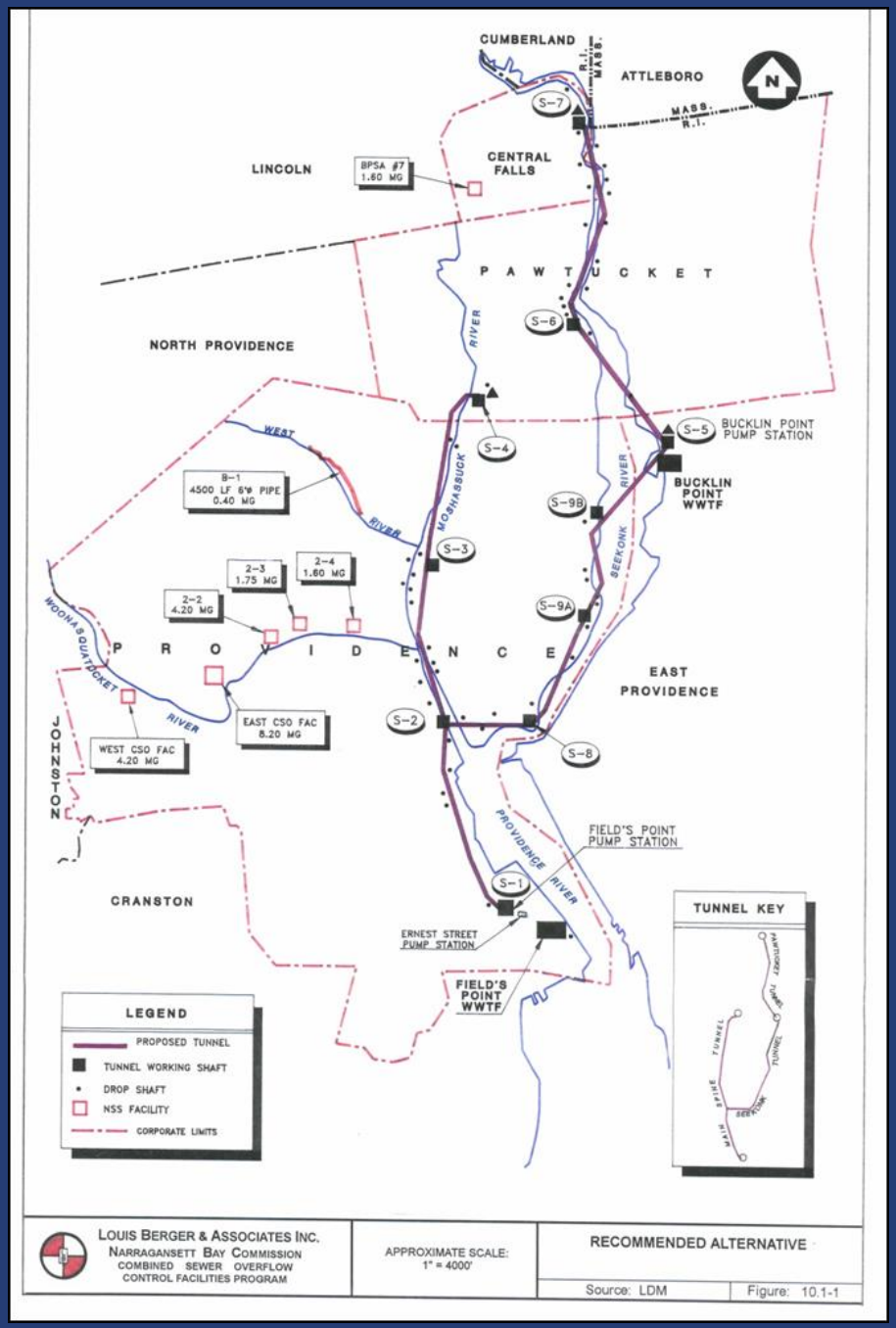
BACKGROUND

- By Federal Law, CSO's must be addressed to meet Water Quality standards. Bacteria is the pollutant of primary concern.

- 1992 – Consent Agreement signed with Rhode Island Department of Environment Management (RIDEM) establishing the schedule for planning, design and construction of CSO Facilities.

- 1994 – Conceptual Design Report (CDR) approved by RIDEM
  - Estimated Cost = $478M
  - Rate Increase = $125 ⟶ $425/year
  - Construction = 9 Years

