

FINAL - Newport Combined Sewer Overflow (CSO) Stakeholder Workgroup: Meeting #8

ATTENDEES: See Attachment 1

DATE & PLACE: September 6, 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 collect comments from stakeholders on a preferred SMP scenario and any alterations to the scenario for draft SMP development. A summary of the agenda follows:

1. Welcome & Introductions
2. Overview of the Agenda
3. Approval of previous meeting's minutes
4. Follow-up on Parking Lot items:
 - a. Response to comments from meeting #7a
5. Facilitated session to develop preferred alternative
 - a. Stakeholder rankings of 13 scenarios
 - i. Stakeholder comments on how they determined priorities
 - ii. Presentation of results
 - b. Discussion of top scenarios
 - c. Selection of SMP scenario
6. Next meeting information

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 #7 and #7a were approved.

Update on Parking Lot from Previous Meeting

At the previous meeting on August 14, 2012, the stakeholders provided 27 comments and questions. Responses to these comments and questions were prepared and provided to the stakeholders in advance of the meeting. A copy of the comments, questions, and responses is included in Attachment 2. There were no additional questions about the responses at the meeting.

There was a request at the August 14, 2012 meeting for fact sheets summarizing the information about each of the scenarios. These fact sheets were submitted to the stakeholders prior to the meeting along with a survey to identify preferred scenarios. The fact sheets and survey are included at Attachments 3 and 4.

Key Meeting Topics

Stakeholder Rankings

Each stakeholder identified their top rated priorities and SMP scenarios for the group. Comments provided during this discussion included:

- Compliance with the Clean Water Act (CWA) and affordability were the 2 highest priorities.
- Compliance with the schedule should not be the schedule in the consent decree, but the implementation schedule defined in the SMP to maintain affordability
- Adaptability and ability to phase the SMP are also top priorities.

Peter von Zweck presented the results of the stakeholder survey and the results are shown below in Figures 1 and 2. The top rated scenario from the stakeholder surveys was Conveyance 1 (C1). During discussion, the stakeholders also identified the Storage 3 (S3) Scenario as another top choice as they would like to see the results of the typical year modeling for both the I/I reduction scenario (C1) and the storage scenario (S3).

The stakeholders were asked to identify any alterations to the two scenarios that they would like included in the final evaluation. The following modifications were identified:

- C1 - identify control options to achieve a 10-year level of control at the Wellington CSO treatment facility
- S3 - include the Catchment 10 (CU-2) control option and include some level of I/I reduction.

