



Combined Sewer Overflow Long Term Control Plans

Alley Creek Public Meeting #2

Alley Pond Environmental Center

May 1, 2013

1. Welcome & Introductions – *Shane Ojar, DEP*
2. Long Term Control Plan (LTCP) Process – *Keith Mahoney, DEP*
3. Alley Creek & Little Neck Bay Waterbody/Watershed Characteristics – *Srinivasan Rangarajan, DEP*
4. Open Discussions of Current Recreational Uses in Alley Creek/Little Neck Bay – *Srinivasan Rangarajan, DEP*
5. Proposed Draft Alternatives for Alley Creek LTCP – *Keith Mahoney, DEP*
6. Next Steps – *Keith Mahoney, DEP*
7. Discussion and Q&A Session

- Provide background and overview of LTCP planning process
- Present Alley Creek watershed characteristics and status of water quality conditions
- Obtain public input on waterbody uses in Alley Creek
- Describe alternatives identification and selection process

Overview of Combined Sewer Overflow Long Term Control Plan Process

Keith Mahoney
DEP

What is an LTCP?

- Required under NYC SPDES permits pursuant to the Clean Water Act (CWA) and Federal CSO Control Policy; CSO Order establishes time frames for submittal.
- Comprehensive evaluation of impact that CSO have on water quality and determination of highest attainable and appropriate water quality standards.
- The goal of each LTCP is to identify appropriate CSO controls necessary to achieve waterbody-specific water quality standards, consistent with the Federal CSO Policy and water quality goals of the CWA.

- Assesses feasibility of attaining current water quality standards, next highest standards and fishable/swimmable standards;
- Builds off Waterbody/Watershed Facility Plans or the first phase of the planning process;
- Requires robust, targeted public process; and
- Identifies grey-green infrastructure balance for different watersheds.

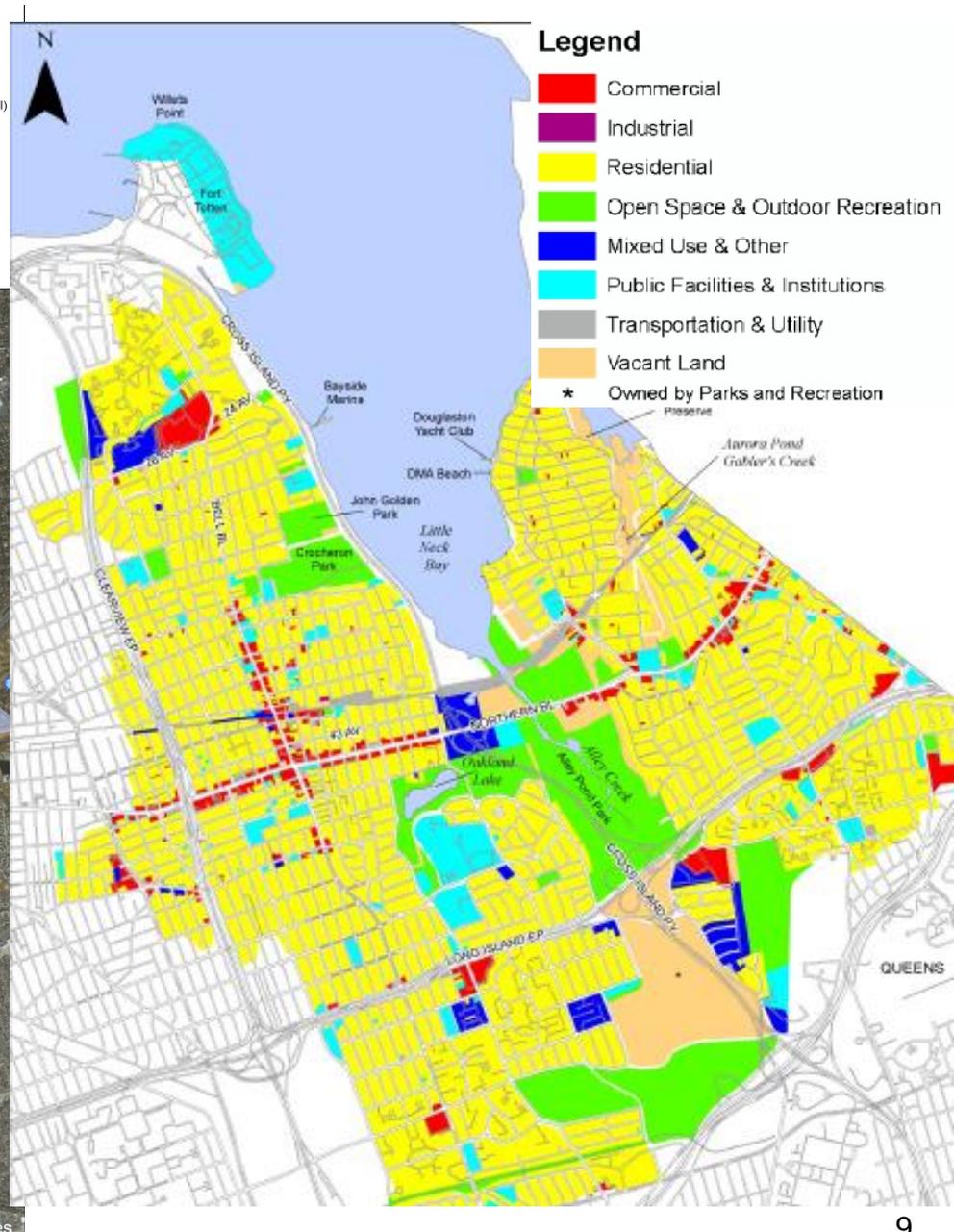
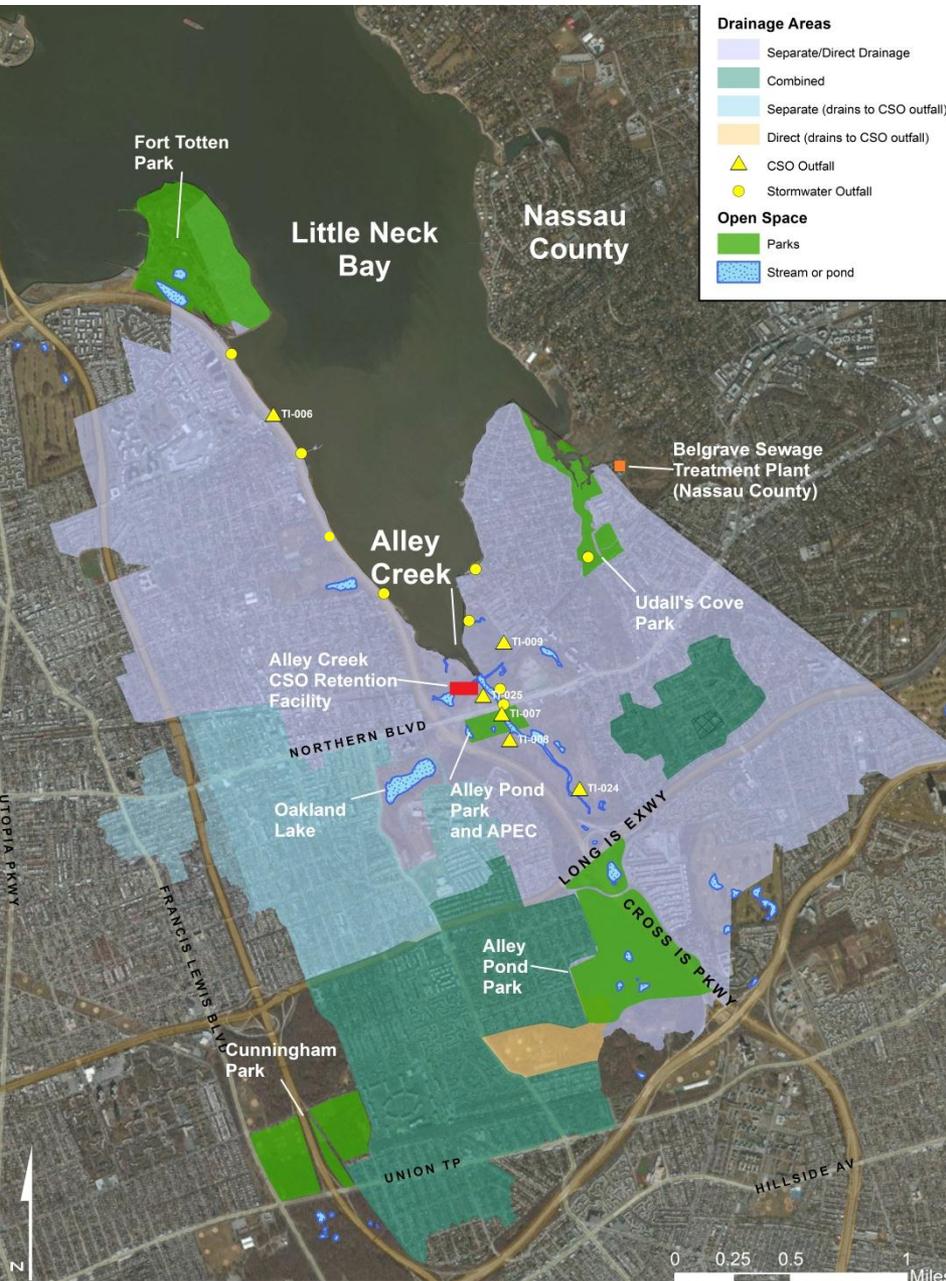
1. Introduction
2. Watershed/Waterbody Characteristics
3. CSO Best Management Practices
4. Grey Infrastructure
5. Green Infrastructure
6. Baseline Conditions and Performance Gap
7. Public Participation and Agency Coordination
8. Evaluation of Alternatives
9. Long Term Control Plan Implementation
10. References
11. Glossary