CDR Recommended Alternative



BACKGROUND

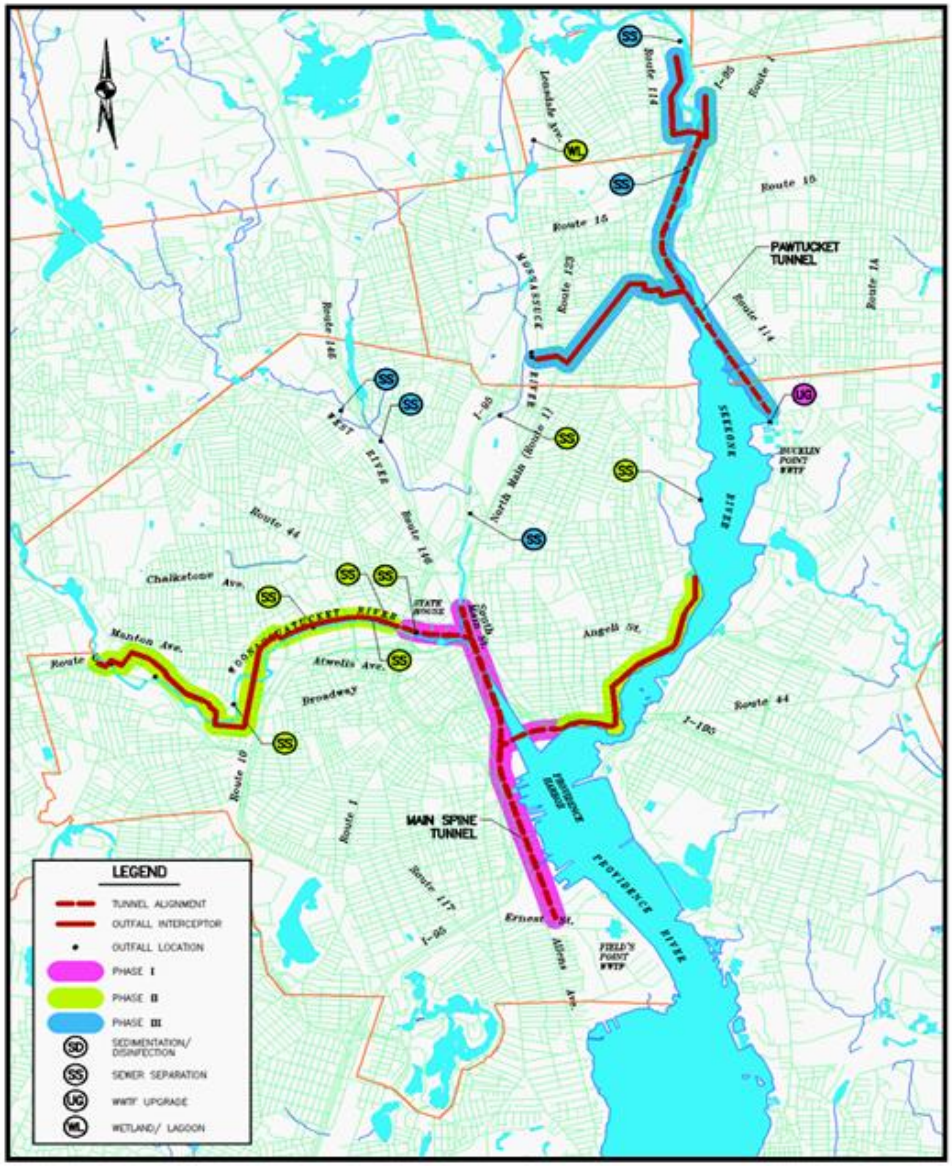
- 1994 – NBC begins preliminary design of approved CDR facilities
- 1994 – EPA revises CSO policy to provide more flexibility
- 1996 – NBC decides to reevaluate approved program due to:
  - New CSO policy
  - Cost
  - Technical Concerns
- 1996 – 1998 - Reevaluation conducted with input from Stakeholders group

BACKGROUND

- 1998 – Conceptual Design Report Amendment (CDRA) approved by RIDEM for Alternative 17
  - Estimated Cost = $390M
  - Rate Increase = $165 ⟶ $300/year
  - Construction = 17 Years

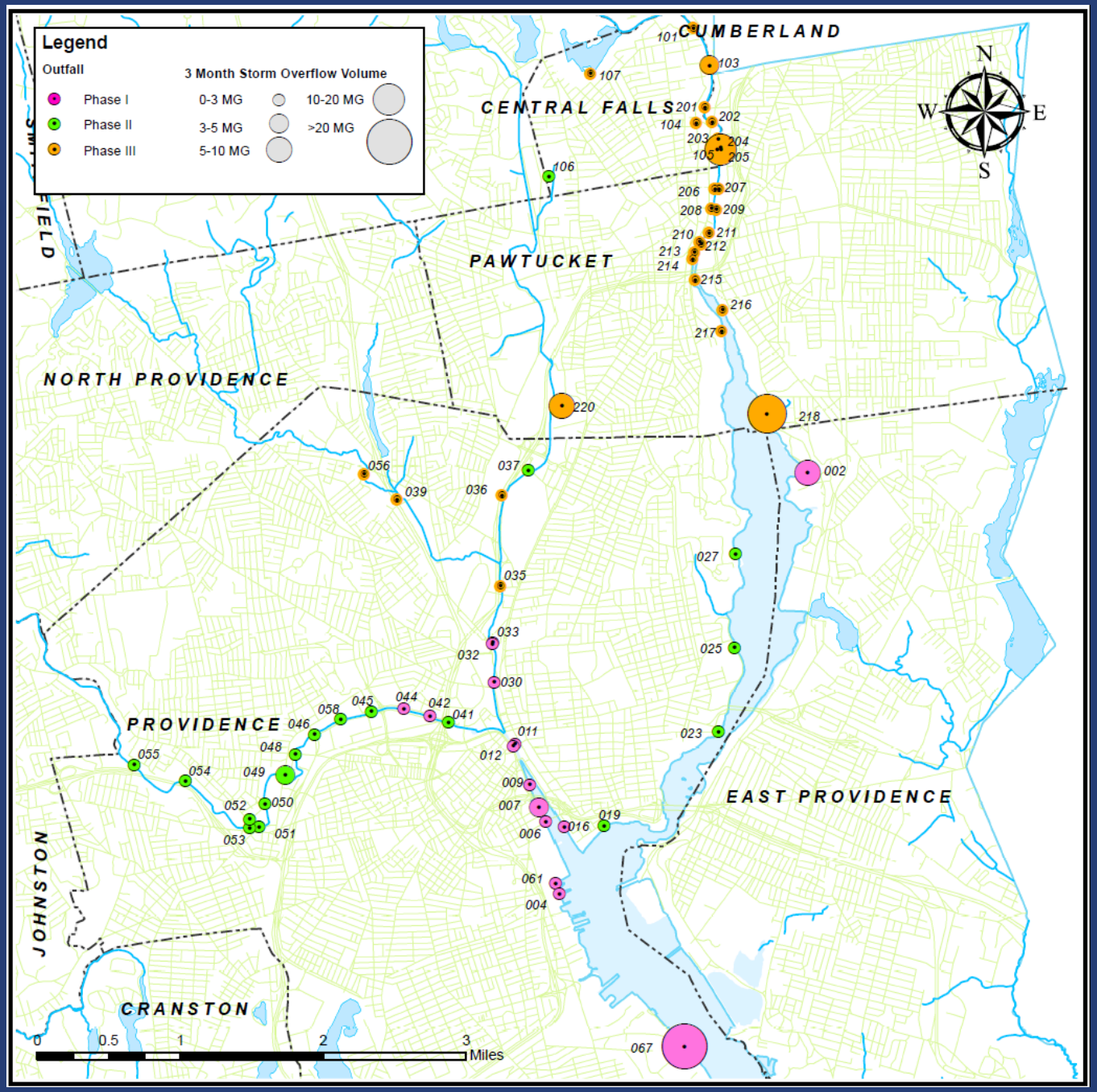
CSO PROGRAM GOALS

- 98% Reduction in annual CSO volume (2.2 Billion Gallons)
- 80% Reduction in shellfish bed closures
- Designed to capture 3 month storm (1.6” of rain in 6 hours)
- 3 Phases
  - I – Completion 2008
  - II – Completion 2014
  - III – Completion 2021

