

## **DRAFT - Newport Combined Sewer Overflow (CSO) Stakeholder Workgroup: Meeting #9**

ATTENDEES: See Attachment 1

DATE & PLACE: October 4, 2012; City Hall, Council Chambers

### **Welcome & Introductions**

Julia Forgue introduced the CH2M HILL consultant team members and asked the stakeholders to state their names and organizations.

### **Overview of Agenda**

Julia Forgue provided an overview of the agenda and asked if there were any questions before moving forward. The objective for this meeting is to discuss how comments from the stakeholder group affected the performance, costs, and affordability of the previously selected control scenarios. A summary of the agenda follows:

1. Welcome & Introductions
2. Overview of the Agenda
3. Overview of the CSO Program Schedule
4. Approval of previous meeting's minutes
5. Follow-up on Parking Lot items
6. SMP Control Scenarios
  - a. Scenario descriptions
  - b. Benefits/Costs
  - c. Implementation schedule/affordability

### **Overview of CSO Program Schedule**

Julia Forgue provided an overview of the CSO program goals, the strategy to achieve the goals and the program schedule and review of the Stakeholder Workgroup Mission Statement.

### **Previous Meeting's Minutes**

The minutes of Meetings #8 were approved.

### **Update on Parking Lot from Previous Meeting**

There were 2 items in the parking lot from Meeting #8:

1. A request for more information about I/I reduction programs in other communities.
2. An update on recent CSO performance.

As there was much to cover during this meeting, this information was provided at the end of the slide handouts for stakeholders to review at their convenience.

## Key Meeting Topics

### Benefits and Costs of Control Scenarios

There was a review of the workgroup identified priorities as shown in Figure 1. In addition to these priorities, the stakeholders also identified that a flexible program with a phased implementation approach was a priority for the recommended SMP.

FIGURE 1  
Stakeholder Priority Criteria Ratings



Peter von Zweck provided an overview of the four scenarios selected by the group and EPA for more detailed evaluation. These scenarios were:

- Baseline (BL)
- Elimination (E1) - required by EPA
- Conveyance Upgrades (C1A)
- Storage (S3A)

Details about each of the scenarios was provided on a set of updated fact sheets that were distributed at the meeting and are included here as Attachment 2.

In addition to the components making up each of the scenarios, the results of the hydraulic evaluations for and the program costs for each scenario were presented and are shown in Figures 2-4.

FIGURE 2  
Summary of Discharge Volumes for Design Events

Scenario	2-Year Storm (MG)		5-Year Storm (MG)		10-Year Storm (MG)	
	Wellington	Washington	Wellington	Washington	Wellington	Washington
EC	1.24	4.22	1.83	5.87	2.72	7.53
BL	1.09	2.75	1.78	3.63	2.65	5.7
E1	0	0	0	0	0	0
C1A	0	0	0	0	0	0.19
S3A	0	0	0	0	0	0

FIGURE 3  
Summary of Performance for Average Annual Conditions

Scenario	Annual Volume (MG)		Annual Events	
	Wellington	Washington	Wellington	Washington
EC	11.03	43.01	12	18
BL	10.6	19	12	10
E1	0	0	0	0
C1A	0	0	0	0
S3A	0	0	0	0

FIGURE 4  
Summary of Program Costs

Scenario	Capital Cost	O&M Cost (per year)	Equivalent Annual Cost	Cost Per Gallon Removed	Cost Per Event Eliminated
BL	\$31,487,000	(\$8,000)	\$1,029,000	N/A	N/A
E1	\$202,312,000	\$447,000	\$7,692,000	\$0.26	\$350,000
C1A	\$91,666,000	\$2,000	\$3,251,000	\$0.11	\$148,000
S3A	\$114,780,000	\$531,000	\$4,520,000	\$0.15	\$206,000

### Questions and Answers

Q: Is the E1 scenario effectively complete separation.

A: Yes.

Q: Is 100% inflow removal achievable?

A: Not based on previous evaluations.

Q: For C1A will the homeowner need to invest in the improvements for their property?

A: Yes, if the program is set up for the homeowner to be responsible for the inflow disconnections.

Q: What will happen in the area that flood during wet weather with all of the additional inflow disconnections?

A: Those areas will need to be studied to determine if upgraded storm drainage systems are needed.

Q: Could loans be offered to homeowners to help pay for the cost of disconnections?

A: Yes, if that is a policy decision made by the City.

Q: Do the program costs include some cost to continually inspect disconnections to ensure that they remain disconnected?

A: Yes, the program costs do include some cost for oversight of the I/I disconnection program.

### Review and Update on Affordability Threshold

Becky Weig presented an update on the affordability threshold analysis that had been previously presented in November 2011. The results are shown in Figure 5. Also presented were the key assumptions about the rate threshold which included capping the rates at 1.95% of median household income (MHI) to allow room for emergencies and to phase in rates from the current rate of 1.27% of MHI to 1.95% of MHI rather than have one or two large increases.

