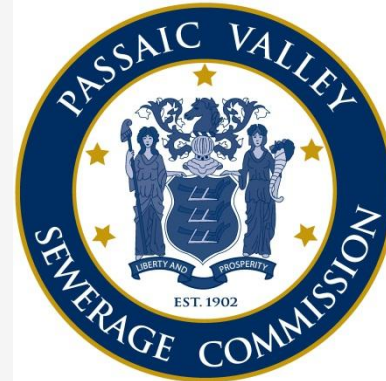


# Passaic Valley Sewerage Commission



## Comprehensive Water Resource Management Plan

*Ashley T. Slagle, PVSC*

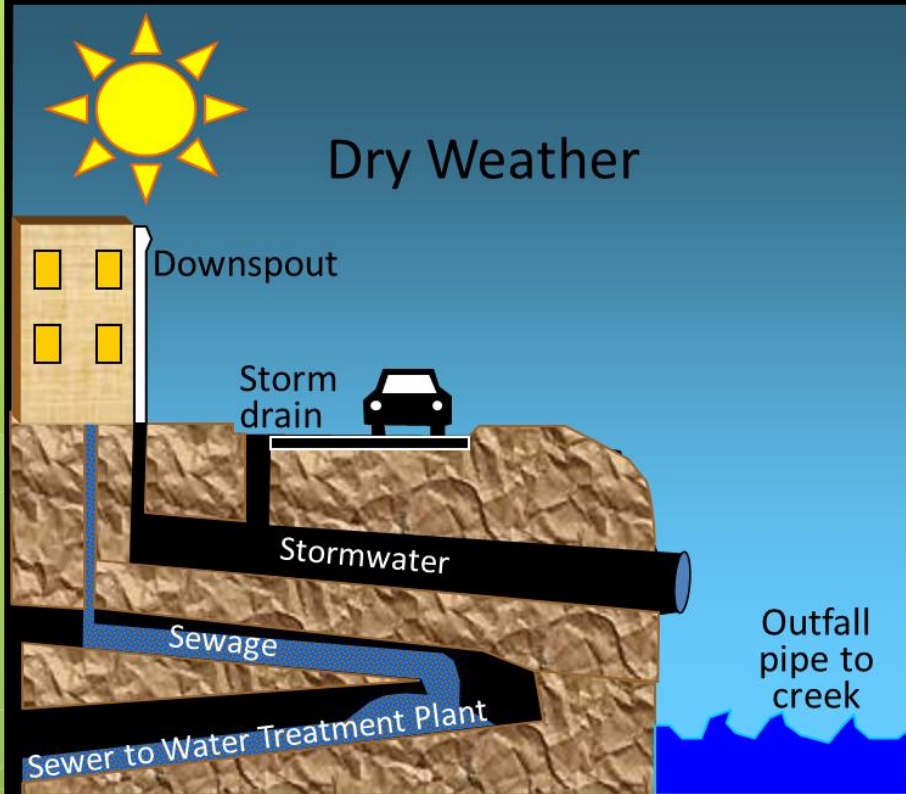
NJDEP Comprehensive Water  
Resource Management Seminar  
*Meadowlands Environmental Commission*