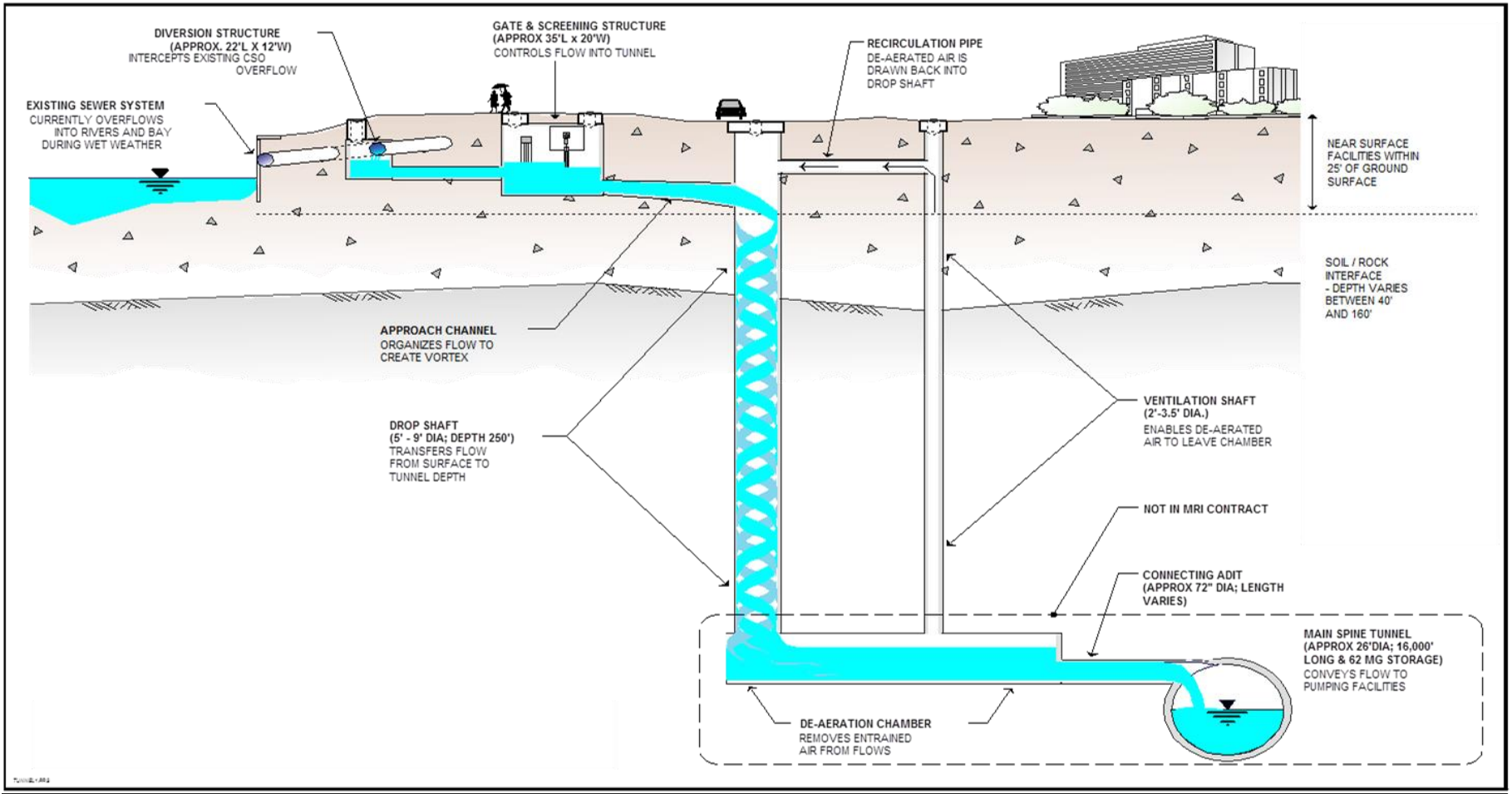


Three Phases of NBC's CSO Abatement Program

COMBINED SEWER OVERFLOW VOLUMES

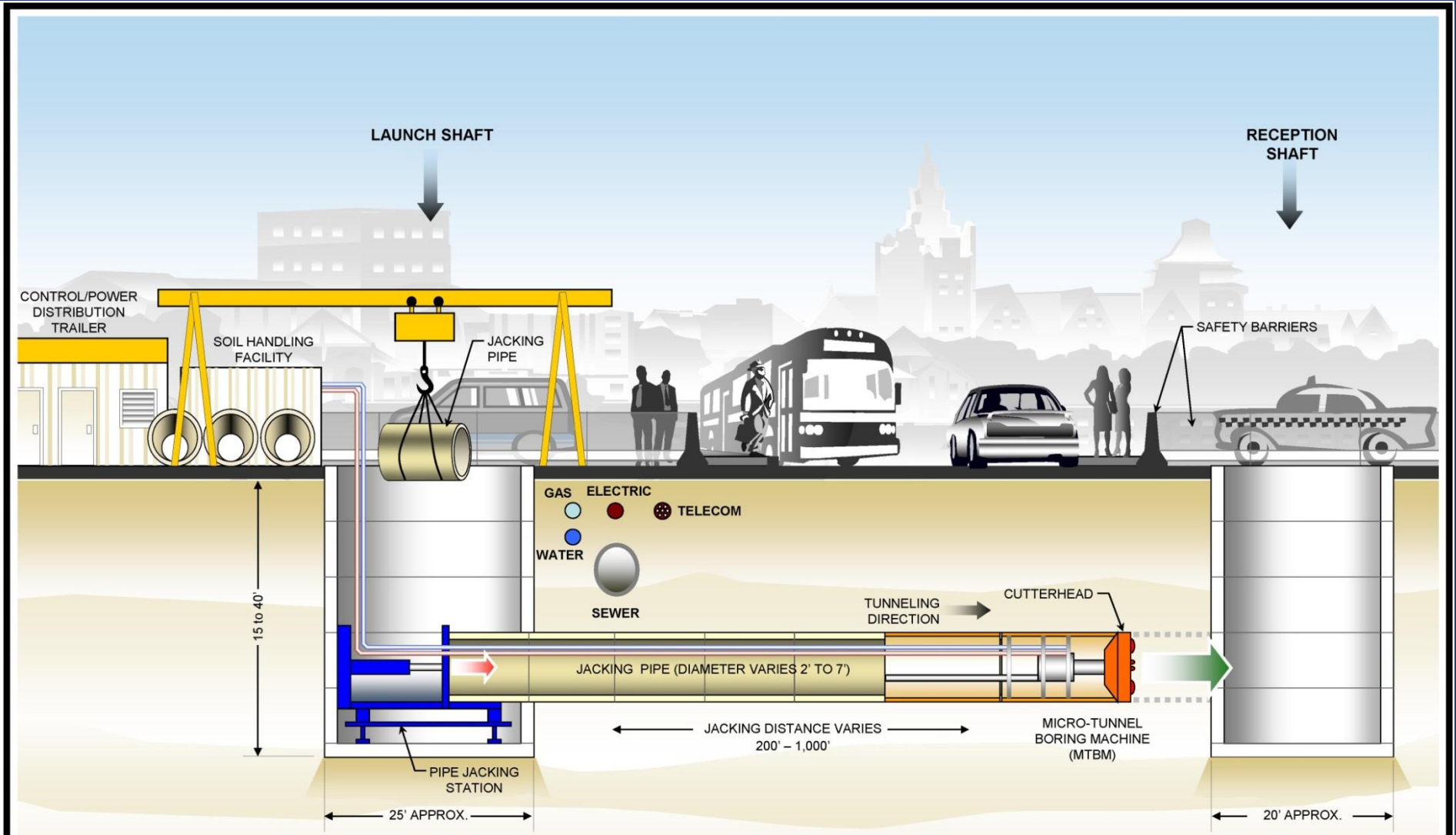