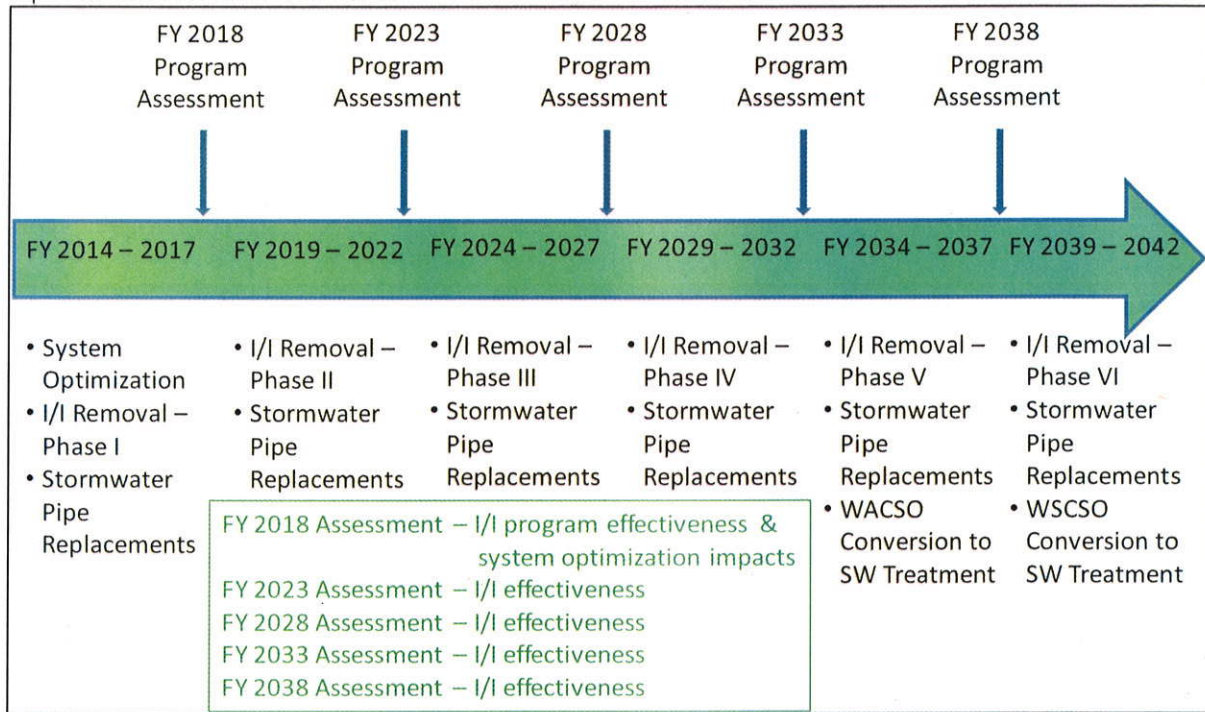
**FIGURE 5**  
Updated Affordability Threshold Analysis

Parameter	Preliminary Value (November 2011)	Updated Value (October 2012)
Median Household Income (MHI)	\$55,916	\$55,916
CPI	216.687	230.379
Adjustment Factor		1.031
Adjusted MHI		\$57,656
2% of Adjusted MHI	\$1,118	\$1,153
Average User Annual Sewer Charge	\$676	\$541
CSO Fixed Fee	\$192	\$192
Total Sewer Bill for Typical Residential Customer	\$868	\$733
Remainder Available Within "Affordability Threshold"	\$250	\$420