Waterbody & Watershed Characterization

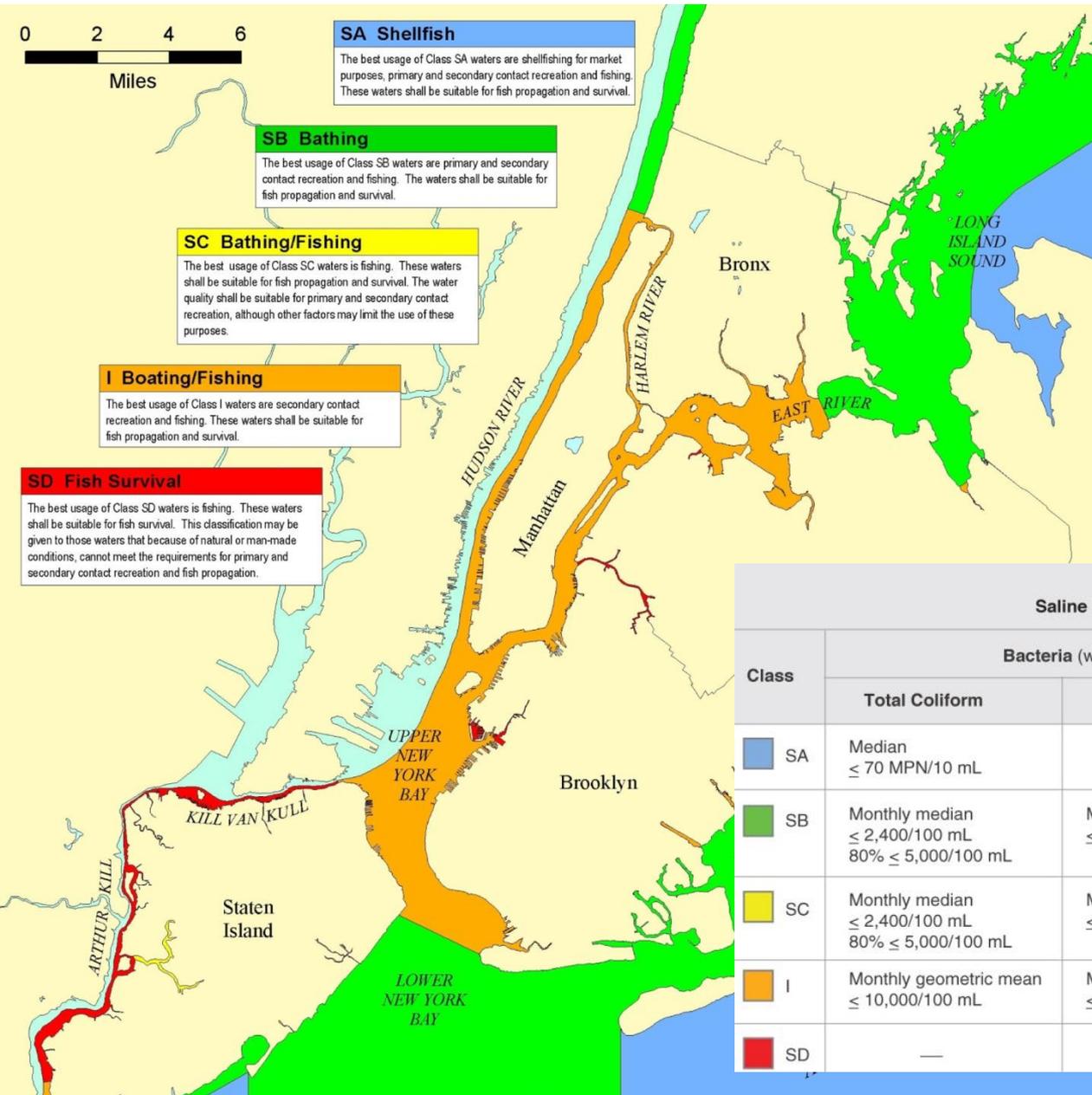
Srinivasan Rangarajan
DEP



Watershed Characteristics



Current Water Quality Standards

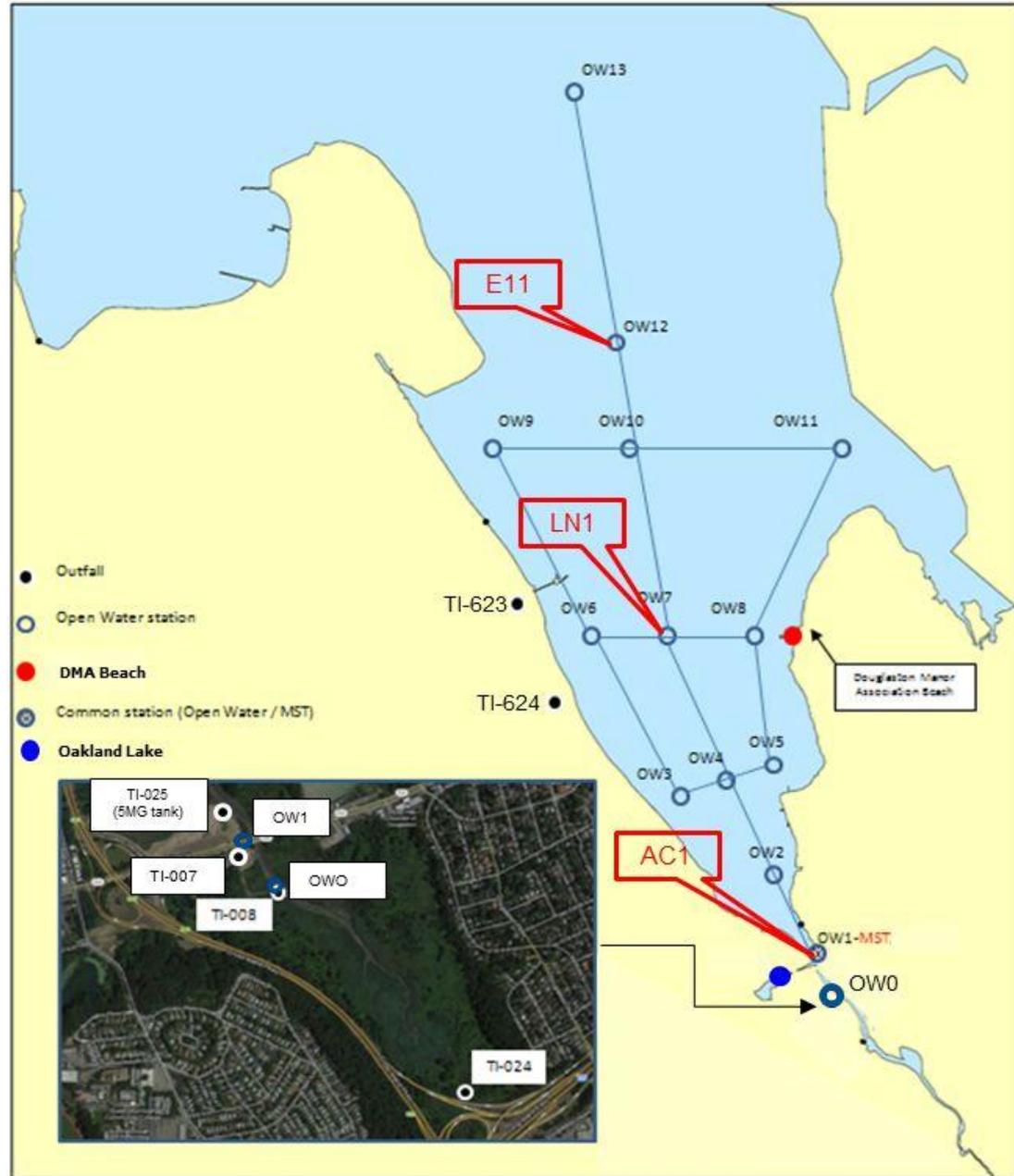


- ❖ Best Use Designations
- ❖ Saline Surface Water Quality Standards
- ❖ Alley Creek – Class I
- ❖ Little Neck Bay – Class SB

New York State Saline Surface Water Quality Standards				
Class	Bacteria (when disinfection is practiced)			Dissolved Oxygen
	Total Coliform	Fecal Coliform	Enterococci	
SA	Median ≤ 70 MPN/10 mL	—	Geometric mean ≤ 35/100 mL	> 4.8 mg/l (daily avg) ≥ 3.0 mg/l
SB	Monthly median ≤ 2,400/100 mL 80% ≤ 5,000/100 mL	Monthly geometric mean ≤ 200/100 mL	Geometric mean ≤ 35/100 mL	> 4.8 mg/l (daily avg) ≥ 3.0 mg/l
SC	Monthly median ≤ 2,400/100 mL 80% ≤ 5,000/100 mL	Monthly geometric mean ≤ 200/100 mL	Geometric mean ≤ 35/100 mL	> 4.8 mg/l (daily avg) ≥ 3.0 mg/l
I	Monthly geometric mean ≤ 10,000/100 mL	Monthly geometric mean ≤ 2,000/100 mL	—	≥ 4.0 mg/l
SD	—	—	—	≥ 3.0 mg/l