HOW THE CSO TUNNEL WORKS

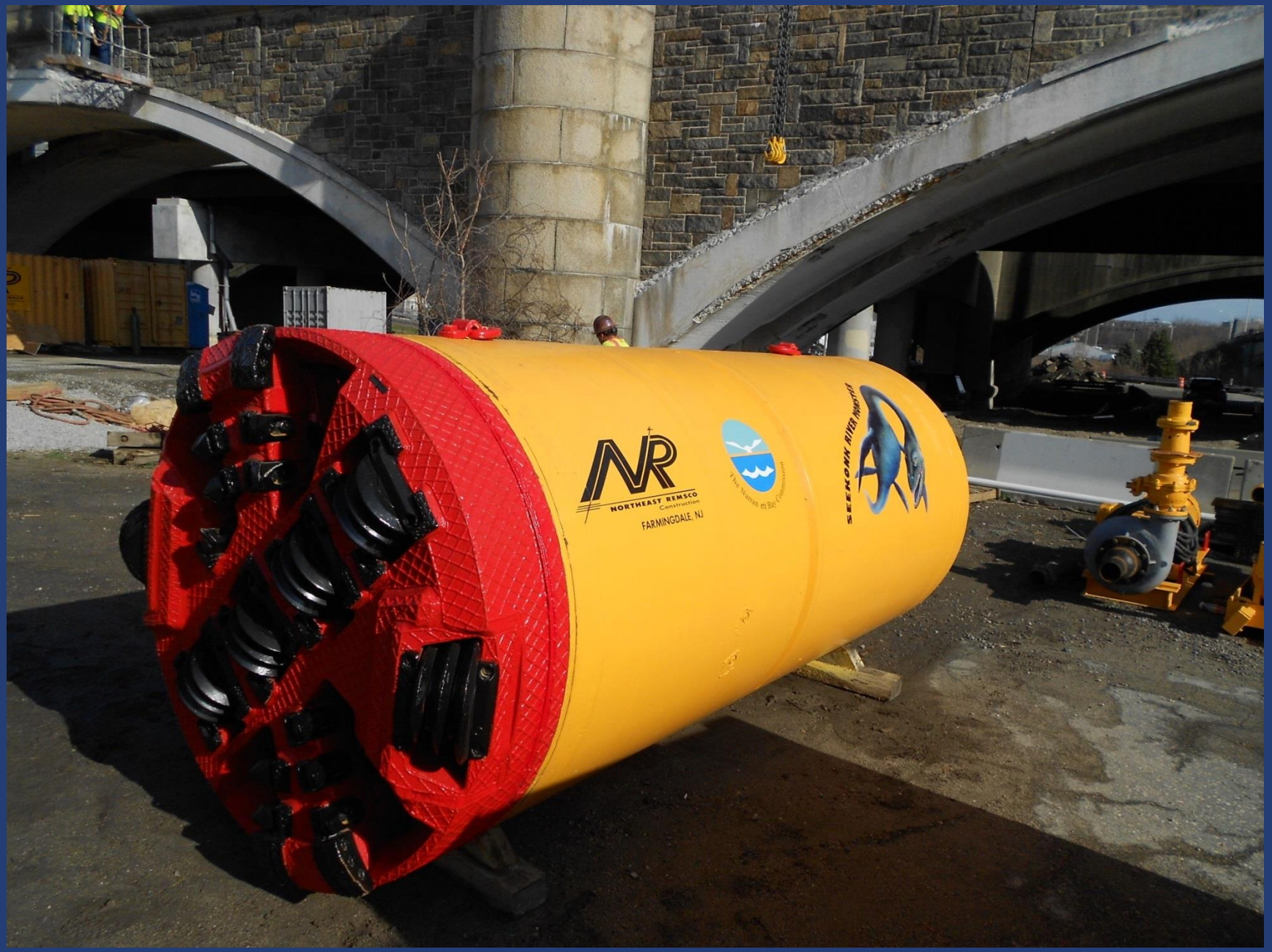


**COMBINED SEWAGE OVERFLOW-
DIVERSION AND STORAGE**

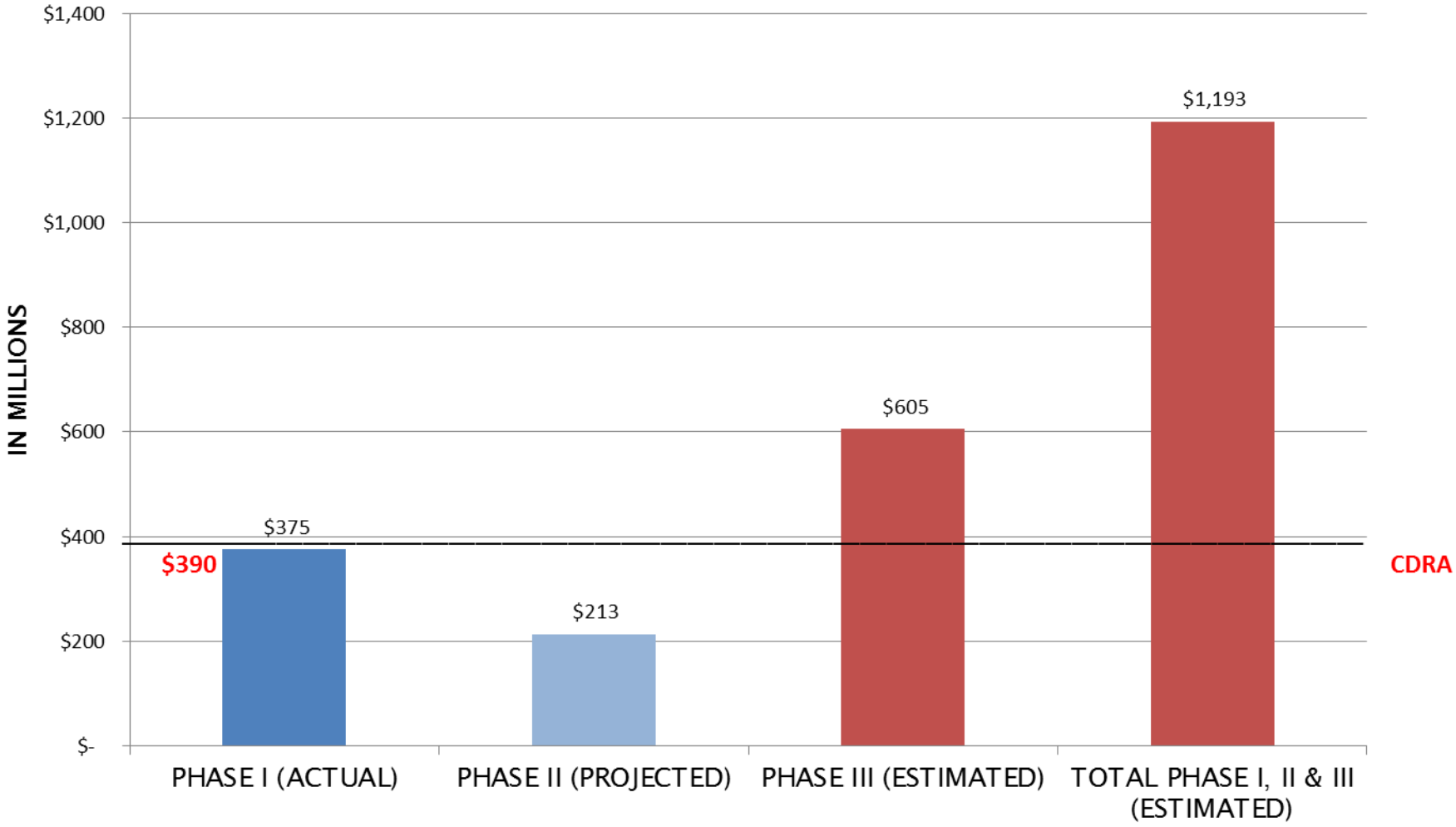
COMPLETED TUNNEL