April 29, 2013

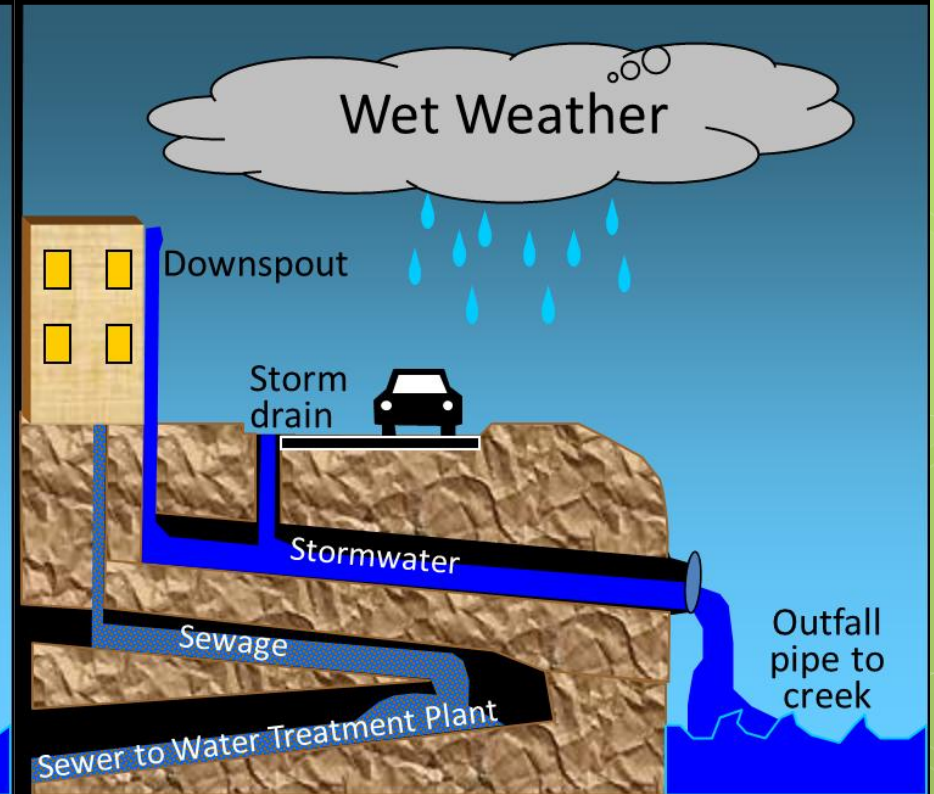
# Separate Sewer Systems

- DRY weather:
  - Wastewater from homes and businesses flows through sanitary sewer to treatment plant
- WET weather:
  - Consistent volume of wastewater flow through sanitary sewer to treatment plant
  - Stormwater from runoff and downspouts flows through storm sewer to river

# Separate Sewer



# Separate Sewer



SOURCE: Philadelphia Water Department

# Combined Sewer Systems

- DRY weather:

- Wastewater from homes and businesses flows through combined sewer to treatment plant

- WET weather:

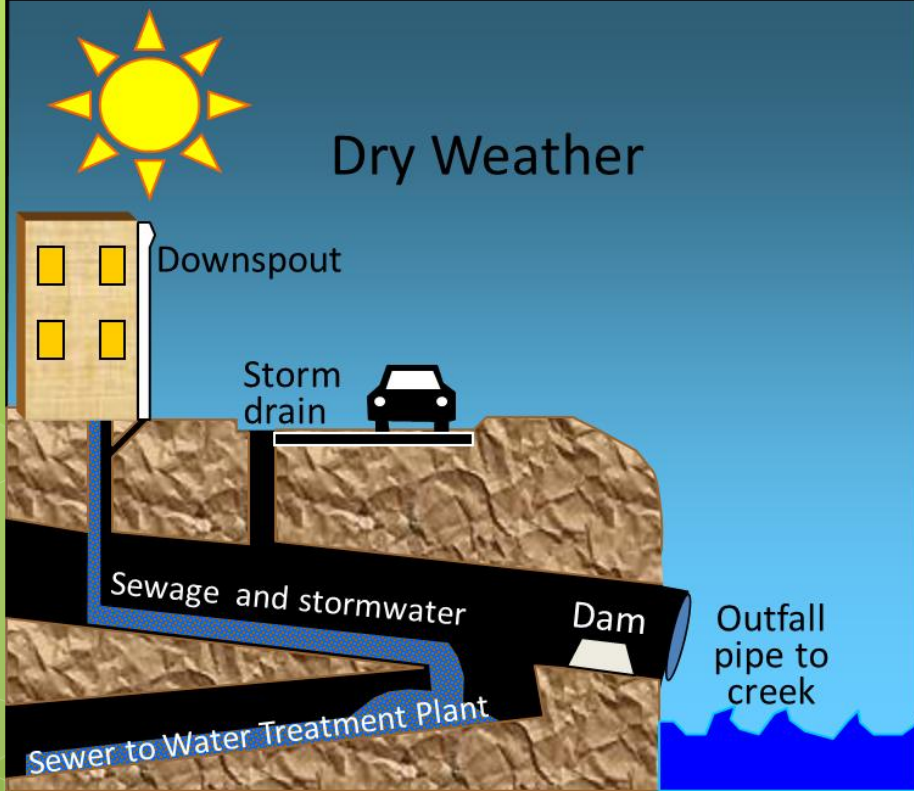
- Consistent volume of wastewater flow through combined sewer to treatment plant
- Stormwater from runoff and downspouts ALSO flows through combined sewer to treatment plant
- When total volume of wastewater + stormwater in combined sewer exceeds capacity of sewer or the treatment plant