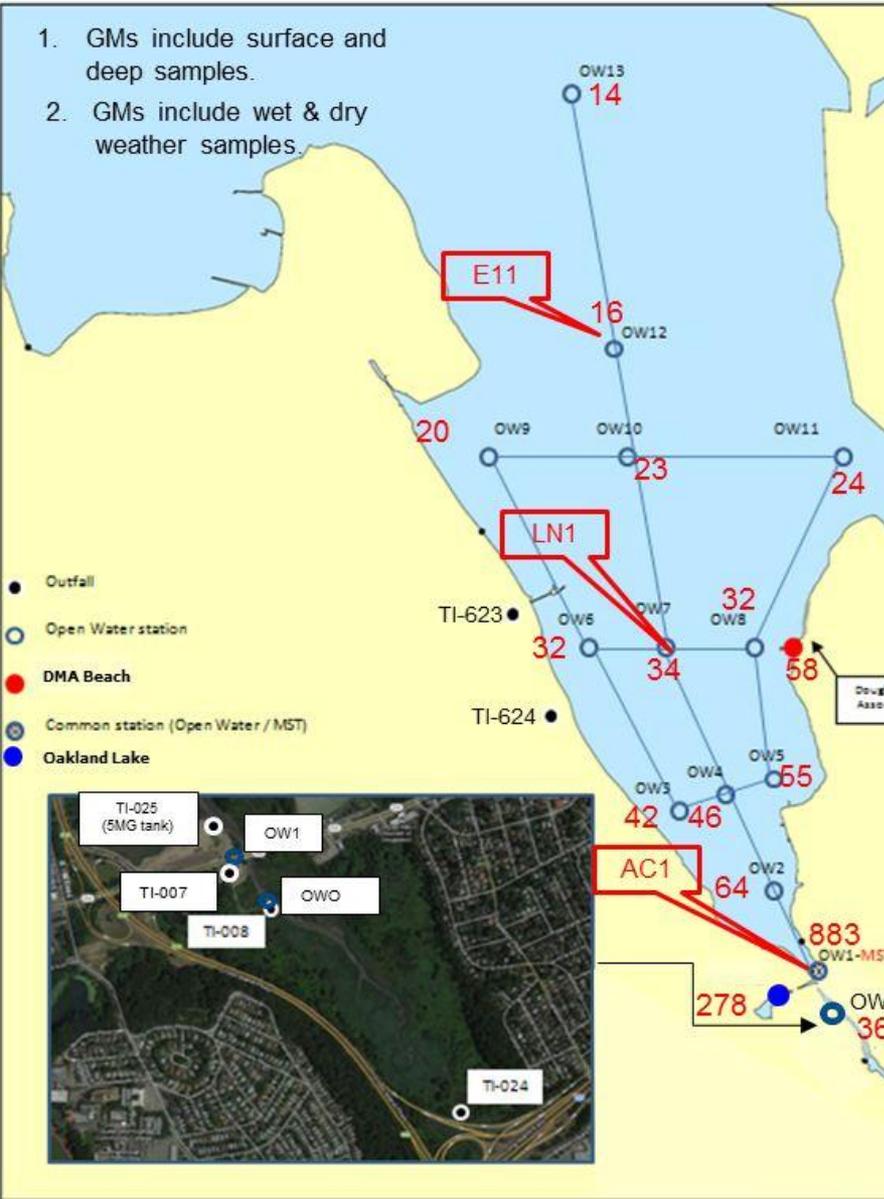
Ambient Water Quality (WQ) Monitoring

- ❖ Long term WQ monitoring through DEP's Harbor Survey Program
- ❖ DOHMH data at DMA beach
- ❖ Comprehensive study conducted in Fall 2012
- ❖ Better quantify spatial and temporal impacts of non-attainment
- ❖ Test for human and non-human markers to support the above analyses



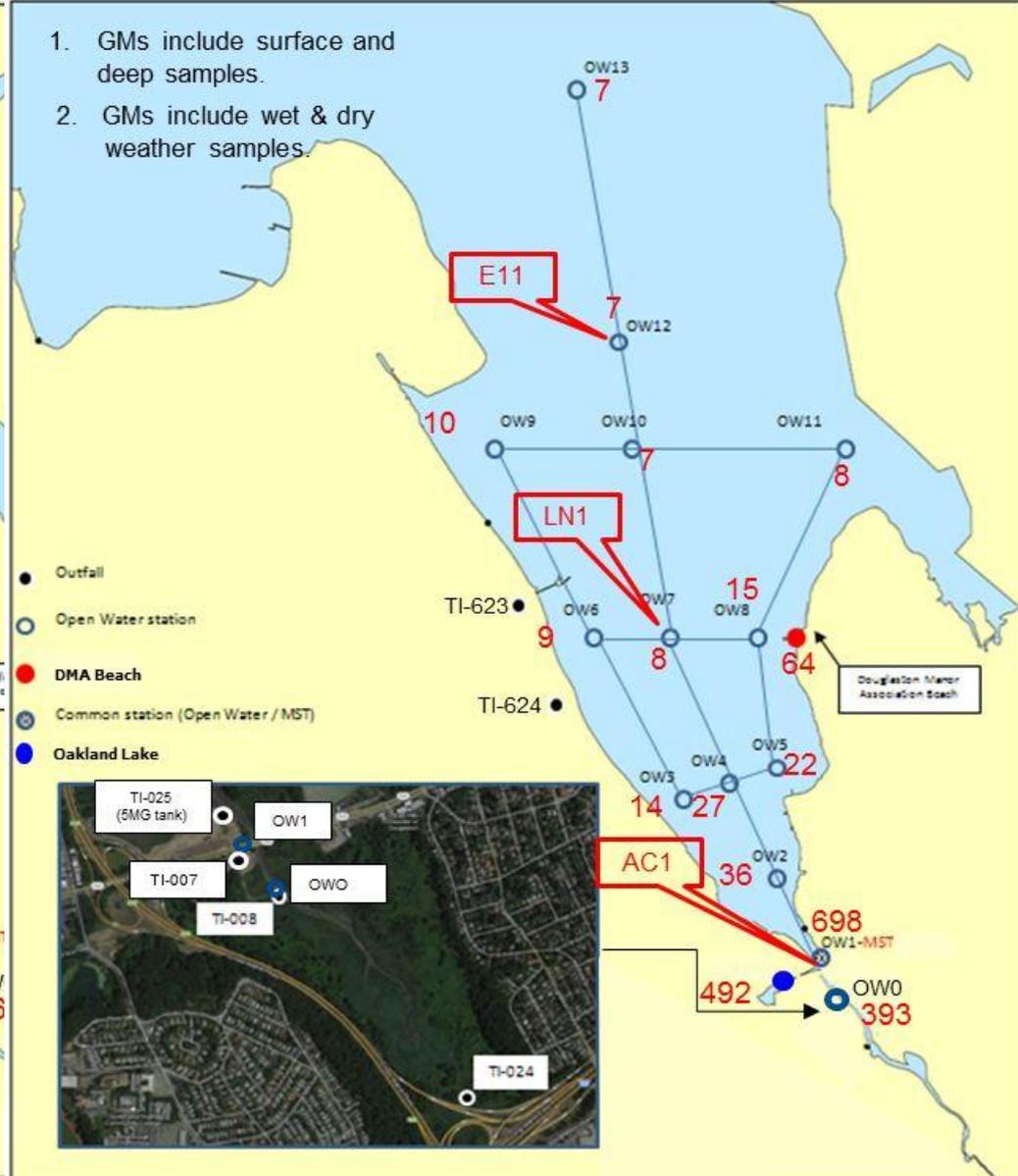
Synoptic Survey Results

1. GMs include surface and deep samples.
2. GMs include wet & dry weather samples.



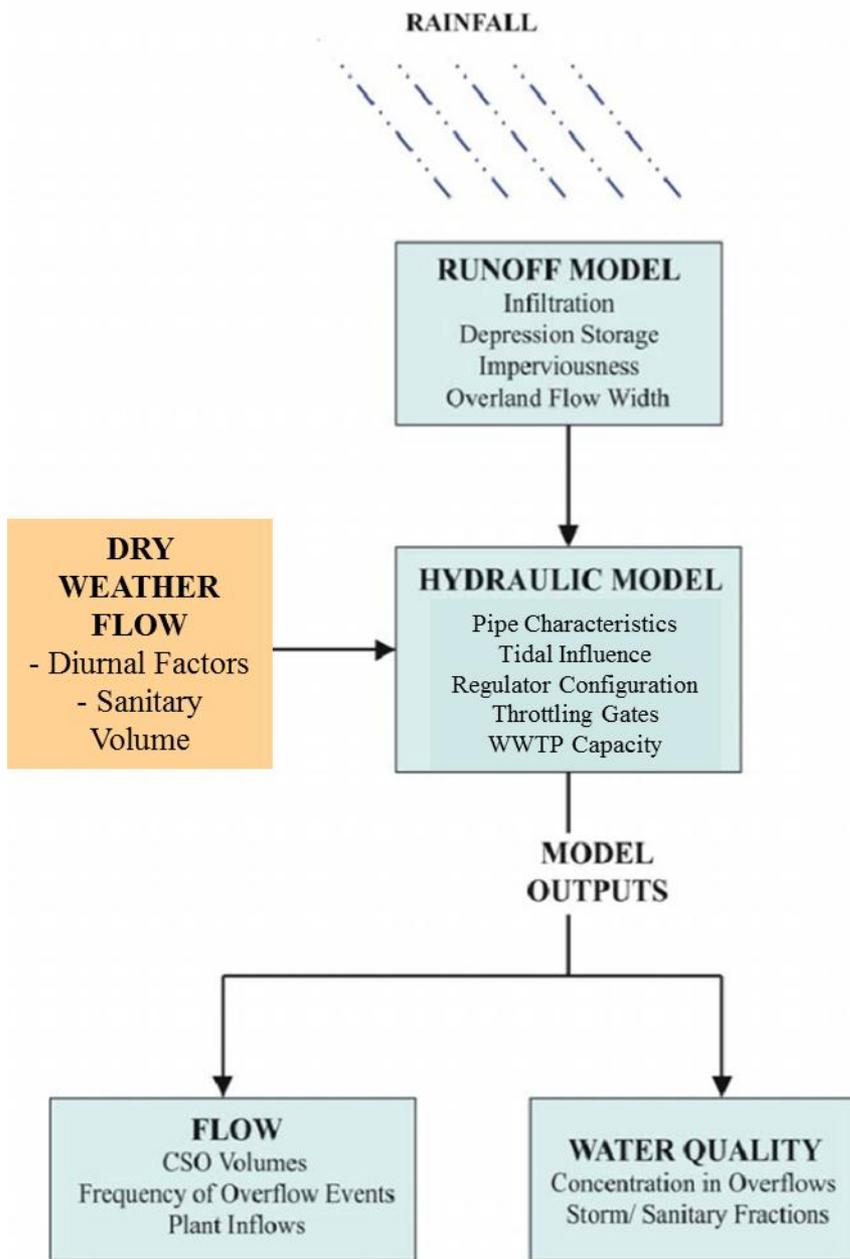
Fecal Coliforms - Geometric Mean (cfu/100ml) ALL