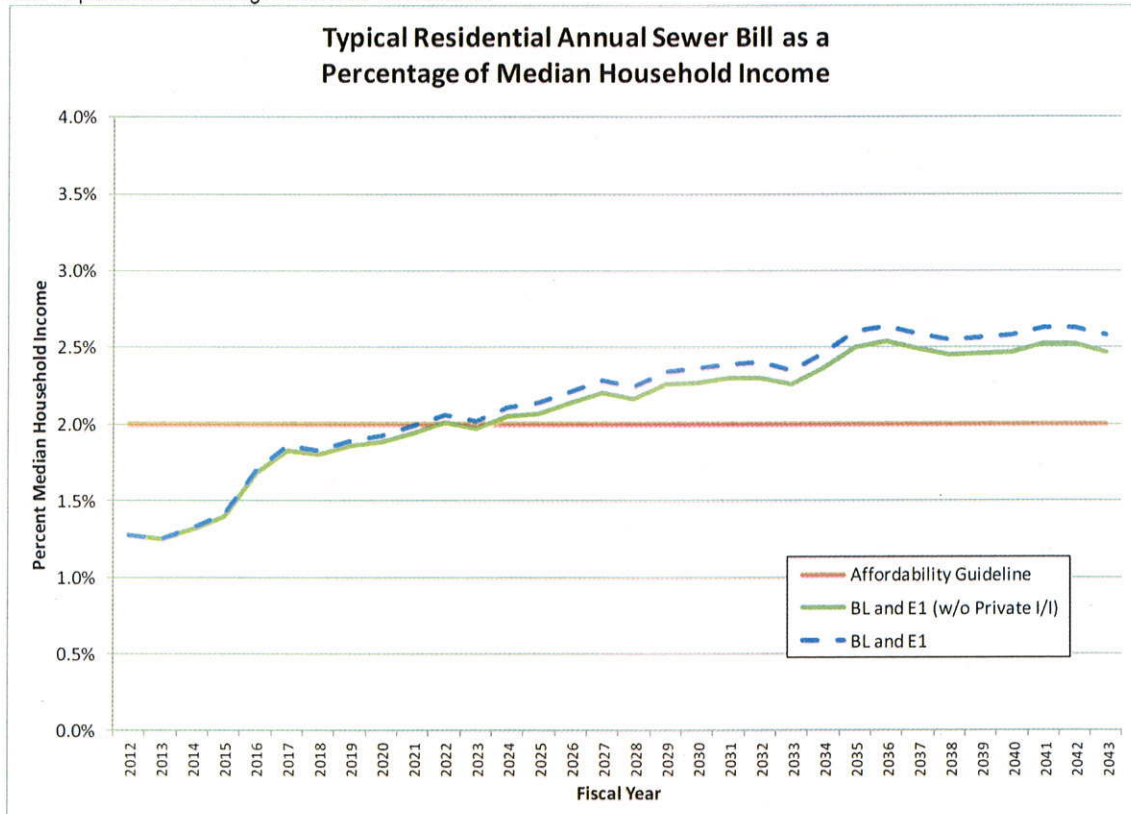
### Implementation Schedules and Affordability

Becky Weig presented the proposed implementation schedules and impact on rates as a percentage of MHI for each of three scenarios: E1, C1A, and S3A. The results are shown in Figures 6 - 11.

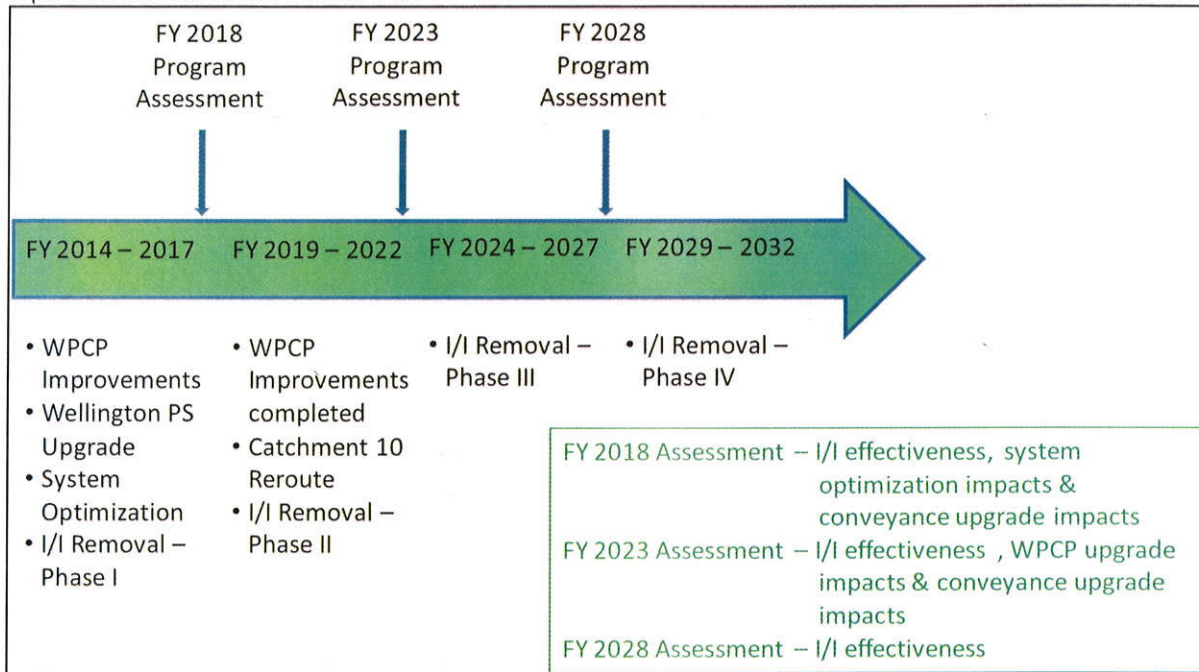
**FIGURE 6**  
Implementation Schedule for Scenario E1