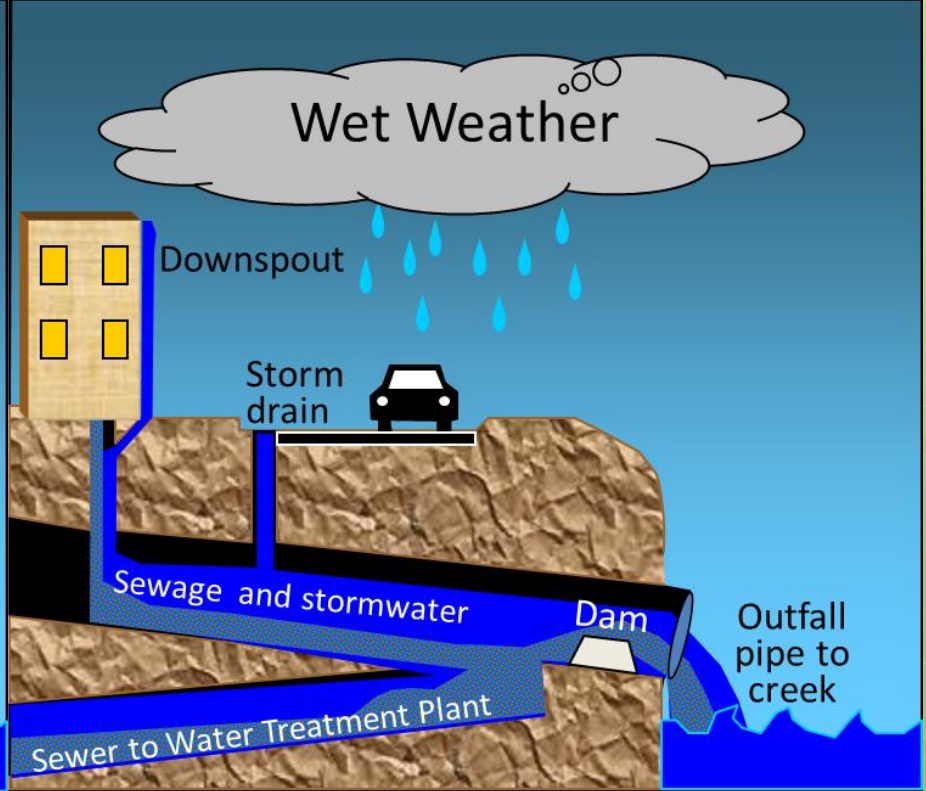
**excess volume overflows to river**

during Combined Sewer Overflow (CSO)

# Combined Sewer



# Combined Sewer



SOURCE: Philadelphia Water Department

# Combined Sewer Systems

- If the amount of stormwater entering the combined sewer system can be reduced or at least delayed until wet weather event subsides:

➡ Create more capacity in the combined sewer for wastewater during wet weather

➡ Reduce occurrence of CSOs to river

# PVSC's Plan for Reducing Combined Sewer Overflows (CSOs)

- 1) Increase Wet Weather Flow Capacity at PVSC
- 2) Reduce stormwater flows to Combined Sewer Systems by increasing Green Infrastructure (GI) throughout PVSC Sewerage District