1. GMs include surface and deep samples.
2. GMs include wet & dry weather samples.



Enterococci - Geometric Mean (cfu/100ml) ALLEY CREEK

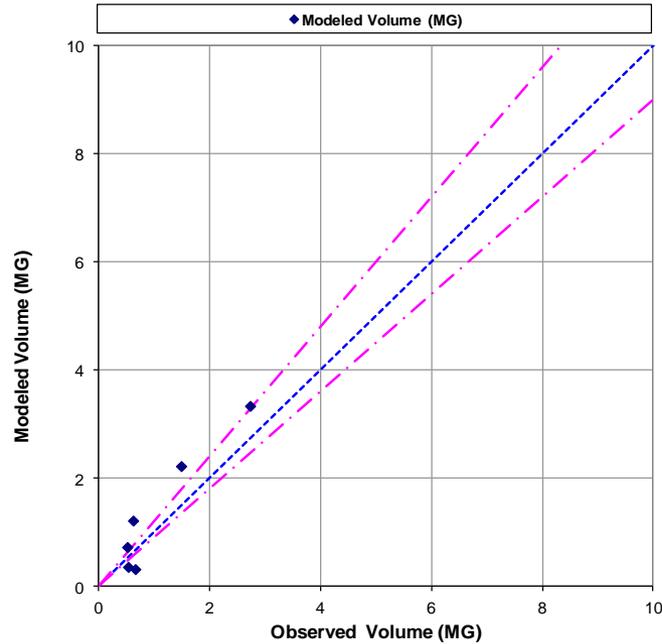
Modeling of Watershed/Waterbody



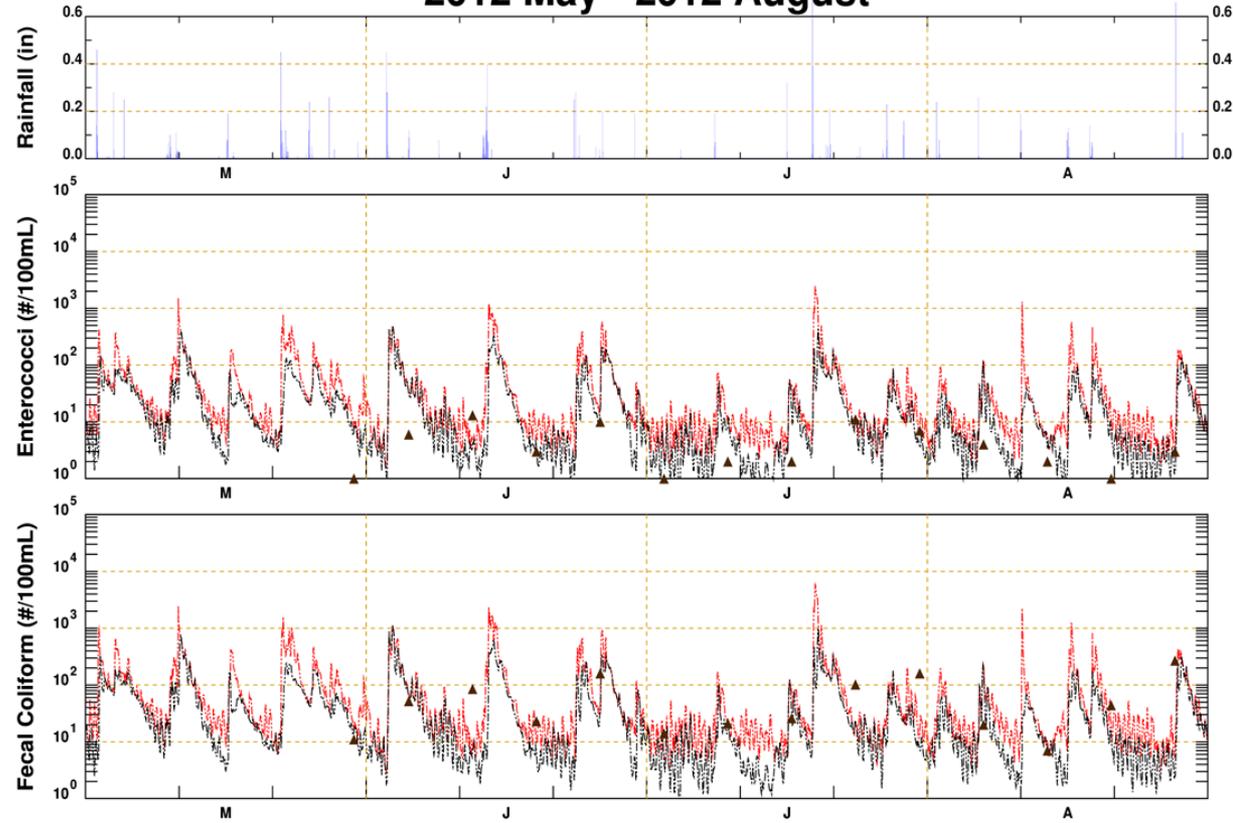
Example Calibration Plots

TI-624 – Storm Sewer

Volume Comparison



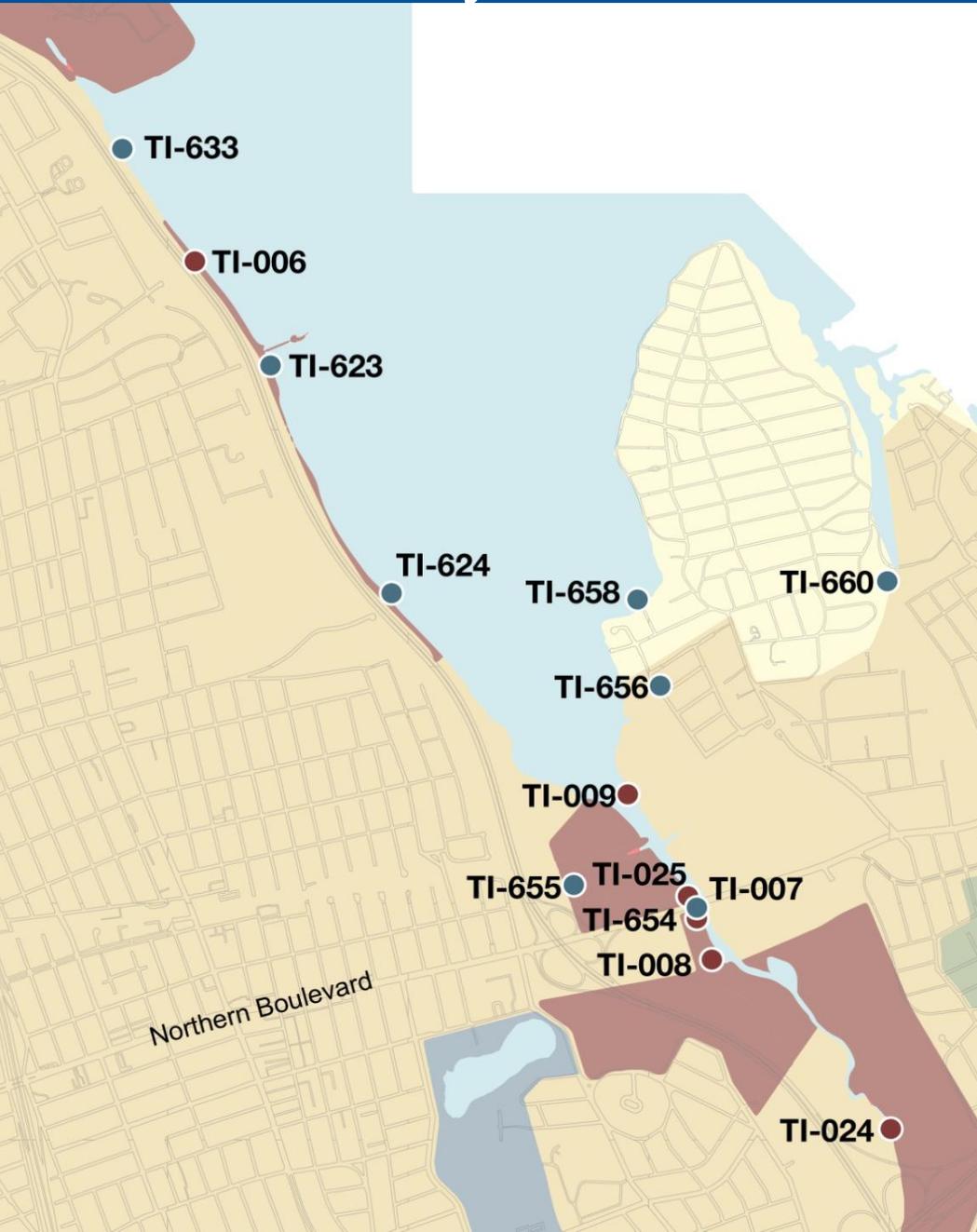
2012 May - 2012 August



2012 Calibration, ERTM
Little Neck LN1

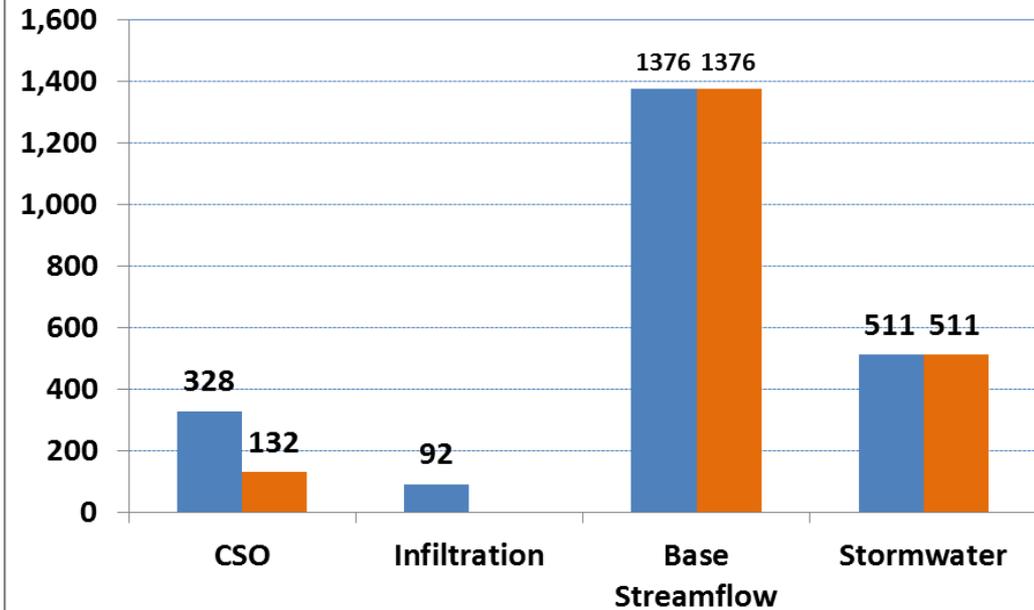
- ▲ ▼ 2012 OW/MST Data
- ▲ ▼ 2012 NYCDEP Harbor Survey Data
- ▲ ▼ 2012 NYCDOH DMA Beach Data
- Surface Layer
- Bottom Layer