**FIGURE 7**  
Rate Impacts as Percentage of MHI for Scenario E1



**FIGURE 8**  
Implementation Schedule for Scenario C1A



**FIGURE 9**  
Rate Impacts as Percentage of MHI for Scenario C1A

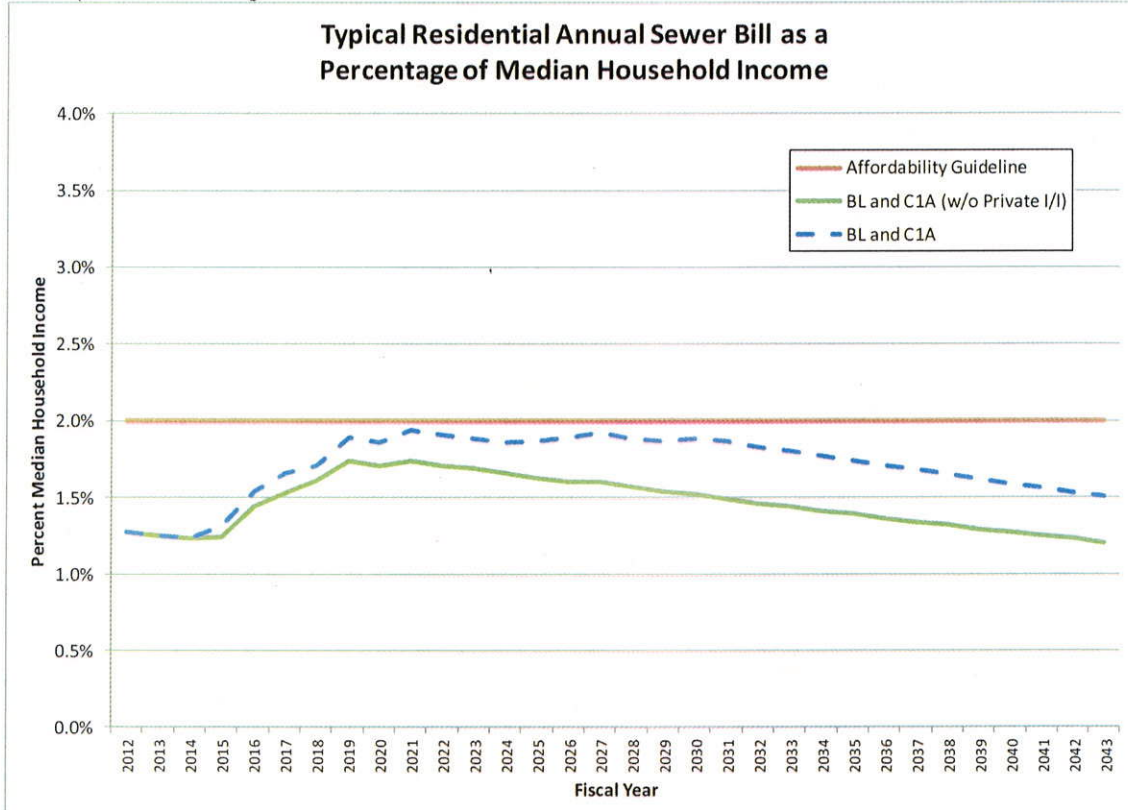


FIGURE 10  
Implementation Schedule for Scenario S3A

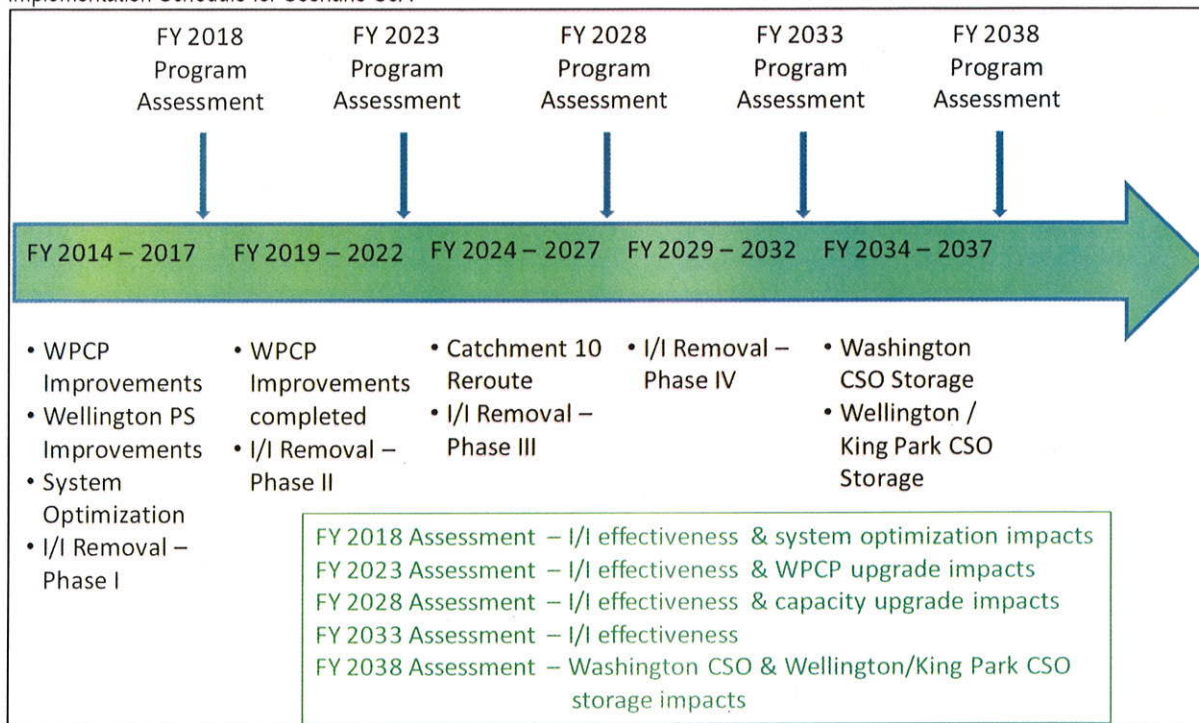
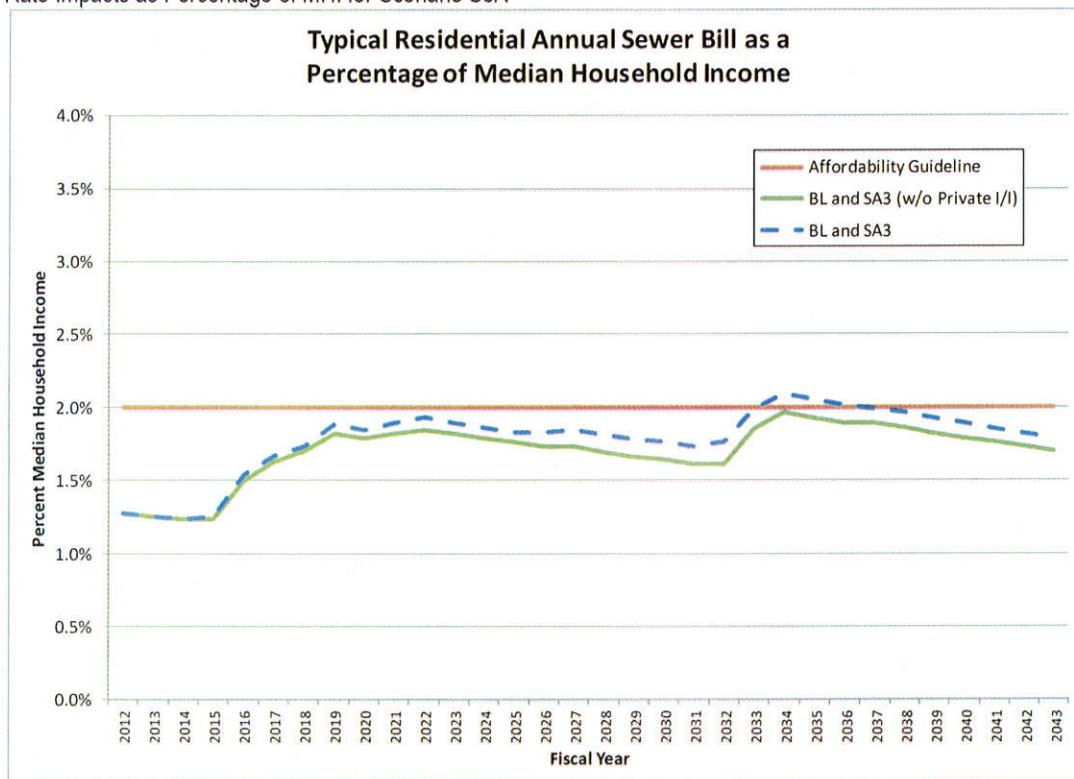


FIGURE 11  
Rate Impacts as Percentage of MHI for Scenario S3A





## Questions and Answers

Q: For Scenario S3A, why is it proposed to build the storage tanks so far out in the implementation schedule?

A: In order to maintain affordability, the storage tanks could not be built any sooner unless the WPCP upgrade was delayed, and since that provides more benefit to CSO reduction it was determined that the WPCP upgrade projects should be completed as early in the implementation schedule as affordable.

## SMP Scenario Selection

Peter von Zweck presented that based upon the CSO Program goals and the strategy to achieve the goals defined at the beginning of the project, that the C1A Scenario was the recommended SMP scenario because:

- It best achieves the goals of the CSO Program,
- It best achieves the goals of the Stakeholder Workgroup, and
- It best achieves the goals of EPA.

## Questions and Answers

Q: Is this proposed program sellable to City Council?

A: Yes, but it would be helpful if Stakeholder Workgroup participants would attend an upcoming City Council briefing to show their support based upon the public involvement process.

## Parking Lot

- There was a request for an additional meeting to discuss funding options for the SMP.