FIGURE 1
Stakeholder Priority Criteria Ratings

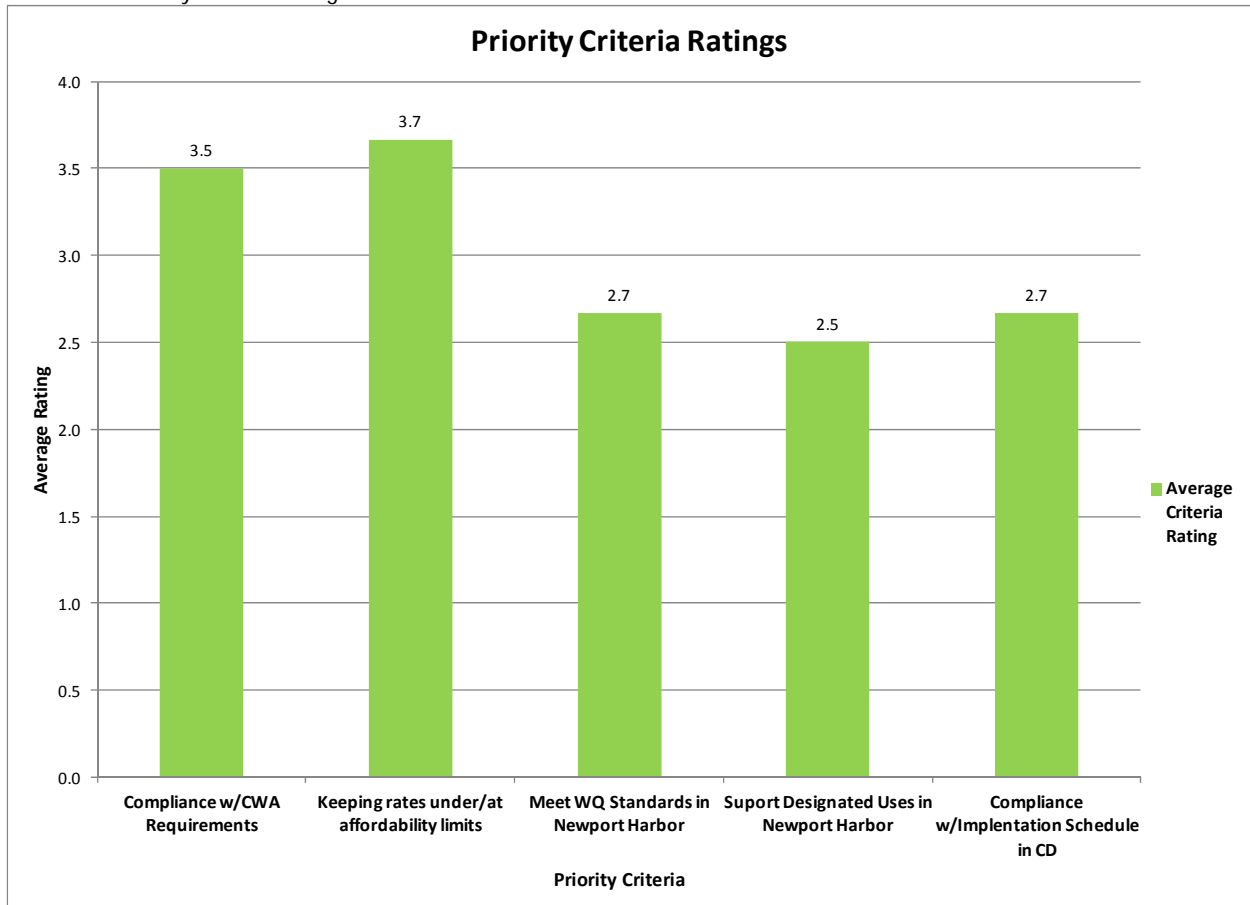
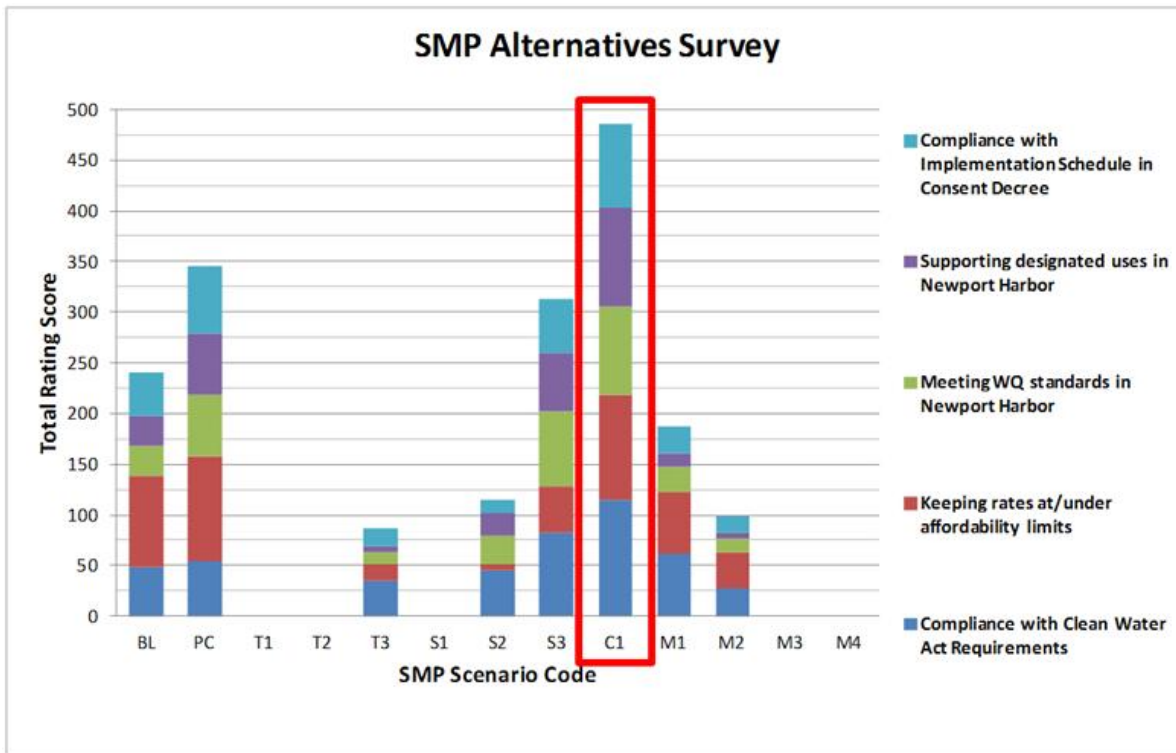