Summary of Wet Weather Discharges

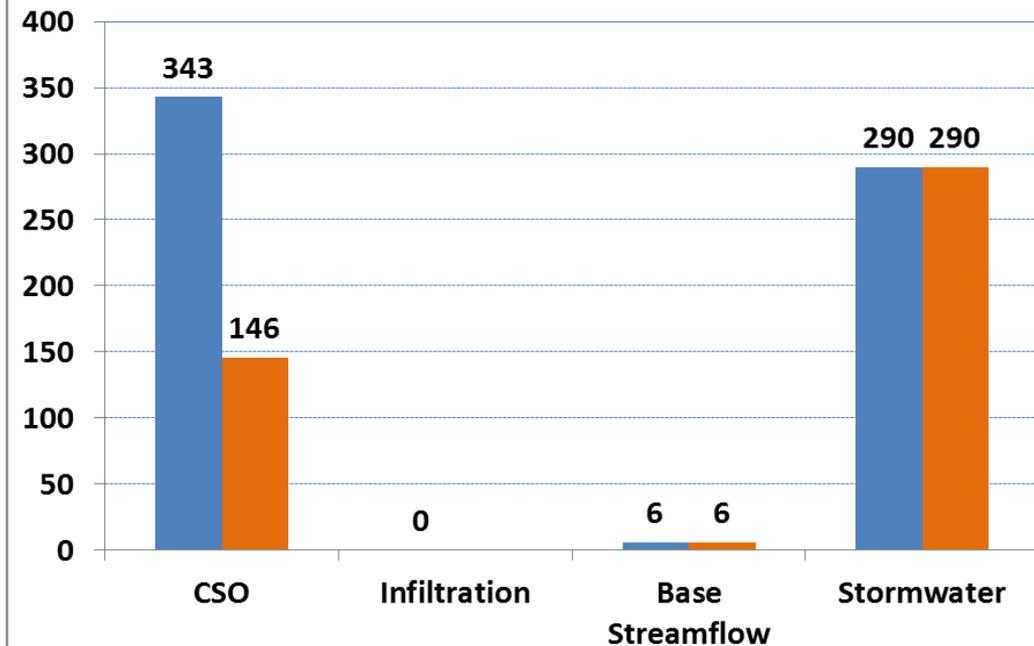


Outfall	Discharge Volume (MG/Yr)	
	CSO	Stormwater
TI-623		2.7
TI-624		114.8
TI-633		33.2
TI-654		59.8
TI-655		52.9
TI-656		12.3
TI-658		43.0
TI-660		51.11
TI-006		174.2
TI-024		122.4
TI-007	0.1	
TI-008	0.0	
TI-009	0.0	
TI-025	132.5	