# Attachment 1

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# CSO Stakeholder Workgroup Meeting #9

## Attendees

MEETING DATE:	Thursday October 4, 2012 @ 3:00 PM	
LOCATION:	City Hall Council Chambers - Newport, RI	
Name	Affiliation	In Attendance
<b>Workgroup Members</b>		
Justin McLaughlin	City Council	
Ray Smedberg	Ad Hoc Committee	<i>RS</i>
David McLaughlin (Alternate)	Ad Hoc Committee	
John McCain	ALN	<i>JM</i>
Roger Wells (Alternate)	ALN	
Tina Dolen	Aquidneck Island Planning Commission	<i>T Dolen</i>
<del>Chris Witt</del> (Alternate)	Aquidneck Island Planning Commission	<i>CC</i>
Charles Wright	Beach Commission	
Kathleen Shinnors (Alternate)	Beach Commission	
Bill Riccio	Dept. Public Services	
Eric Earls (Alternate)	Dept. Public Services	
Paige Bronk	Dept. Planning	
Bill Hanley (Alternate)	Dept. Planning	
Tim Mills	Harbor Master	
Mary E. Dever-Putnam	EPA	
James Carlson	NSN	
William Monaco (Alternate)	NSN	
Jody Sullivan	Newport County Chamber	
Ed Lopes (Alternate)	Newport County Chamber	
Evan Smith	NCCVB	
Cathy Morrison (Alternate)	NCCVB	
Shawn Brown	Middletown	
Tom O'Loughlin (Alternate)	Middletown	
<del>Eric Beck</del> <sup>Joe Habrick</sup>	RIDEM	<i>JHB</i>
Angelo Liberti (Alternate)	RIDEM	
Jim Brunnhoeffler	RWU	<i>CB</i>
B. Gokhan Celik (Alternate)	RWU	

*Jared Weaver*

MEETING DATE:	Thursday October 4, 2012 @ 3:00 PM	
LOCATION:	City Hall Council Chambers - Newport, RI	
Name	Affiliation	In Attendance
<del>John Torgan</del>	Save the Bay	DRP
Wendy Waller (Alternate)	Save the Bay	
Tom Cornell	Resident	
Stuart K. Mills, Jr.	Resident	
Roger Slocum	Resident	RS HTW
Ted Wrobel	Resident	
Other Attendees		
Julia Forgue	City of Newport	
Ken Mason	City of Newport	
Mike Domenica	CH2M HILL	
Peter von Zweck	CH2M HILL	
Becky Weig	CH2M HILL	Becky
Jim Lauzon	United Water	

DAVID PRESENT

## Attachment 2

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Updated fact sheets distributed at the meeting.

## City of Newport CSO Program Summary of System Master Plan Scenarios

Scenario Code	Scenario Title	Project Locations
BL	Baseline	
<p><b>Description of Objectives and Control Logic</b></p> <p>The Baseline scenario includes projects that have been identified in the City's existing CIP and other projects recommended to maintain or improve the levels of service provided by the current sanitary/combined sewer system. It provides a benchmark for comparison of all other improvement scenarios. Correspondingly all components of the baseline are included in all system improvement scenarios. Its components include a variety of infrastructure replacement, inflow reduction, conveyance, and wastewater treatment projects.</p>		

### Components and Costs<sup>1</sup>

Project Code	Name/Brief Description	Total Capital Cost	Change in Annual O&M Cost	Equivalent Annual Cost
<b>City of Newport CIP Projects FY2013-2017</b>				
	Bridge Street Tide Gates	\$ 85,000	\$ -	\$ 3,000
	Almy Pond - TMDL	\$ 170,000	\$ -	\$ 9,000
	Sanitary Sewer Improvements	\$ 11,000,000	\$ -	\$ 299,000
II-1	Catch Basin Disconnections	\$ 2,000,000	\$ (8,000)	\$ (0)
	Beach PS Improvements	\$ 305,000	\$ -	\$ 11,000
	Audit - UW Service Agreement	\$ 100,000	\$ -	\$ 5,000
	CSO Program Management	\$ 1,000,000	\$ -	\$ 51,000
WPCP-1.1	Headworks and Disinfection Improvements	\$ 2,250,000	\$ -	\$ 89,000
WPCP-1.1	Final Clarifier Improvements	\$ 1,500,000	\$ -	\$ 54,000
	<b>Subtotal</b>	<b>\$ 18,410,000</b>	<b>\$ (8,000)</b>	<b>\$ 521,000</b>
<b>Recommended Projects FY2018 - ?</b>				
WPCP-1.1	WPCP Improvements (Headworks, Disinfection and Solids Handling)	\$ 9,985,000	\$ -	\$ 395,000
	Wellington Pump Station Improvements	\$ 2,886,000	\$ -	\$ 104,000
	Ruggles Pump Station Improvements	\$ 206,000	\$ -	\$ 7,000
	<b>Subtotal:</b>	<b>\$ 13,077,000</b>	<b>\$ -</b>	<b>\$ 507,000</b>
	<b>Scenario Totals:</b>	<b>\$ 31,487,000</b>	<b>\$ (8,000)</b>	<b>\$ 1,029,000</b>