FIGURE 2
Stakeholder



Parking Lot

- Provide information about I/I reduction programs in other cities.
- Provide an update on CSO trends.

Next Meeting

The next meeting was set for October 4, 2012 at 3:00 pm at City Hall, Council Chambers.

Attachment 1

CSO Stakeholder Workgroup Meeting #8

Attendees

MEETING DATE:	Thursday September 6, 2012 @ 3:00 PM	
LOCATION:	City Hall Council Chambers - Newport, RI	
Name	Affiliation	In Attendance
Workgroup Members		
Justin McLaughlin	City Council	
Ray Smedberg	Ad Hoc Committee	<i>RES</i>
David McLaughlin (Alternate)	Ad Hoc Committee	
John McCain	ALN	<i>JM</i>
Roger Wells (Alternate)	ALN	
Tina Dolen	Aquidneck Island Planning Commission	
Chris Witt (Alternate)	Aquidneck Island Planning Commission	
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	<i>Tom</i> <i>BLH</i>
Eric Beck <i>Joe Haberk</i>	RIDEM	
Angelo Liberti (Alternate)	RIDEM	
Jim Brunnhoeffler	RWU	<i>GB</i>

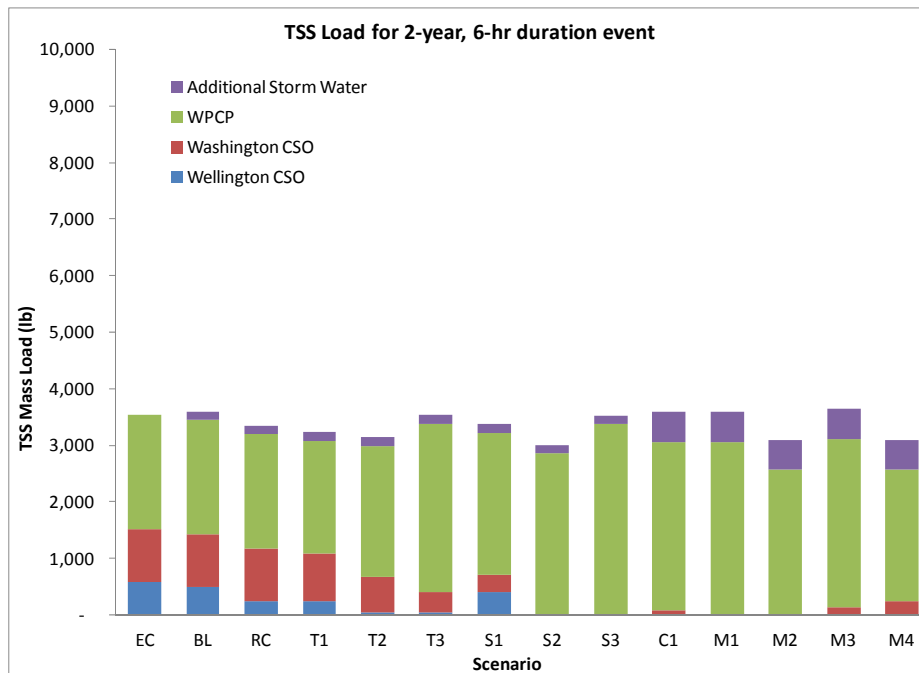
Attachment 2

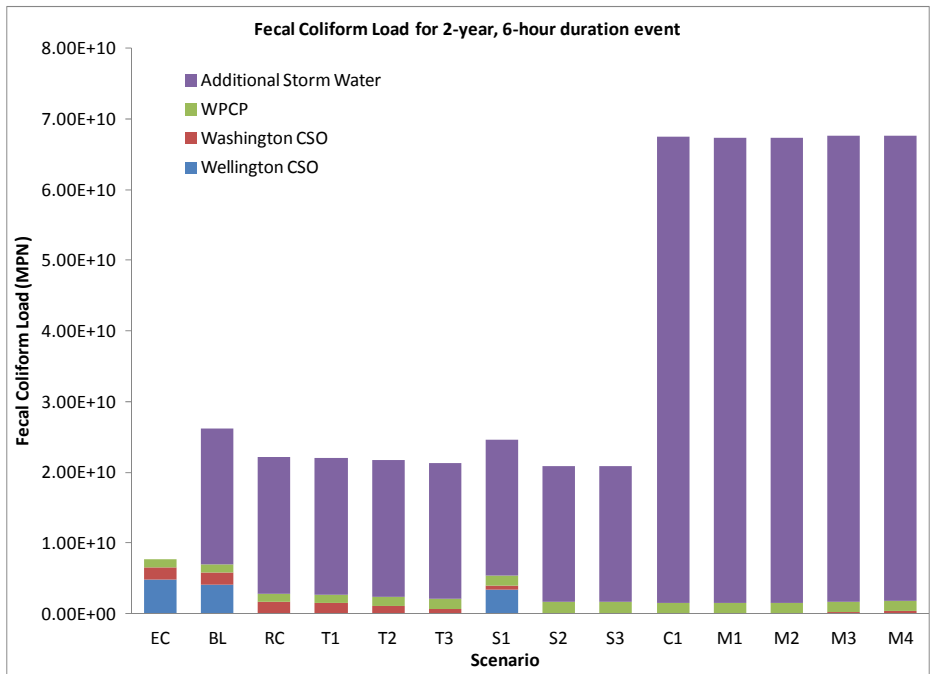
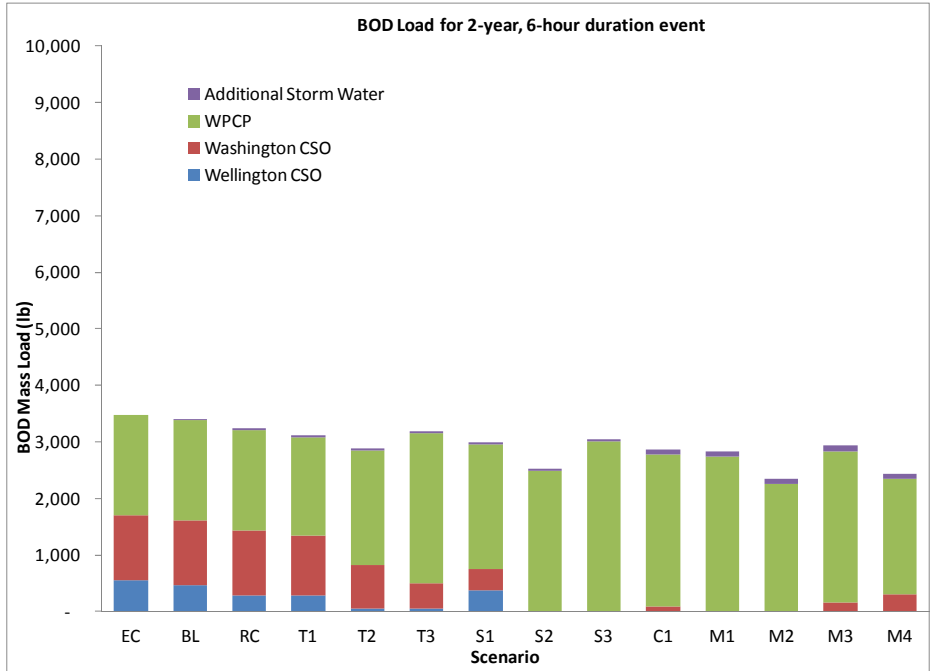
Comments from the August 14th Meeting with Responses

The requests, comments and questions collected during the August 14th Stakeholder Workgroup are summarized below. A response has been provided for each of the 27 items. Each response is based on the best available source of information and engineering evaluations completed to-date. In cases where a complete response is not provided – or is subject to an engineering evaluation not yet completed – a note on the expected resolution is noted.

Request #1: Subtract dry weather loads at the WPCP from the pollutant graphics.