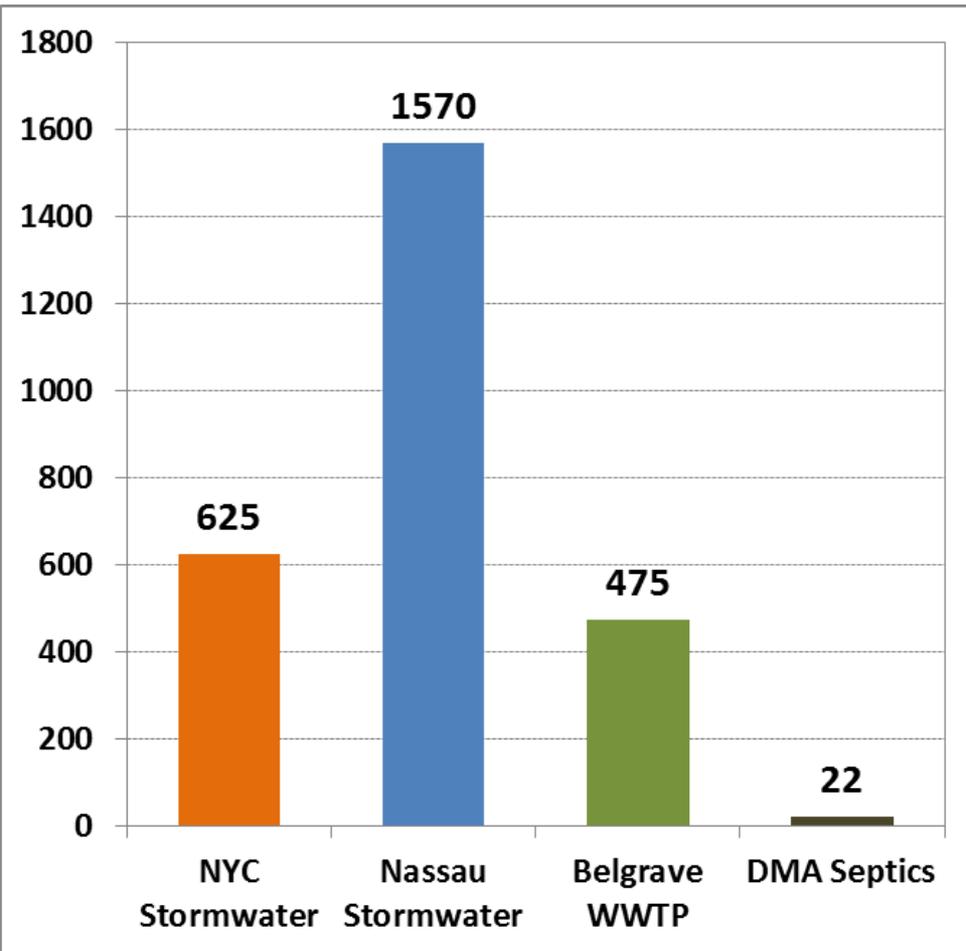
Volumes in MG/Yr



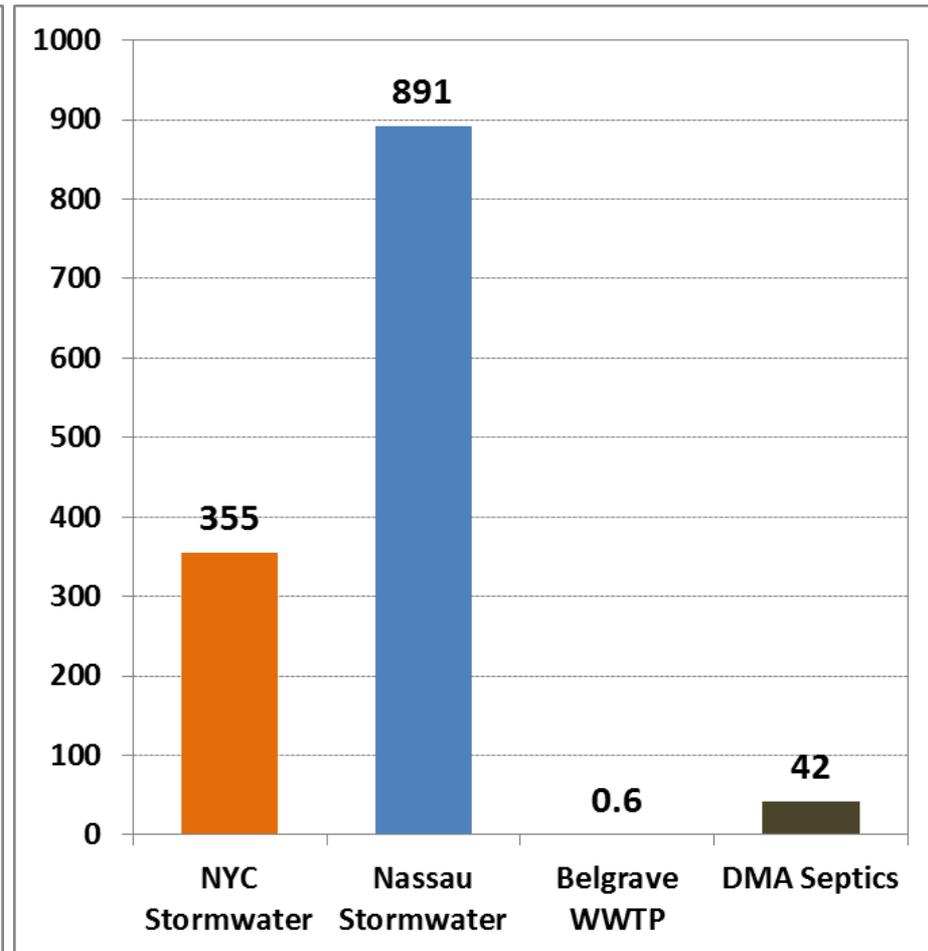
Enterococci Load in Trillion Org/Yr



Volumes in MG/Yr



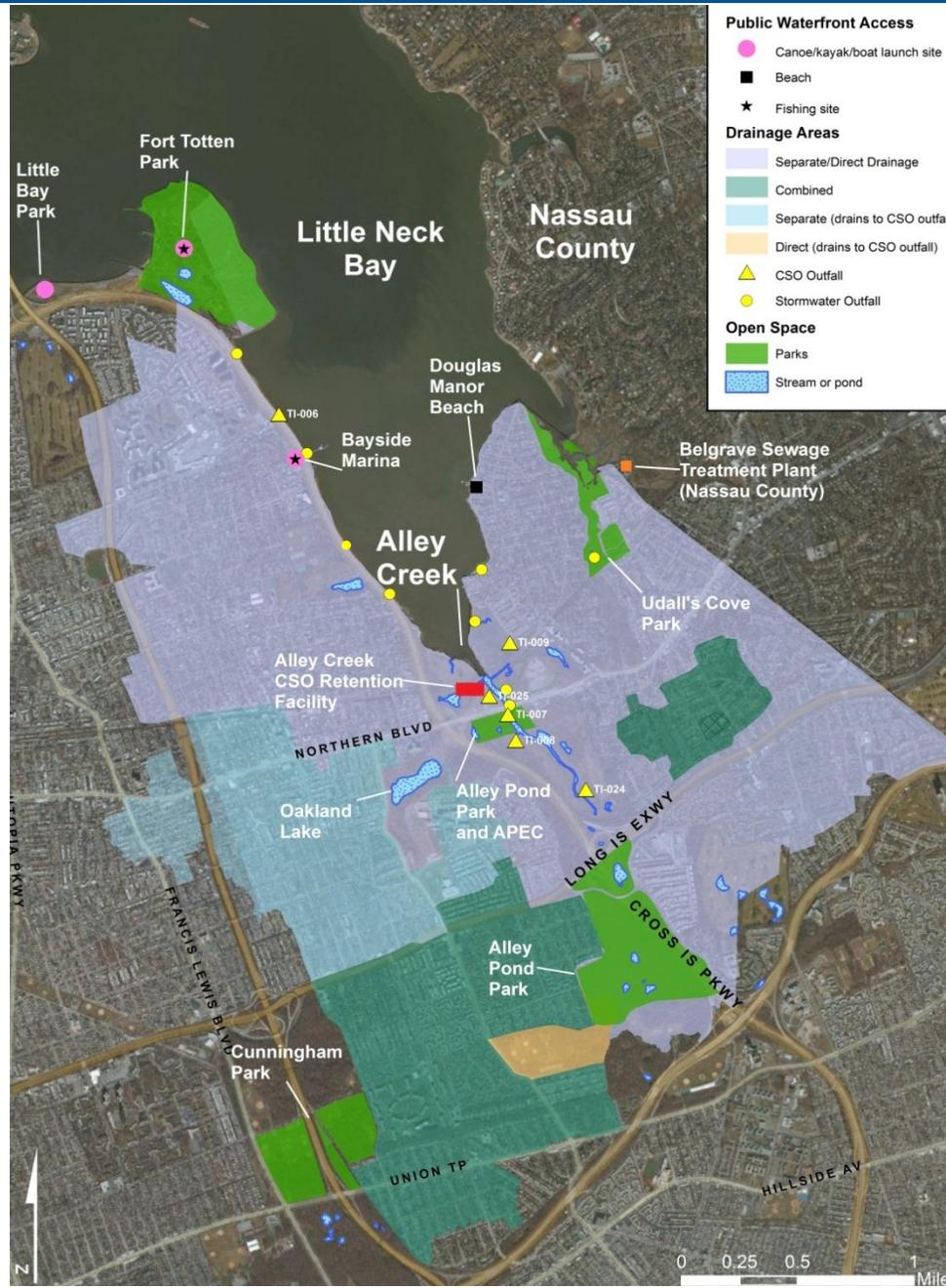
Enterococci Load in Trillion Org/Yr



Open Discussion on Current Recreational Uses in AC/LNB

Srinivasan Rangarajan
DEP

Public Waterfront Access



- ❖ Classified as Class I “secondary contact recreation and fishing”
- ❖ Much of the drainage area is within Alley Pond Park
- ❖ Diverse natural landscape of forests, meadows, and fresh and saltwater wetlands
- ❖ Most common activities:
 - Environmental education
 - Adventure Camps
 - Hiking and biking
 - Occasional Canoeing

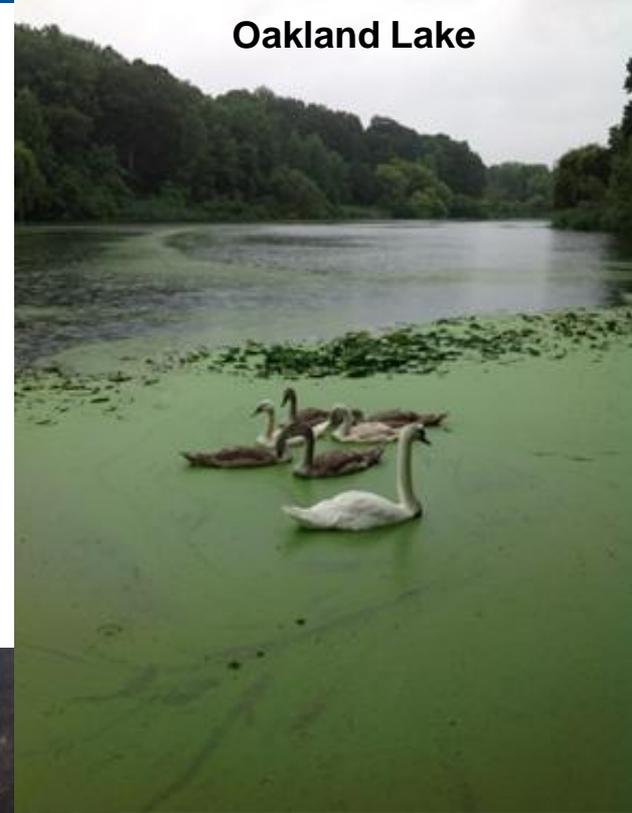


AC Watershed – Natural Features



Wetland Restoration

Pond south of Long Is Expy



Oakland Lake



Alley Creek Waterbody

**High
Tide**



**Low
Tide**



**High
Tide**



**Low
Tide**



- ❖ Classified as Class SB “primary and secondary contact recreation and fishing”
- ❖ Douglas Manor Beach
 - Privately owned- 0.7 miles N of mouth of Alley Creek
 - Monitored by NYC Department of Health and Mental Hygiene
 - Typical monitoring frequency: once a week during open water season



Douglas Manor Association Beach

❖ Bayside Marina

- Canoe/Kayak and Boat Launch Site and Fishing
- Operating season: May 1 to October 31



Bayside Marina

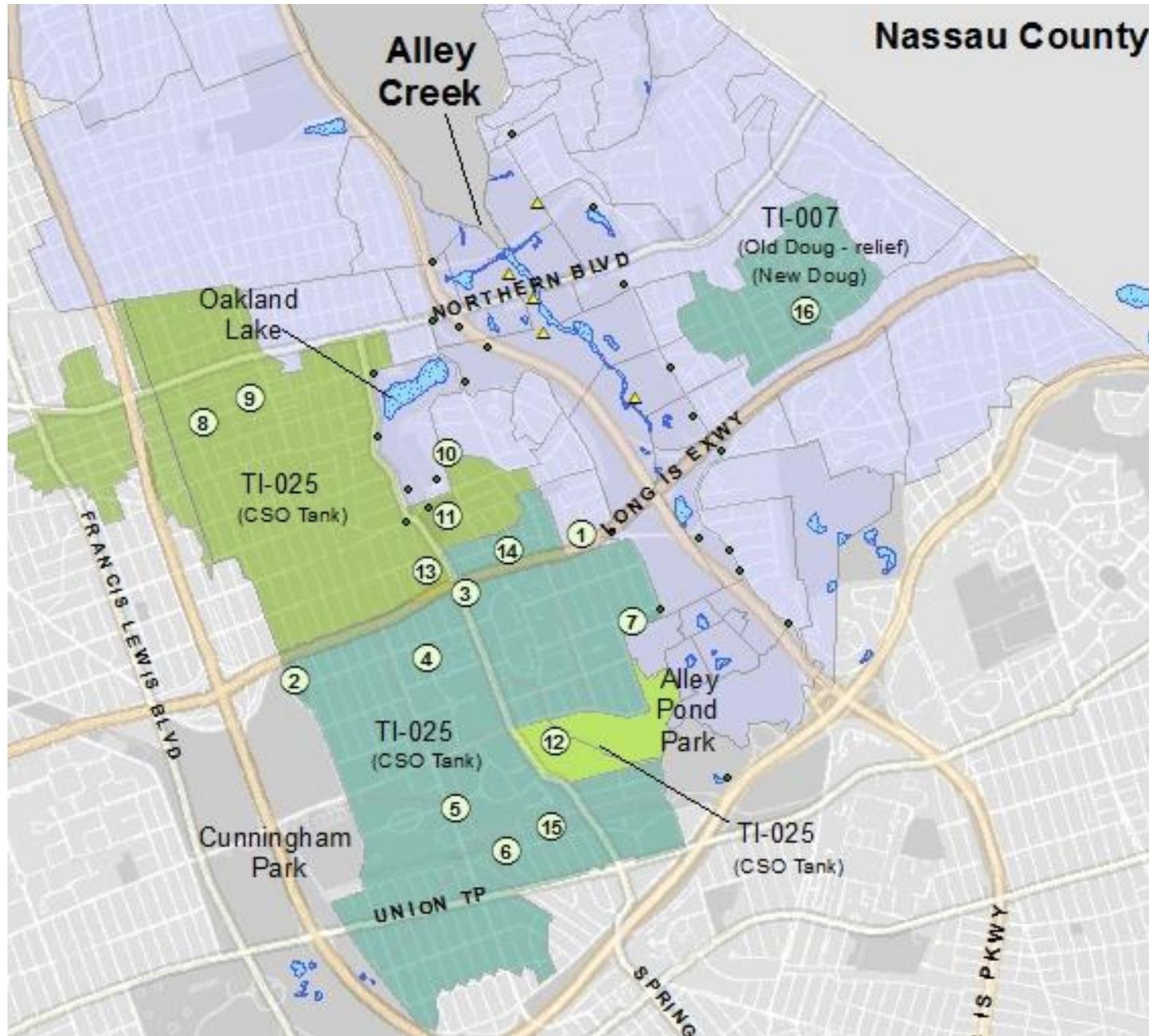
❖ Fort Totten Park

- Civil War Fortress
- Jurisdiction of NYC DPR since 1987



Fort Totten Park

Watershed Planning Support to DPR



Proposed Draft Alternatives for Alley Creek/Little Neck Bay

Keith Mahoney
DEP

- The Alley Creek Waterbody Watershed Facility Plan (WWFP) was submitted by DEP in November 2008 and approved by DEC in June 2009