### Narrative Summary of System Benefits

- ✓ Replacement of infrastructure that has reached the end of its useful life
- ✓ Inflow reduction at manholes and catch basins connected to the sanitary/combined sewer system
- ✓ Conveyance improvements to eliminate known bottlenecks
- ✓ Improvements to the WPCP's headworks, solids processing and disinfection facilities to improve its effective treatment capacity

### Characteristics of CSO Discharges<sup>1</sup>

Discharge (MG)	Wellington	Washington
2-year Storm	1.09	2.75
5-year Storm	1.78	3.63
10-year Storm	2.65	5.7
Annual Events	12	20
Cost per gallon CSO removed <sup>2</sup>		N/A
Cost per event eliminated <sup>2</sup>		N/A

### Water Quality Benefits

- ✓ Provides a baseline for the comparison of alternatives. Does not significantly improve the volume, frequency, or quality of discharges from the CSO treatment facilities.

<sup>1</sup> Data provided on costs and CSO volumes are planning level estimates and subject to change as scenarios are revised.

<sup>2</sup> Based on Equivalent Annual Costs and model results from a typical year simulation.

## City of Newport CSO Program Summary of System Master Plan Scenarios

<b>Scenario Code</b> E1	<b>Scenario Title</b> Elimination	<b>Project Locations (Baseline projects not shown)</b>
<p><b>Description of Objectives and Control Logic</b></p> <p>The Elimination scenario is designed to eliminate CSOs through a combination of private and public inflow reduction and a limited number of conveyance improvements. This scenario includes removal of inflow from all directly connected public and private infrastructure in Newport, Middletown and the Naval Station Newport (NSN). Private sources to be removed include: roof leaders, sump pumps, driveway drains, foundation drains, area drains, stairwell drains, window well drains and uncapped cleanouts. Public sources to be removed include: catch basins, vented manholes, cover to rim defects, indirect storm connections. The conveyance improvements in this scenario include: increasing weir heights at 6 existing structures, and increased pumping from the Long Wharf and Wellington stations (running standby pumps).</p>		

**Components and Costs<sup>1,2,3</sup>**

Project Code	Name/Brief Description	Total Capital Cost	Change in Annual O&M Cost	Equivalent Annual Cost
BL	Baseline (includes all Baseline projects)	\$ 31,487,000	\$ (8,000)	\$ 1,029,000
SO-3	Weirs	\$ 189,000	\$ -	\$ 6,000
SO-2	Increased Pumping Capacity/Better Use of System Capacity	\$ -	\$ 22,000	\$ 22,000
II-4	Downspout Disconnection	\$ 13,630,000	\$ (27,000)	\$ 472,000
II-5	Inflow Reduction - Private Sources (Not Including Downspouts)	\$ 59,145,000	\$ (63,000)	\$ 2,102,000
II-6	Inflow Reduction - Public Sources	\$ 2,176,000	\$ (3,000)	\$ 77,000
SW-1	Stormwater Treatment - WSCSO Facility	\$ 3,408,000	\$ 98,000	\$ 221,000
SW-2	Stormwater Treatment - WACSO Facility	\$ 16,554,000	\$ 428,000	\$ 1,026,000
CU-6	Stormwater Pipe Replacement	\$ 75,725,000	\$ -	\$ 2,737,000
II-8	Inflow Removal for Middletown			
II-9	Inflow Removal for the Naval Station Newport			
<b>Scenario Totals:</b>		<b>\$ 202,312,000</b>	<b>\$ 447,000</b>	<b>\$ 7,692,000</b>

<sup>2</sup> Downspout disconnection costs are not included in the affordability calculations.

<sup>3</sup> Naval Station Newport and Middletown costs not included. Costs will not be covered by the City of Newport.

**Narrative Summary of System Benefits**

- ✓ Removal of all private and public sources of inflow in the City of Newport, Middletown, and the Naval Station Newport
- ✓ Conveyance improvements to transport larger volumes of flow from Wellington and Long Wharf PS to the WPCP
- ✓ Improvements to storm drainage system, including stormwater treatment

**Characteristics of CSO Discharges<sup>1</sup>**

Discharge (MG)	Wellington	Washington
2-year Storm	0	0
5-year Storm	0	0
10-year Storm	0	0
Annual Events	0	0
Cost per gallon CSO removed <sup>4</sup>		\$0.26
Cost per event eliminated <sup>4</sup>		\$350,000