# PVSC's Plan for Increased Wet Weather Flow Capacity

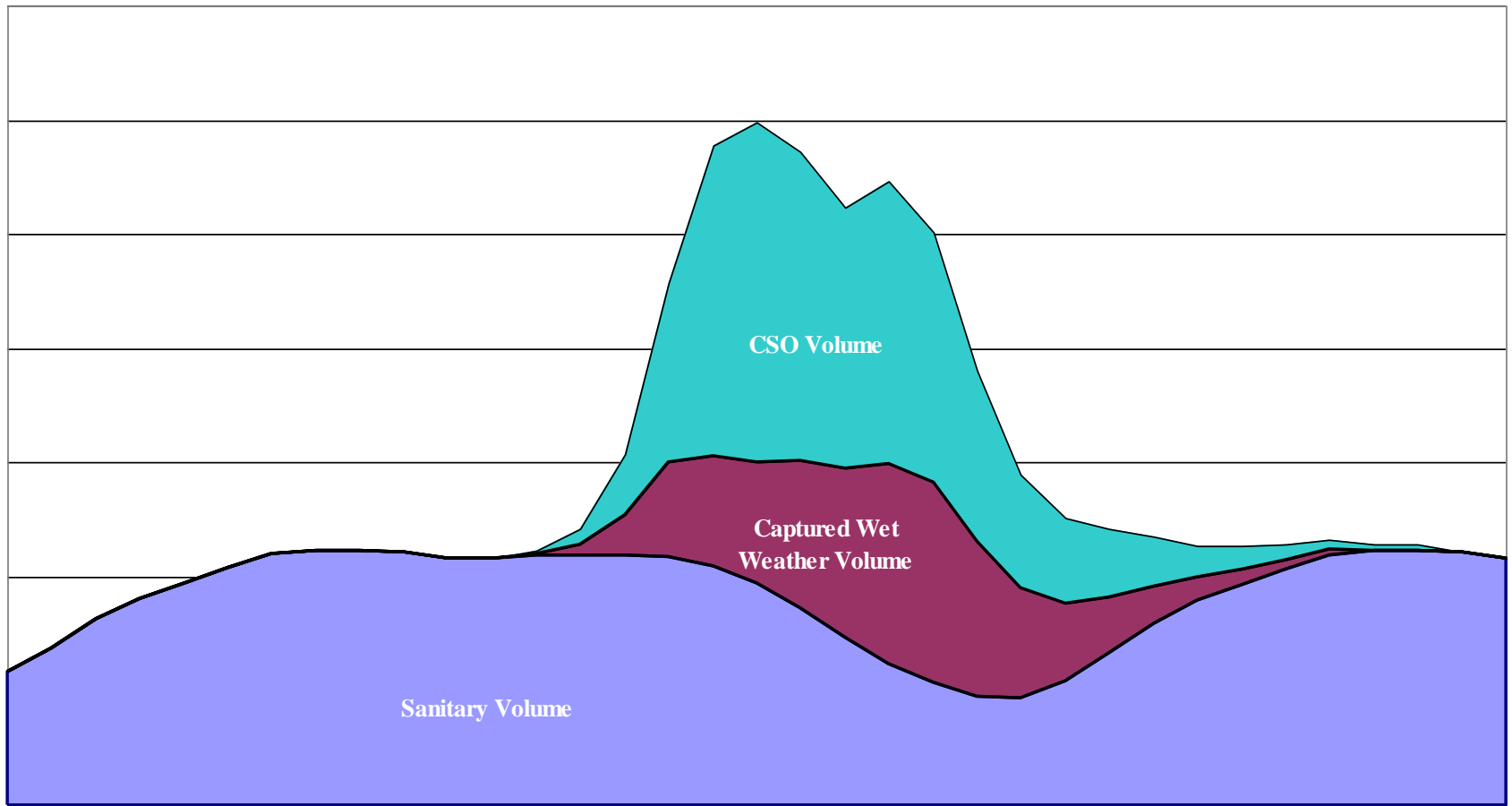
- PVSC has been actively working towards increasing WET weather flow capacity to a maximum of **720 MGD**
- Multiple Capital Projects planned:
  - Several ongoing projects in different stages of development
  - Projects on hold due to damages from Superstorm Sandy – will resume as recovery progresses