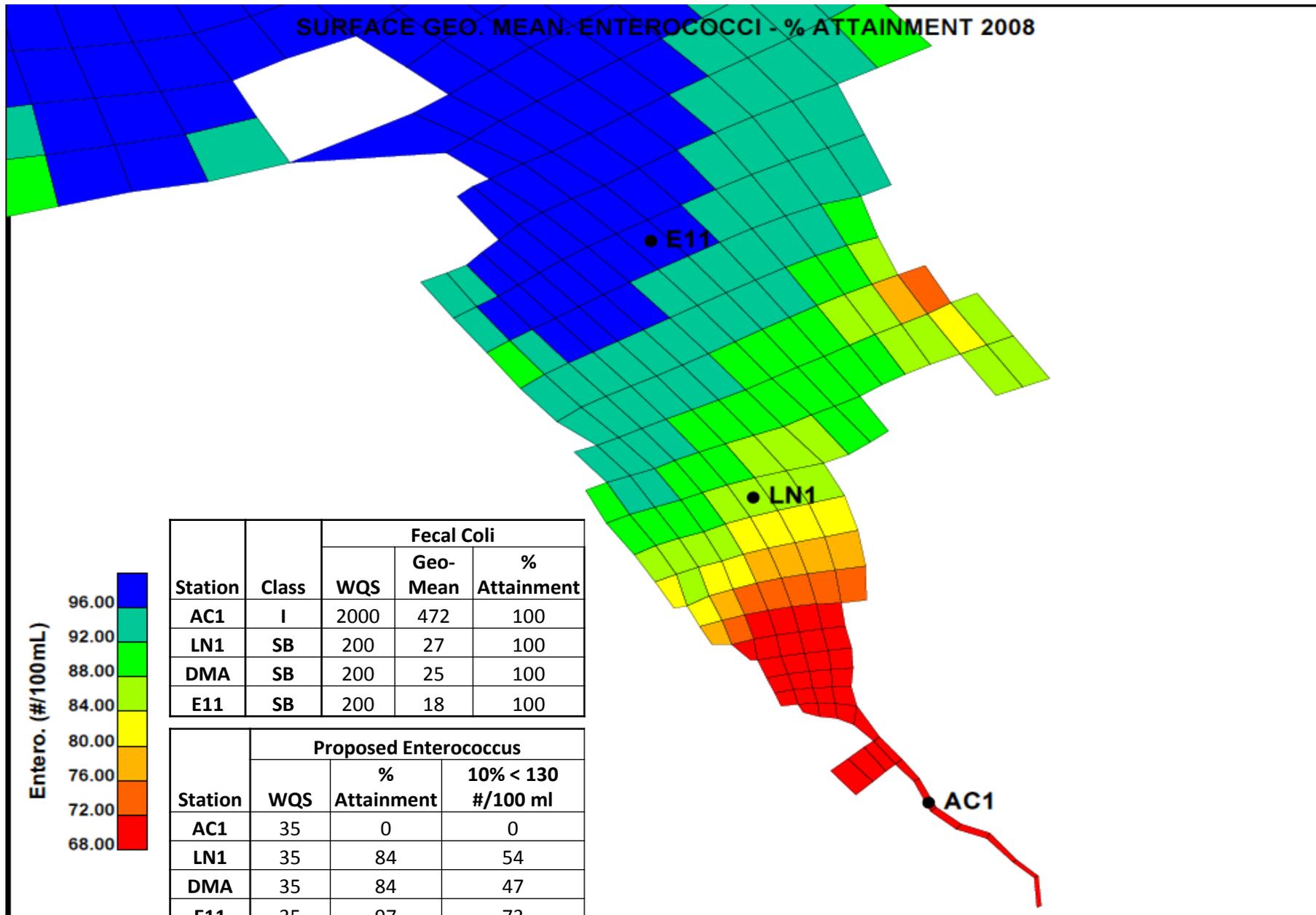
- The WWFP is the foundation for LTCP planning and proposed the following elements:
 1. Sewer construction (including upstream sewers to alleviate flooding and convey flow to new CSO retention facility)
 2. 5 million gallon CSO retention facility
 3. Ecological Restoration

❖ Total Cost = \$130 M



5 MG CSO Retention Facility + 3% GI

SURFACE GEO. MEAN. ENTEROCOCCI - % ATTAINMENT 2008



Entero. (#/100mL)

96.00
92.00
88.00
84.00
80.00
76.00
72.00
68.00

Station	Class	Fecal Coli		
		WQS	Geo-Mean	% Attainment
AC1	I	2000	472	100
LN1	SB	200	27	100
DMA	SB	200	25	100
E11	SB	200	18	100

Station	Proposed Enterococcus		
	WQS	% Attainment	10% < 130 #/100 ml
AC1	35	0	0
LN1	35	84	54
DMA	35	84	47
E11	35	97	73

Typical Control Measures Considered

- ❖ General types of CSO controls will be considered for every LTCP and ranked for the unique conditions and water quality goals of the specific waterbody



Sewer System Modifications



Green Infrastructure



Vertical Storage Shaft



New Sewer Construction /High Level Storm Sewers



Pump Station Expansion



CSO Storage Tank or Tunnel

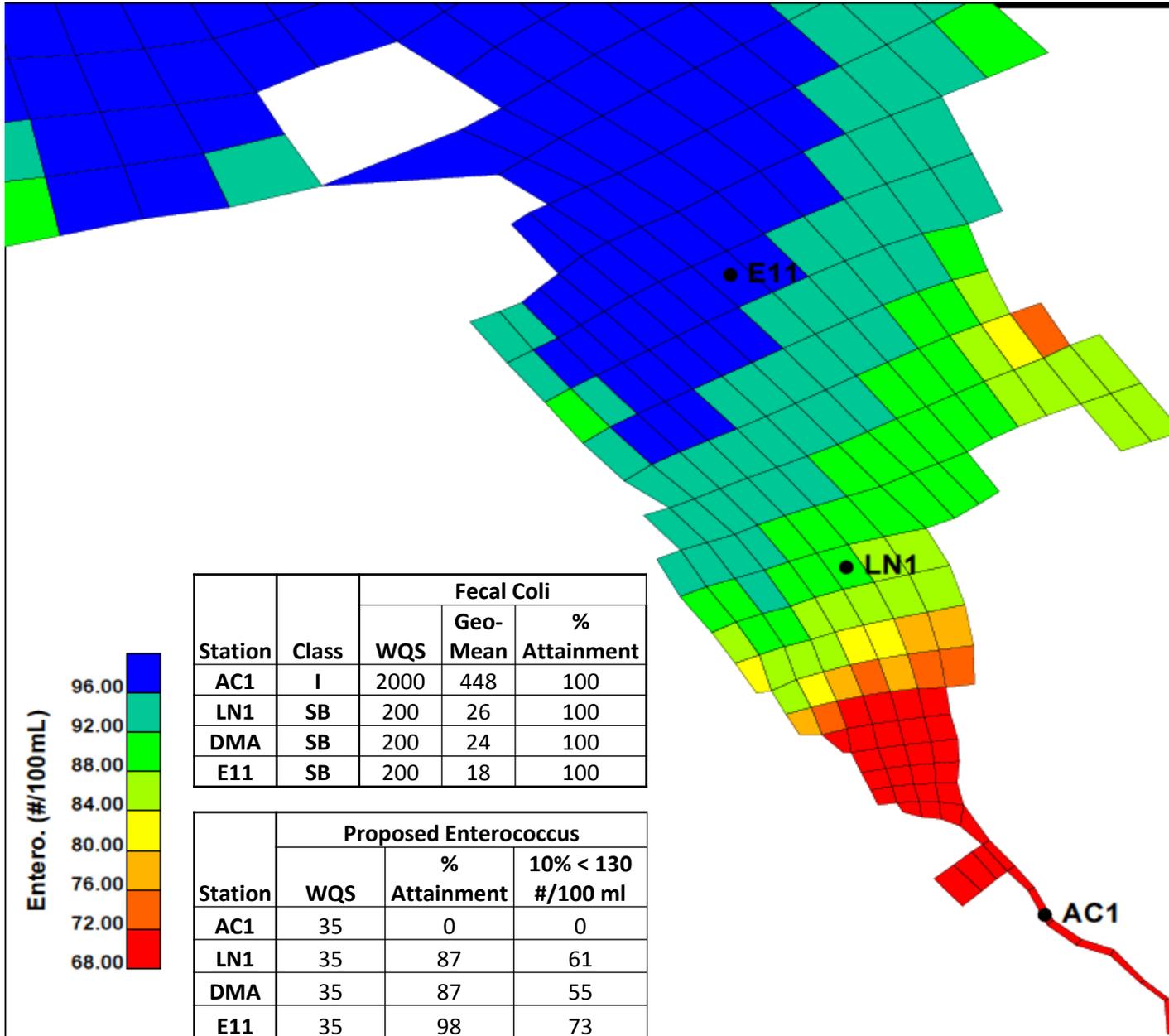
Alt.	Core Control Measure(s)
A	Enlarge Existing CSO Retention Tank
B	Enlarge Existing CSO Retention Tank and High Level Sewer Separation (HLSS)
C	HLSS
D	Vertical Storage Shaft (VTS)
E	VTS and HLSS
F	Green Infrastructure