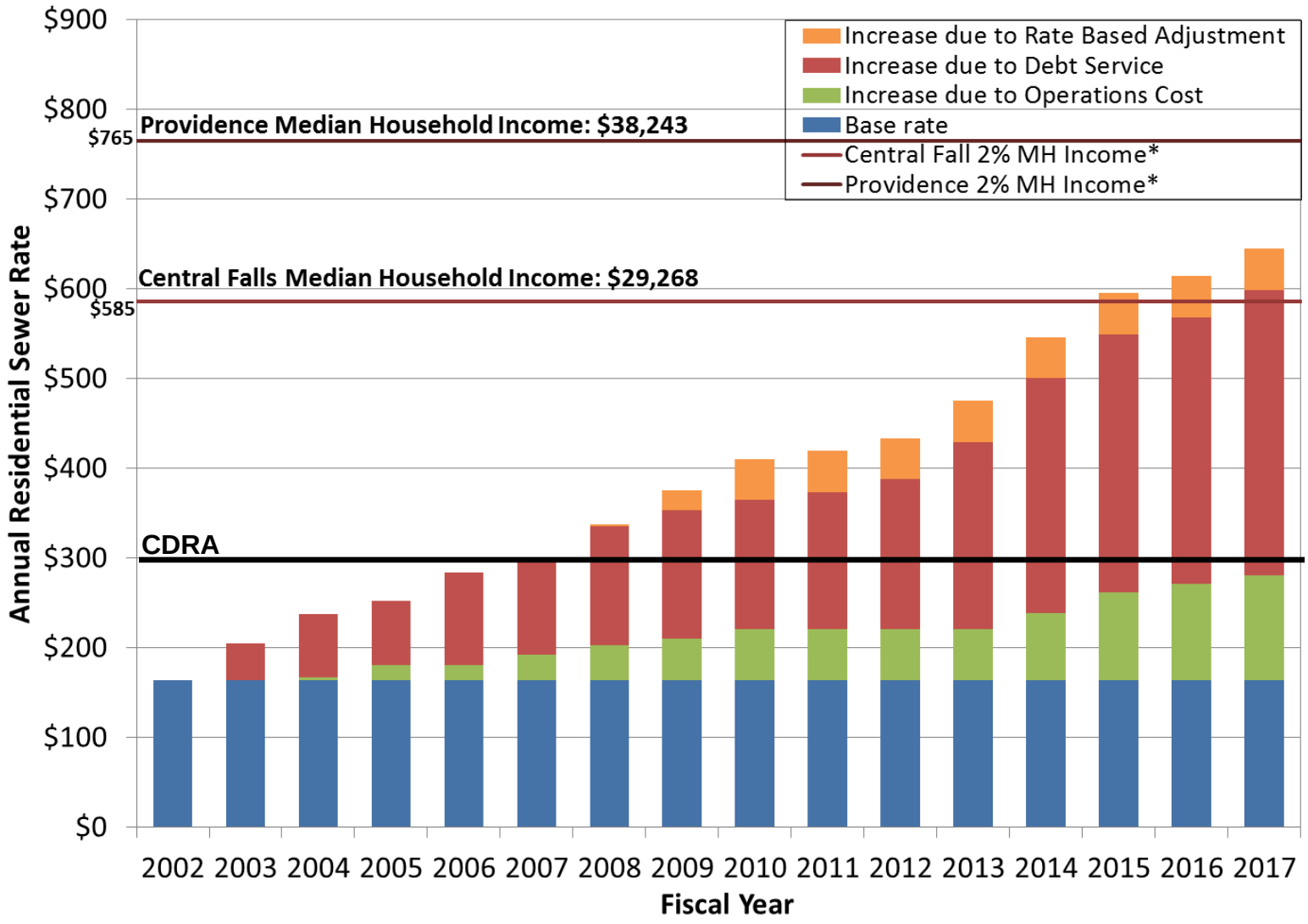
PIPE JACKING USING MICROTUNNELING MACHINE


NORTHEAST REMSCO
Construction
FARMINGDALE, NJ
SEEHONK RIVER