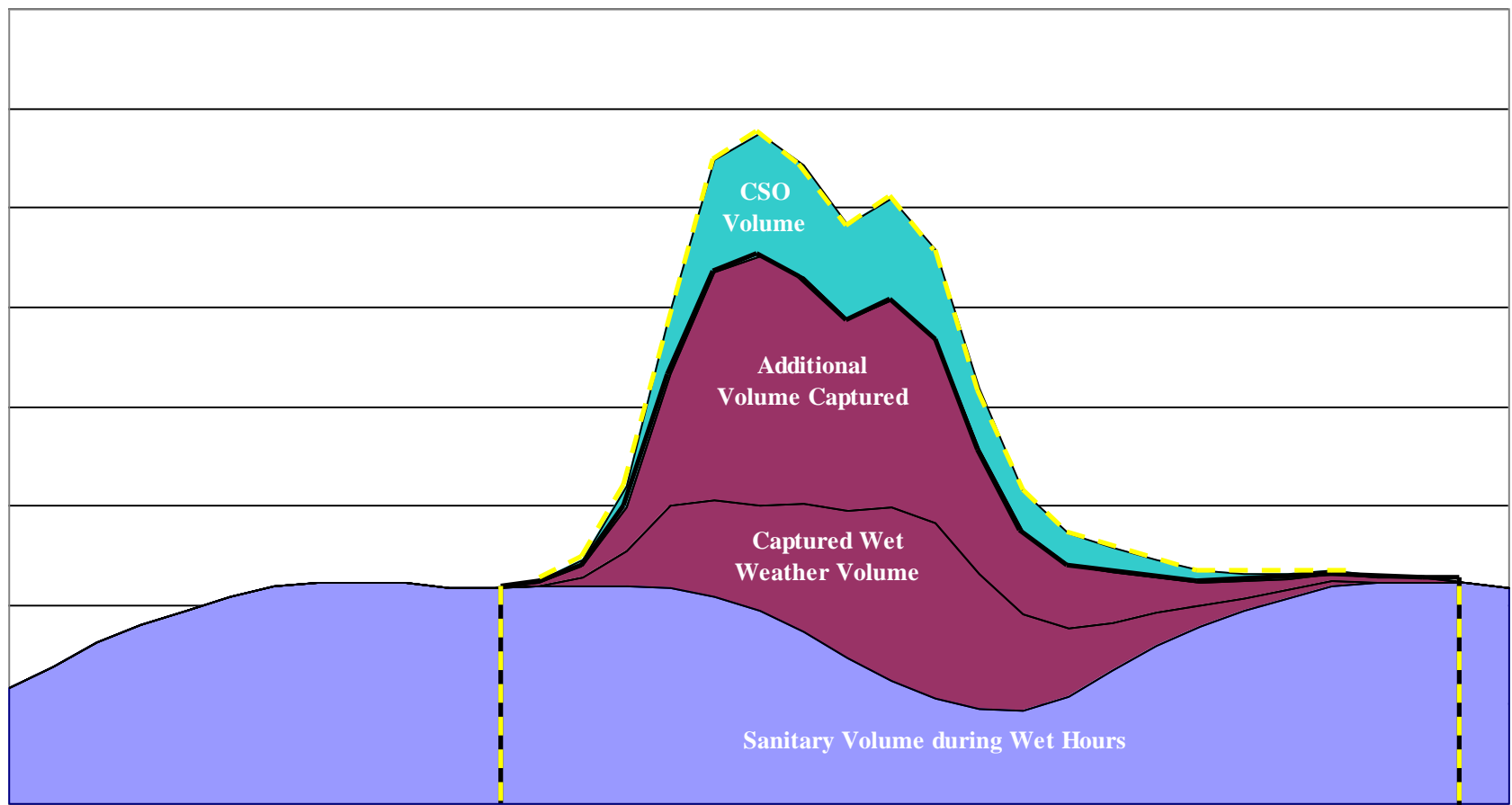
# PVSC's Plan for Increased Wet Weather Flow Capacity

