



# RESILIENT NJ RESILIENT RARITAN RIVER AND BAY COMMUNITIES

APPENDIX H:

REVIEW OF LONG-TERM CONTROL PLAN (LTCP)

August 12, 2022



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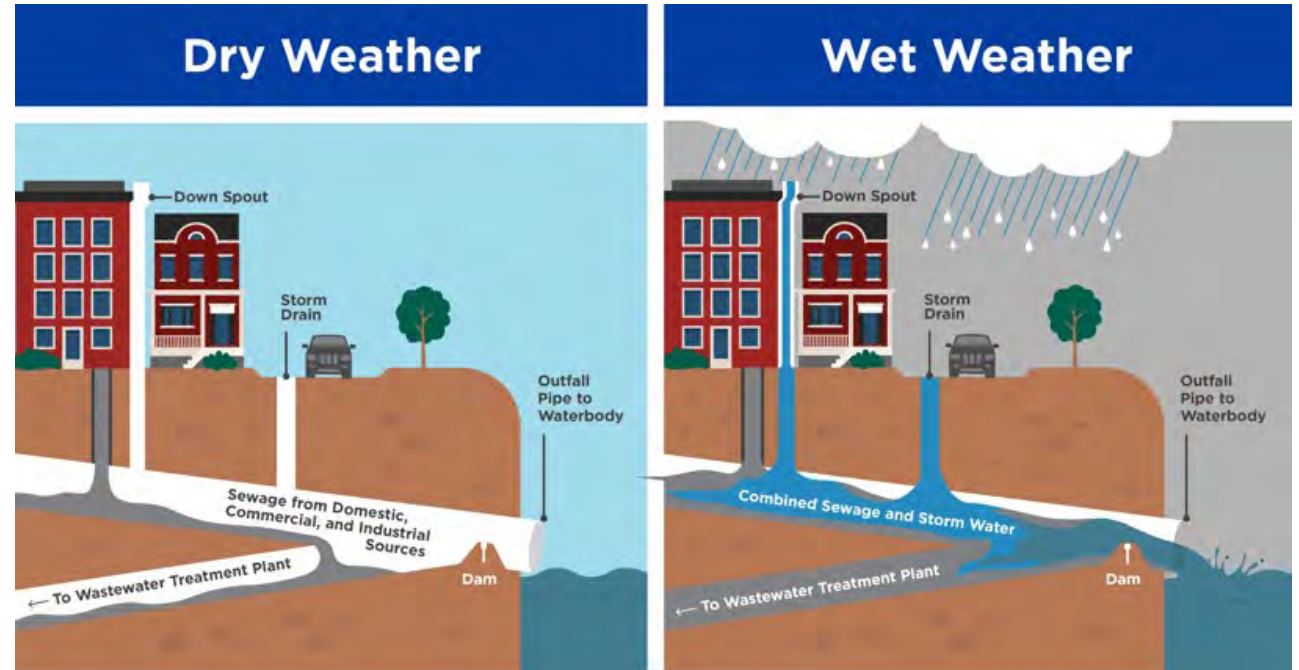
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# **OVERVIEW OF THE EXISTING LTCP PROCESS**

# What is a Long-Term Control Plan?

The goal of a Long-Term Control Plan (LTCP) is to eliminate 85% of Combined Sewer Overflows (CSOs) by volume in a typical year

- NJDEP requires utilities that operate combined sewer systems to develop LTCPs that outline steps they will take to reduce CSOs to improve water quality
- Within RRBC, **Perth Amboy** is the only municipality with a combined sewer system
- Each municipality has a unique plan using various control technologies to achieve this goal, including storage tanks/tunnels, sewer separate, increased capacity, green infrastructure, etc.
- Where flows cannot be reduced, end of pipe treatment is sometimes employed



*In a CSO, sewage flows into the same underground pipes as rainwater and flows from higher to lower elevations. During dry weather or light rain, this combined flow is carried to a treatment plant before being released into a body of water via an outfall. However, during heavy rain, coastal storms, or future high tide, these outfalls can get blocked, causing the combined sewage and stormwater to flow back up into streets and basements.*

# What does an LTCP currently take into consideration?

Existing LTCP requirements include a consideration of the following:

## Tidal Considerations

- The determined tidal depths for a typical year (2004), based on data from the National Oceanic and Atmospheric Administration (NOAA)
- Projected future tidal depths (2050) with sea level rise, based on a historical long-term linear trend