SUMMARY – CSO PROJECT COSTS BY PHASE



USER FEES



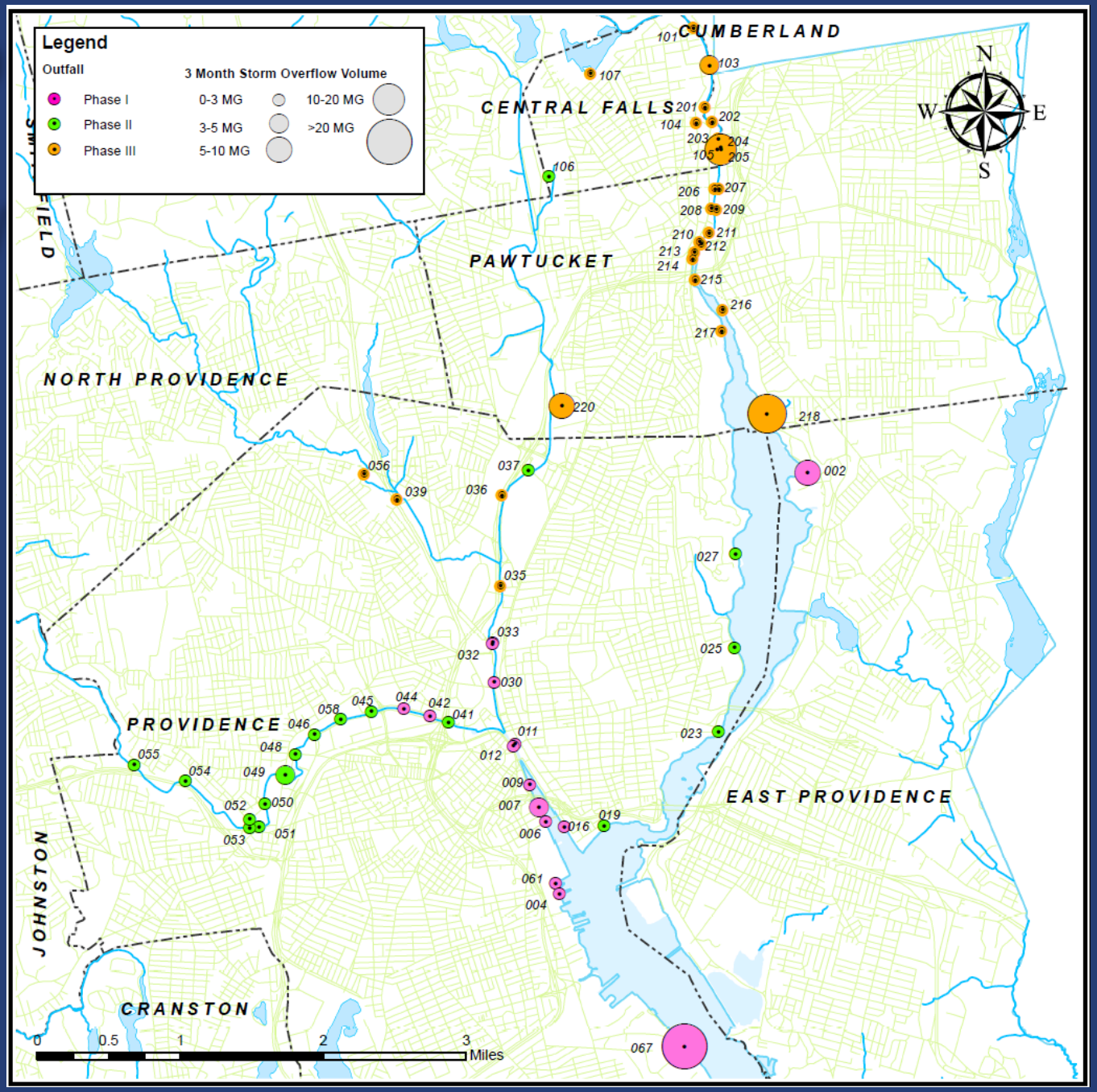
* Data based on U. S. Census Bureau, American Community Survey, 5-Year Estimate, 2008-2012