- Added benefit: PVSC will be able to treat sanitary waste from homes **AND** stormwater carrying various types of Nonpoint Source Pollution (fertilizers, oil/grease, etc.) at full Secondary Treatment levels

# Current Wet Weather Flow Volume Captured at the Treatment Plant



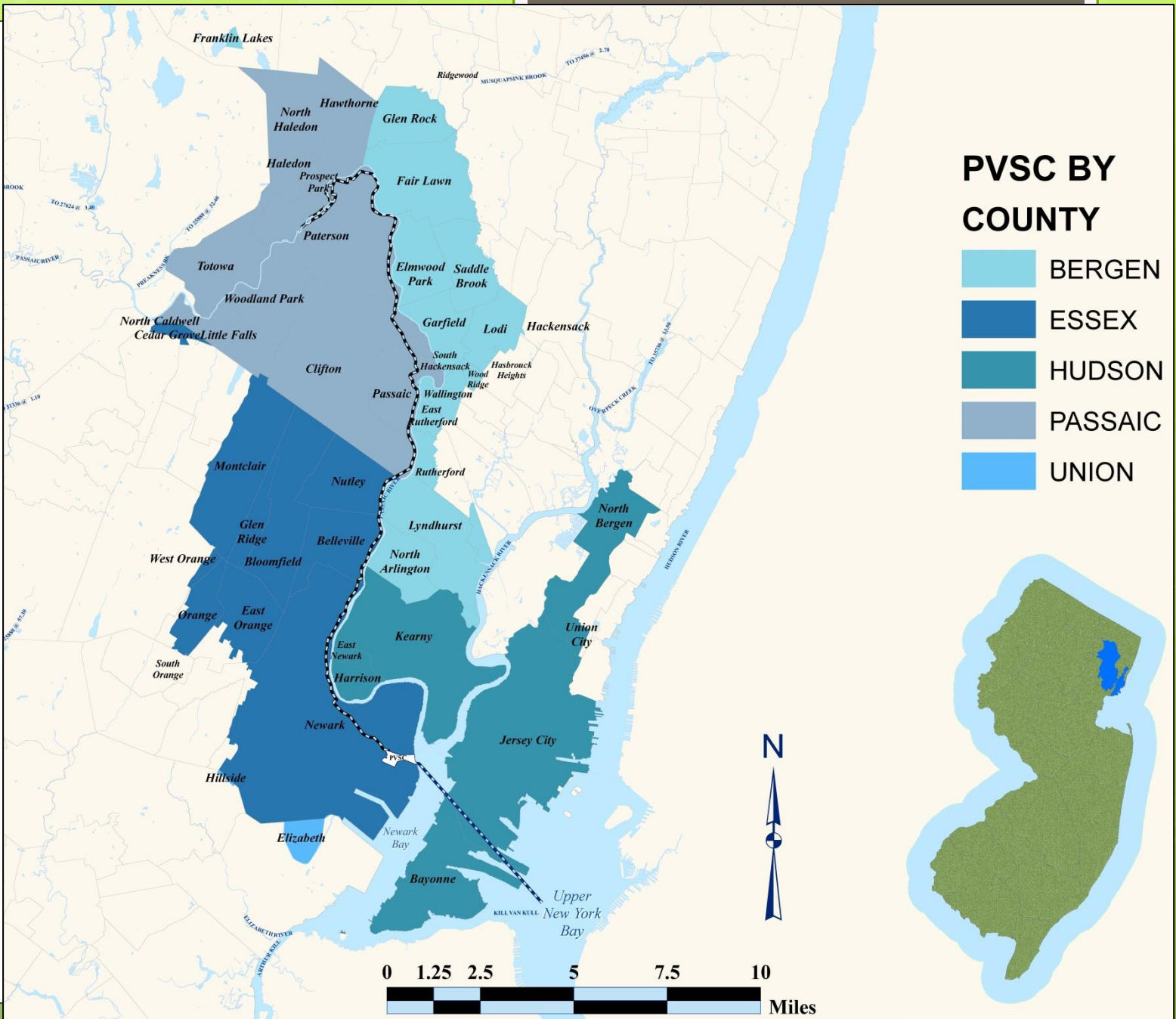
# Proposed Wet Weather Flow Volume Captured at the Treatment Plant