## Rainfall Considerations

- Future rainfall conditions based on historical precipitation records from 1970-2015
  - This time period shows an inclining pattern with an approximate change of +0.032 inches of rain per year

## Resilience Considerations

- Climate change and resiliency are to be considered further, during the detailed design, permitting, and implementation phases, as specified by permitting and/or funding agencies requirements

**2004 is considered a “typical year,” based on an analysis of 65+ years of long-term precipitation data**



# OVERVIEW OF THE PERTH AMBOY LTCP

# What does Perth Amboy's selected LTCP include?

The goal of the Perth Amboy LTCP is to store and treat at least 328.1 million gallons (MG) of CSO volume. The selected LTCP costs a total of \$69 million and includes 9 Plan Elements:

- **Plan Element 1 – Sewer Separation**
  - 8 acres of the existing combined sewer system will be separated into distinct sewage and stormwater flows
- **Plan Element 2 – Green Infrastructure**
  - 46.8 impervious acres (10% of the City's total area) will be converted into green infrastructure
- **Plan Element 3 – New Main Pumping Station and Force Main** routed to the (Middlesex County Utilities Authority) wastewater treatment facility
- **Plan Element 4 – CSO Groups 4 and 5**
  - A Sheridan Street storage tank will store 0.9 MG of volume
  - A Smith Street storage tank will store 3.1 MG of volume
- **Plan Element 5 – CSO Group 3**
  - A Second Street storage tank will store 7.8 MG of volume
- **Plan Element 6 – CSO Group 1**
  - A high-rate treatment facility will be implemented at Rudyk Park with a peak flow rate of 1.2 millions of gallons per day (MGD)
- **Plan Element 7 – CSO Group 2**
  - High-rate treatment facilities will be implemented near the following CSOs:
    - P-003 (Buckingham Ave)
    - P-004 (Washington St),
    - P-005 (Commerce St)
    - P-006 (Fayette St)
    - P-007 (Smith St)
    - P-008 (Gordon St)
  - Each of these CSOs discharges to the Arthur Kill with and a combined level of treatment of 1.3 MGD
- **Plan Element 8 – Treatment Plant Expansion and Storage**
  - *This is no longer being considered*
- **Plan Element 9 – Infiltration and Inflow Reduction**

# Perth Amboy LTCP proposed storage tank locations





# **RECOMMENDATIONS FOR THE RRBC LTCP PROCESS**

# Recommendations

**The purpose of these recommendations is to maximize LTCP effectiveness now and into the future with climate change and to leverage these investments to advance resilience-related goals**

## Near-Term Recommendations

### *Design of LTCP Improvements:*

1. Optimize “dig once” opportunities to implement multiple resilience practices, such as green infrastructure, sewer separation, curb improvements, etc.
2. Use best-available data of future rainfall and sea level rise (SLR) projections in lieu of historic data to better plan for the future
3. Consider long-term effects of other (non-flooding) climate hazards and possible co-benefits
4. Upsize critical infrastructure to increase flood mitigation potential when feasible
5. Elevate critical infrastructure that could be impacted by flooding above the 500-year elevation, factoring in potential SLR expected over the useful life
6. Floodproof critical flood management components such as pump stations and control systems

### *Engagement:*

7. (For Perth Amboy): Leverage LTCP projects to include homeowner outreach on flood mitigation, such as backflow prevention, temporary barriers, etc.
8. (For Perth Amboy): Support outreach efforts as the LTCP moves into the design phase

# Recommendations

**The purpose of these recommendations is to maximize LTCP effectiveness now and into the future with climate change and to leverage these investments to advance resilience-related goals**

## Long-Term Policy Recommendations

### *Recommendations for the State*

1. Implement requirements to create a more efficient LTCP process that effectively meets resiliency goals while realizing multiple co-benefits, including:
  - Requiring “dig once” to optimize implementation of multiple interventions with minimal cost and disruption
  - Requiring coordination of any capital improvements with the LTCP process

### *Recommendations for Perth Amboy and Middlesex County*

2. Continue to explore the feasibility of a Stormwater Utility to support the implementation of stormwater resilience improvements

### *Recommendations for Both the State, County, and Perth Amboy*

3. Explore enhancements to local codes and standards to harden and/or elevate relevant, new, or substantially improved infrastructure to the elevation set by NJ PACT (New Jersey Protecting Against Climate Threats)
  - This elevation varies depending on whether the structure is in a fluvial flood hazard area versus a newly-defined inundation risk zone
  - This typically involves the addition of one or more feet above the FEMA 100-year flood elevation (“freeboard”)