RE-EVALUATION TASKS

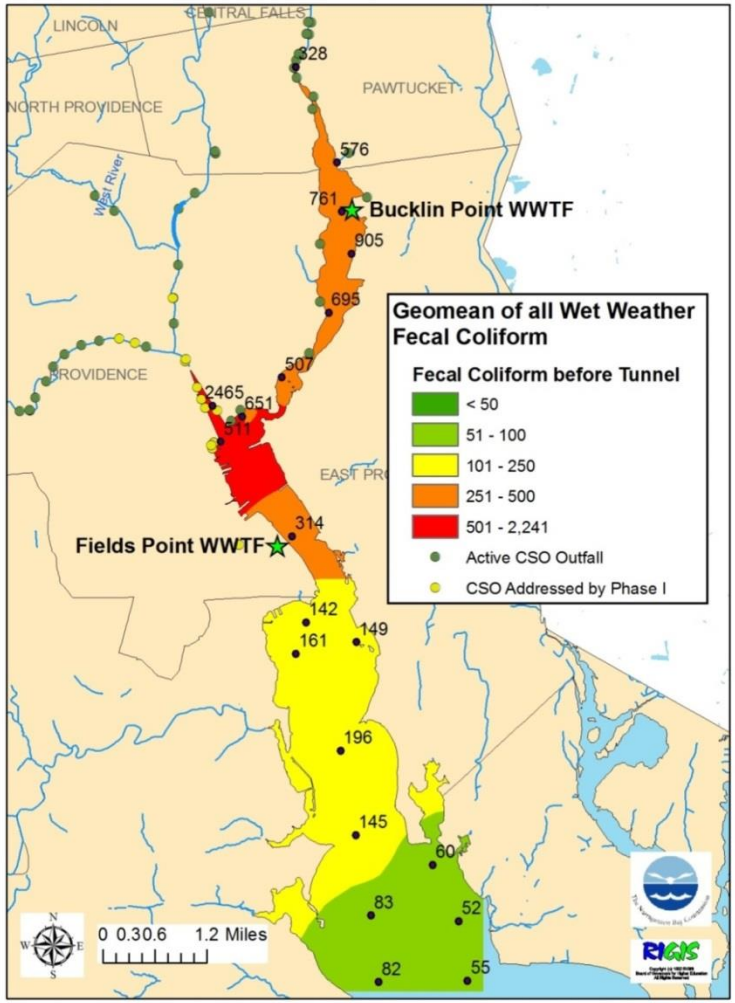
1. Develop a sewer hydraulic model for the Bucklin Point Service Area

2. Evaluate changes in water quality since completion of Phase I and expected water quality upon completion of Phases II and III