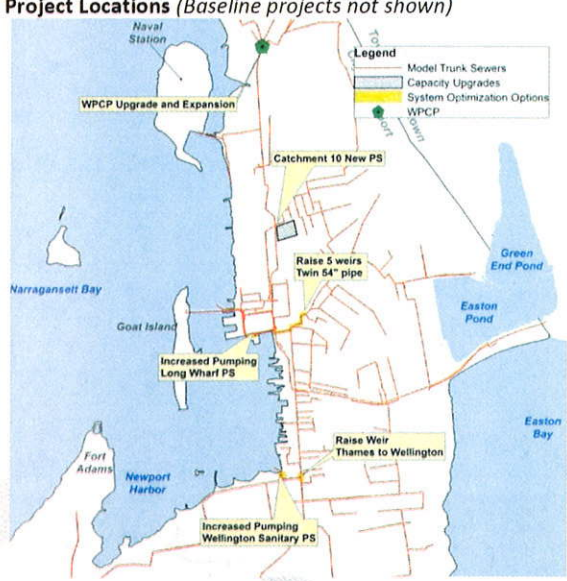
**Water Quality Benefits**

- ✓ Elimination of CSOs for up to a 10-year level of control
- ✓ Reduction of stormwater pollutants into Newport Harbor as a result of stormwater treatment

<sup>1</sup> Data provided on costs and CSO volumes are planning level estimates and subject to change as scenarios are revised.

<sup>4</sup> Based on Equivalent Annual Costs and model results from a typical year simulation.

## City of Newport CSO Program Summary of System Master Plan Scenarios

<b>Scenario Code</b> C1A	<b>Scenario Title</b> Conveyance 1A	<b>Project Locations (Baseline projects not shown)</b> 
<b>Description of Objectives and Control Logic</b> The Conveyance 1A scenario includes projects designed to reduce the volume and frequency of discharges from the CSO treatment facilities through use of a combination of inflow reduction, conveyance, and wastewater treatment projects. The volumes of discharges from the Wellington and Washington facilities are reduced through the disconnection of downspouts, disconnection of other private inflow sources. Conveyance and treatment improvements include two new pump stations and wet weather capacity improvements at the WPCP.		

### Components and Costs<sup>1,2</sup>

Project Code	Name/Brief Description	Total Capital Cost	Change in Annual O&M Cost	Equivalent Annual Cost
BL	Baseline (includes all Baseline projects)	\$ 31,487,000	\$ (8,000)	\$ 1,029,000
WPCP-1.2	WPCP Upgrade & Expansion, Option 2 (primary clarifiers)	\$ 6,130,000	\$ -	\$ 243,000
WPCP-1.3	WPCP Upgrade & Expansion, Option 3 (aeration tank & final clarifier)	\$ 10,842,000	\$ -	\$ 392,000
SO-1	WPCP Flow Optimization	\$ -	\$ -	\$ -
SO-3	Weirs	\$ 189,000	\$ -	\$ 6,000
CU-2	Catchment 10 Reroute (new 3.5 mgd PS)	\$ 4,788,000	\$ 68,000	\$ 241,000
CU-4	Additional Pumping at Wellington (Bigger pumps, 3, 2 mgd pumps)	\$ 861,000	\$ 15,000	\$ 46,000
CU-5	Upsize Wellington Forcemain	\$ 204,000	\$ -	\$ 7,000
II-4	Downspout Disconnection	\$ 13,630,000	\$ (27,000)	\$ 472,000
II-7	Additional Inflow Removal (to Achieve 50% Inflow Removal)	\$ 23,372,000	\$ (46,000)	\$ 809,000
CSOT-3	Modify Treatment with Dechlor at Washington	\$ 164,000	\$ 1,000	\$ 7,000
Scenario Totals:		\$ 91,666,000	\$ 2,000	\$ 3,251,000

<sup>2</sup> Downspout disconnection costs are not included in the affordability calculations.

### Narrative Summary of System Benefits

- ✓ 50% reduction of inflow by disconnecting private inflow sources
- ✓ Conveyance improvements to transport larger volumes of flow from Wellington
- ✓ A new pump station to reduce flows to Washington from Catchment 10
- ✓ Improvements to the wet weather capacity at the WPCP (requires permit change)

### Characteristics of CSO Discharges<sup>1</sup>

Discharge (MG)	Wellington	Washington
2-year Storm	0.00	0.00
5-year Storm	0.00	0.00
10-year Storm	0.00	0.19
Annual Events	0	0
Cost per gallon CSO removed <sup>3</sup>		\$0.11
Cost per event eliminated <sup>3</sup>		\$148,000

### Water Quality Benefits

- ✓ Elimination of CSOs from the Wellington CSO treatment facility for up to a 10-year level of control
- ✓ Improved performance for wet weather treatment at the WPCP and Washington CSO treatment facility

<sup>1</sup> Data provided on costs and CSO volumes are planning level estimates and subject to change as scenarios are revised.

<sup>3</sup> Based on Equivalent Annual Costs and model results from a typical year simulation.