# PVSC's Plan for Promotion of Green Infrastructure (GI)

- The PVSC Sewerage District
  - 48 municipalities in 5 counties
  - Includes both Separate and Combined Sewer Systems
    - 9 with Combined Sewer Systems
- Combined Sewer Overflows (CSO)s and stormwater runoff can impact ambient water quality
  - Can be alleviated with use of Green Infrastructure (GI)
- Green Infrastructure components will be required in CSO Long Term Control Plans

# PVSC Sewerage District



# PVSC's Plan for Promotion of Green Infrastructure (GI)

- PVSC is dedicated to leading efforts throughout the PVSC Sewerage District to:
  - 1) intercept stormwater runoff
  - 2) reduce Combined Sewer Overflows (CSOs)
  - 3) manage existing water infrastructure
  - 4) minimize frequent flooding events
- PVSC has entered into a partnership with Rutgers Cooperative Extension (RCE) Water Resources Program to achieve these goals

# PVSC's Plan for Promotion of Green Infrastructure (GI)

## ● Green Infrastructure Program (Year 1)

### **3 Main Objectives:**

- 1) Municipal Outreach and Education
- 2) Community-Based Technical Assistance
- 3) Green Infrastructure Demonstration Projects

# PVSC's Plan for Promotion of Green Infrastructure (GI)

## Objective 1 – Municipal Outreach and Education

**April – May 2013**

- Initial Stakeholder meeting
- Development of educational materials and distribution to municipalities
- Kick-off Event @ PVSC
- Program website to be developed and hosted by RCE Water Resources Program



# PVSC's Plan for Promotion of Green Infrastructure (GI)

## Objective 1 – Municipal Outreach and Education

**June 2013**

- 4 outreach sessions by county:
  - Bergen, Passaic, Hudson, Essex/Union
- Identify priority municipalities prepared to pursue a community-wide Green Infrastructure program

# PVSC's Plan for Promotion of Green Infrastructure (GI)

## Objective 2 – Community-Based Technical Assistance

**July – December 2013**

- Work individually with interested municipalities
- PVSC & RCE Water Resources Program:
  - Complete Municipal-Wide GI Assessment and Opportunity Analyses for 6-8 individual municipalities through cost-sharing agreements between PVSC and the municipalities
- Municipalities must:
  - Provide available mapping, digital data, and other resources as necessary
  - Commit resources to complete 2 GI demonstration projects detailed in the final municipal assessment

# PVSC's Plan for Promotion of Green Infrastructure (GI)

## Objective 3 – GI Demonstration Projects

### **April – December 2013**

- RCE Water Resources Program will develop and install 2 GI demonstration projects with PVSC
  - 1<sup>st</sup> project on PVSC property
  - 2<sup>nd</sup> project within PVSC Sewerage District
  - Projects may include rain gardens, bioswales, porous pavement, rainwater harvesting systems
  - Demonstrate practical, cost-effective strategies that can be replicated throughout the PVSC Sewerage District

# PVSC's Plan for Promotion of Green Infrastructure (GI)

## Objective 3 – GI Demonstration Projects

### **April – December 2013**

- RCE Water Resources Program will hold GI training workshop for PVSC staff and interested municipal representatives
  - Learn planning, design, construction, and maintenance of GI projects
  - Opportunity to assist with construction of 2<sup>nd</sup> GI demonstration project

## PVSC's Plan for Promotion of Green Infrastructure (GI)

- Plan to renew partnership with RCE Water Resources Program for multiple years
- Continue to expand use of GI throughout PVSC Sewerage District

**TOGETHER**, we can improve **water quality**  
**AND quality of life** through the use of  
**Green Infrastructure**

# Questions?



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