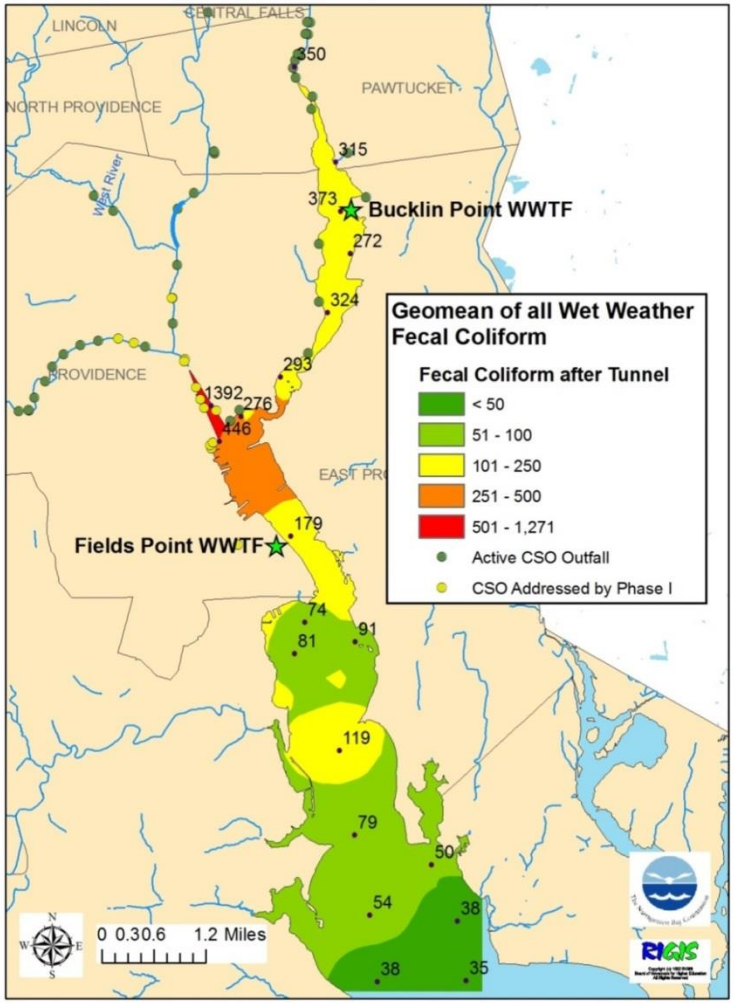
COMBINED SEWER OVERFLOW VOLUMES



UPPER BAY WET WEATHER BACTERIA LEVELS

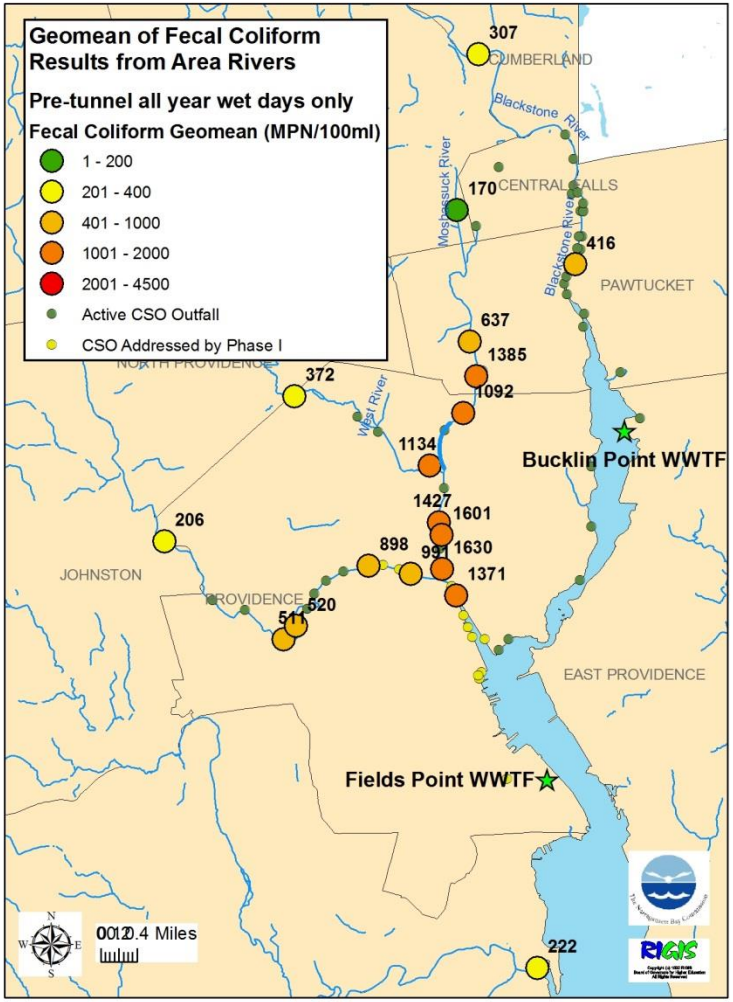


Pre-Phase I
2004 - October 2008

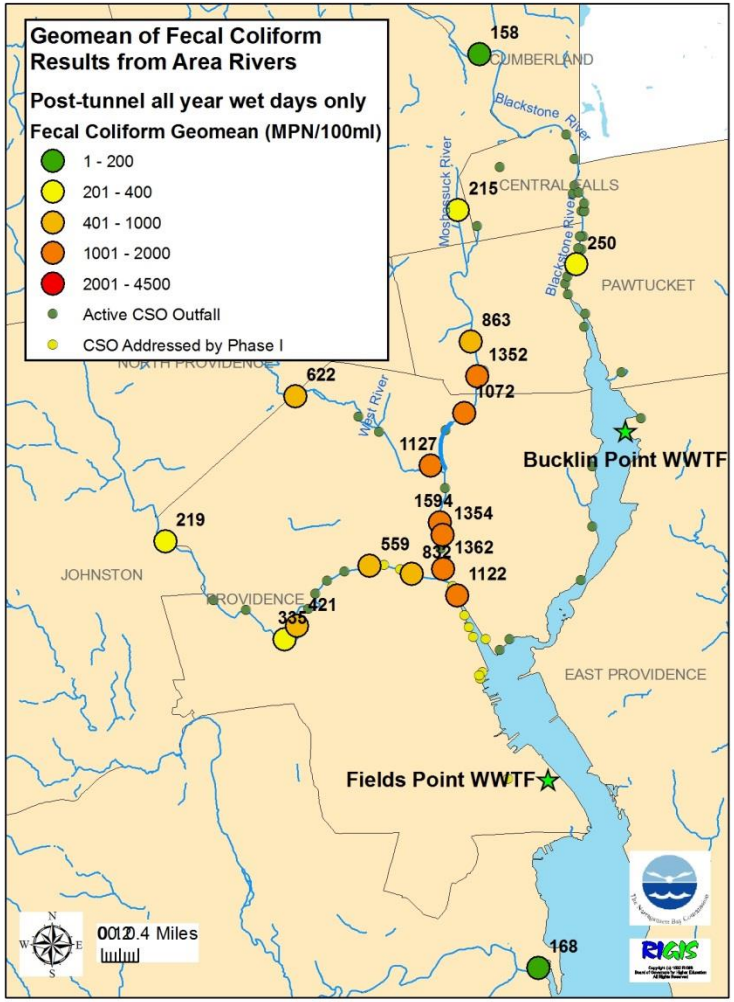


Post-Phase I
October 2008 - September 2013

RIVER WET WEATHER BACTERIA LEVELS



Pre-Phase I
2004 – October 2008



Post-Phase I
October 2008 – September 2013

CURRENT EPA APPROACH ON MEETING WATER QUALITY STANDARDS

- Integrated Planning Framework
  - WWTF's
  - CSO's
  - Sewer Infrastructure
  - Stormwater
- Do What You Can Afford Now
- Long Term Approach

RE-EVALUATION TASKS

3. Evaluate the recommended abatement method for each overflow and answer the following:
    - Is it the most cost effective method?
    - Are there any green infrastructure alternatives?

RE-EVALUATION TASKS

4. Develop a Cost Estimate for Phase III & determine the following:
    - Impact on sewer rates
    - Affordability based on EPA criteria

RE-EVALUATION TASKS

5. Map the Project Area

6. Conduct a soil/rock boring program as needed

7. Meet with the Stakeholders to discuss results and receive feedback