Cost/Performance Analysis

Alternative	AAOV Reduction (%)
29.5 MG Downstream Tank	100
12 MG Downstream Tank	75
3.0 MG Downstream Tank plus 100% HLSS	71
50% GI	69
100% SW Redirection	52
100% HLSS	51
6.5 MG Downstream Tank	50
6.7 MG Upstream Tank	50
3.0 MG Downstream Tank	25
2.4 MG Upstream Tank	25
10% GI	15
Disinfection in AC Tank	N/A
Baseline Conditions	0

NOTE: AAOV is Average Annual Overflow Volume at the tank outfall, TI-025 and the improvements from each alternative is measured in terms of the percent of AAOV Reduction from the baseline volume of 132.5 MG at TI-025

100% CSO Reduction Scenario



Enteroc. (#/100mL)

96.00
92.00
88.00
84.00
80.00
76.00
72.00
68.00

Station	Class	Fecal Coli		
		WQS	Geo-Mean	% Attainment
AC1	I	2000	448	100
LN1	SB	200	26	100
DMA	SB	200	24	100
E11	SB	200	18	100

Station	WQS	Proposed Enterococcus	
		% Attainment	10% < 130 #/100 ml
AC1	35	0	0
LN1	35	87	61
DMA	35	87	55
E11	35	98	73

Additional 29.5 MG Tank Alternative



Community Impacts



Water Quality Benefits



Ease of Construction



Additional 12 MG Tank Alternative



Community Impacts



Water Quality Benefits



Ease of Construction



6.4 MG Vertical Storage Shaft Alternative



6.4 MG Shaft
125' Dia. x 110' Deep

Existing 60" sewer to
Tallman Island WWT

Regulator 46

Regulator 47

Force main

1210' - 9'-0" x 7'-0"

2,115' - 6'-6" x 7'-0"



Community Impacts



Water Quality Benefits



Ease of Construction



— Proposed — Existing

2.9 MG Tank Expansion Alternative



Community Impacts



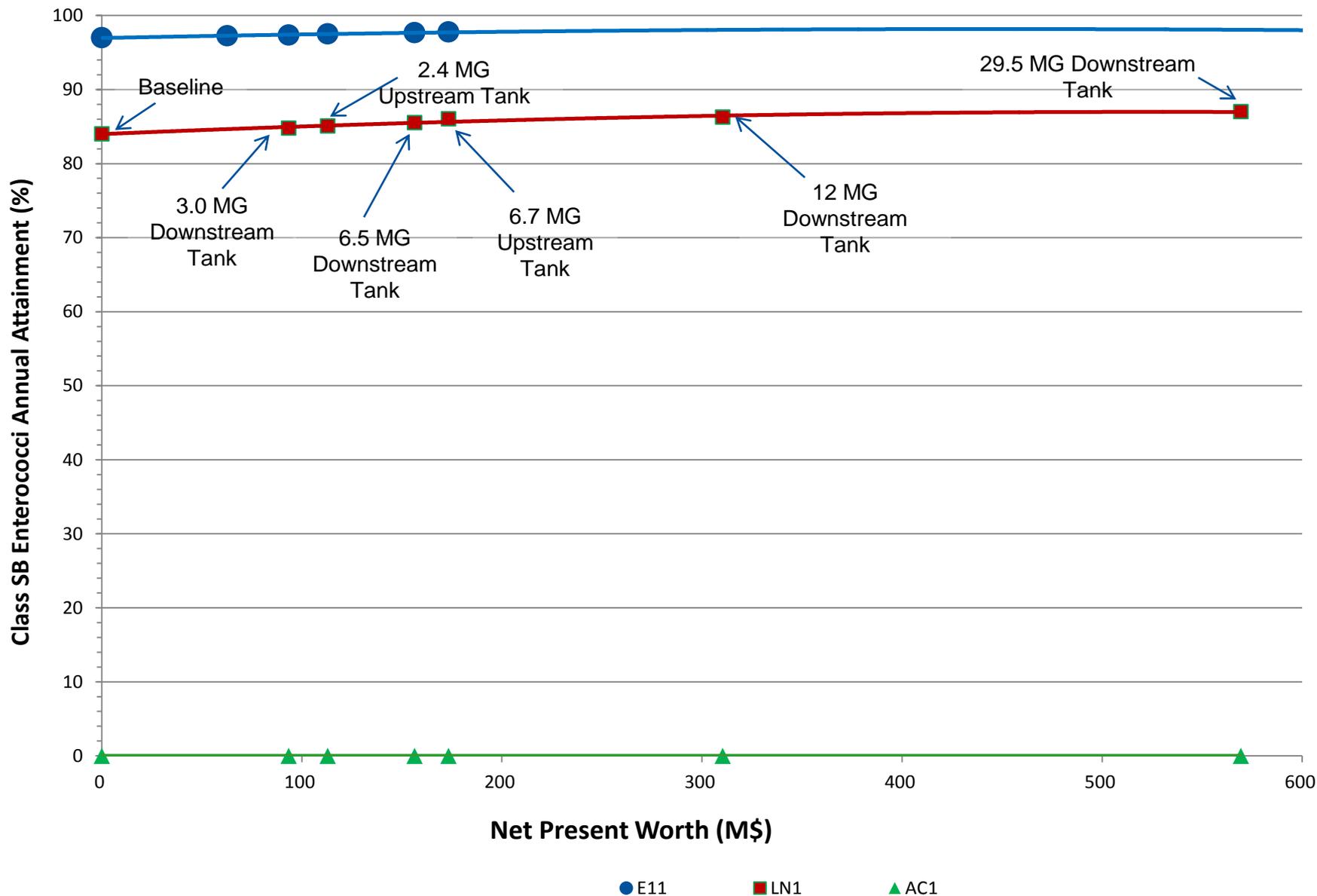
Water Quality Benefits



Ease of Construction



Cost vs. % Attainment for Primary Contact WQS



Next Steps

Keith Mahoney
DEP

Public Participation Schedule

OCTOBER 24, 2012

Kickoff Meeting
Provide overview of LTCP process & schedule, watershed characteristics & improvements, & solicit input on waterbody uses

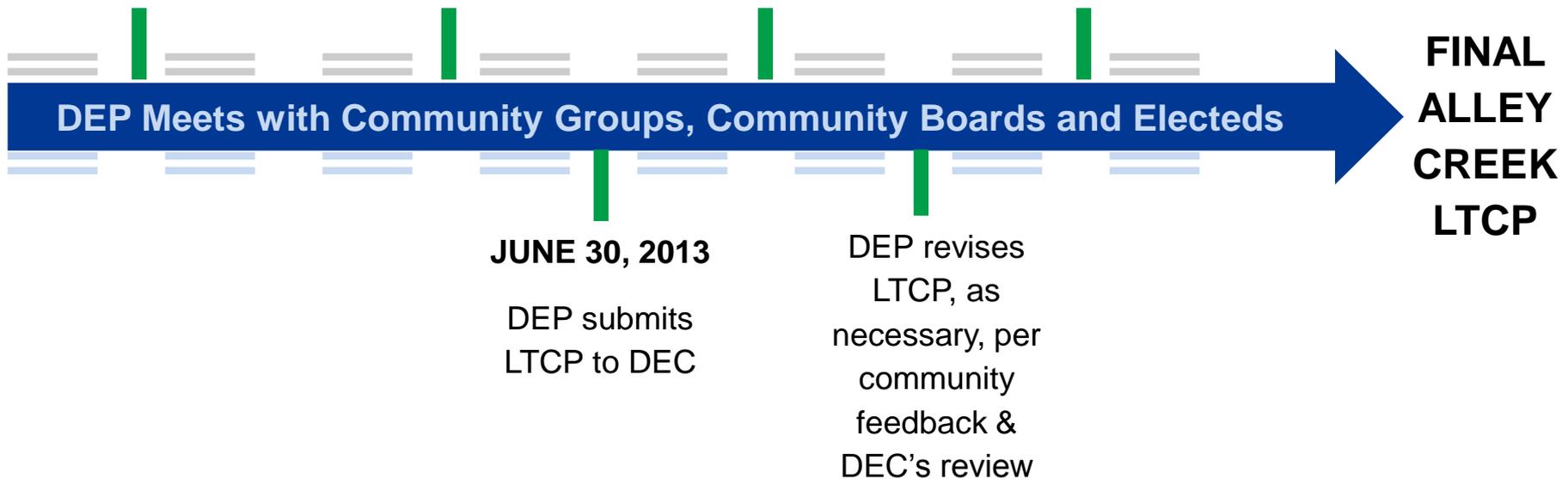
MAY 1, 2013

Public Meeting #2
Review proposed alternatives, related waterbody uses & water quality conditions

FALL 2013

Public Meeting #3
Present & review LTCP

A fourth public meeting may be scheduled dependent upon extent of revisions





- ❖ Alley Creek LTCP Public Meeting #3
 - Fall 2013
 - Objective & Topics: Present and review proposed Draft LTCP

- ❖ Comments can also be submitted to:
 - New York City DEP at: ltcp@dep.nyc.gov



- ❖ Visit the informational tables tonight for handouts and poster boards with detailed information
- ❖ Go to www.nyc.gov/dep/ltcp to access:
 - LTCP Public Participation Plan
 - Presentation, handouts and poster boards from this meeting
 - Links to Waterbody/Watershed Facility Plans
 - CSO Order including LTCP Goal Statement
 - NYC's Green Infrastructure Plan
 - Green Infrastructure Pilots 2011 Monitoring Results
 - Real-time waterbody advisories
 - Upcoming meeting announcements
 - Other LTCP updates

Discussion and Q&A Session