Response: *Updated graphs are provided below.*





Request #2: Please share data on each scenario's performance for reducing discharge volumes for larger storm events.

Response: *A summary of discharge volumes at the two CSO treatment facilities for "larger" storm events is provided below. This same information is provided in the fact sheets for each scenario.*

Scenario	2-year		5-year		10-year	
	Wellington	Washington	Wellington	Washington	Wellington	Washington
EC	1.29	4.30	1.83	6.50	2.72	7.81
BL	1.09	4.30	1.78	5.39	2.67	7.12
PC¹	1.09	4.30	1.78	5.39	2.67	7.12
T1	1.09	3.94	1.78	5.30	2.68	6.89
T2	0.20	2.90	0.59	5.04	1.27	6.74
T3	0.20	1.65	0.58	2.44	1.29	3.76
S1	0.89	1.38	1.29	3.16	2.05	3.73
S2	0.00	0.00	0.38	0.00	0.78	0.28
S3	0.00	0.00	0.35	0.00	0.79	0.94
C1	0.00	0.36	0.00	1.15	0.49	2.76
M1	0.00	0.00	0.00	0.04	0.47	1.64
M2	0.00	0.00	0.00	0.82	0.25	3.21
M3	0.00	0.63	0.00	1.13	0.48	1.18
M4	0.00	1.14	0.00	3.41	0.49	4.28

¹ Revised scenario name from RC to Permit Compliance (PC) to better reflect its objective.

Request #3: Please provide information on CSO event reduction for each scenario.

Response: *The approach to system planning includes evaluation of the system's performance for average annual conditions before and after controls are implemented. This will be addressed in two steps. A "screening level" assessment of overflow frequencies is provided below. These estimates are based on a review and an extrapolation of model results for design events – compared with storms for an "average year". After a control scenario is selected for the SMP, the citywide hydraulic model will be used to calculate the number, volume, duration and peak discharge rates for comparison with the project's baseline.*

Scenario	Estimated Annual Number of Discharge Events ¹	
	Wellington	Washington
EC	12	20
BL	12	20
PC	12	20
T1	12	18
T2	5	11
T3	5	6
S1	11	5
S2	3	1
S3	3	1
C1	1	3
M1	1	1
M2	1	3
M3	1	4
M4	1	5

¹ Estimated from model runs completed to-date.

Request #4: Provide information on Newport's designation as combined system.

Response: *The majority of Newport's collection system was originally designed to transport both sanitary and storm water runoff. Although the City has been active toward constructing a separate drainage system, recent field work has confirmed that a large number of wet weather connections remain throughout the city. This information was summarized in 2 reports submitted to the EPA in 2011. One report was prepared for the Wellington Service Area and the other was for the Washington Service Area. Based on a review of these reports, the EPA acknowledged that portions of the collection system remain combined. EPA's finding expands the framework of regulatory requirements for this project to include the National CSO Policy and also limits the extent of Newport's obligations to "affordable" limits. A copy of the EPA's letter on this topic was distributed at the August 14th Stakeholder's Meeting.*

Request #5: What overflows can be approved per Consent Decree?

Response: *The Consent Decree describes the process for evaluating CSO controls but does not describe the extent to which overflows must be controlled. The EPA's CSO Policy provides more specific guidance on acceptable levels of control. This includes a "demonstrative" and a "presumptive" approach. In situations when elimination is determined to be infeasible or unaffordable, most programs choose to follow the presumptive approach. An excerpt from the policy describing control requirements is provided below:*

The USEPA's CSO Control Policy, contained in 40 CFR Part 122, defines its "Presumption" Approach as a program that meets any of the following:

- i. No more than an average of four overflow events per year, provided that the permitting authority may allow up to two additional overflow events per year. For the purpose of this criterion, an overflow event is one or more overflows from a CSS as the result of a precipitation event that does not receive the minimum treatment specified below; or
- ii. The elimination or the capture for treatment of no less than 85% by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis; or

Request #6: Have the CSO program goals changed?

Response: The programs goals have not changed. Although the framework of regulatory requirements has expanded as a result of the recently completed field investigations and engineering studies, the program continues to follow the planning process described in the Consent Decree. The summary statement used for the program is provided below:

Continue to identify & implement the most cost-effective solution for reducing the number of CSOs to a level protective of Newport Harbor and acceptable to the community and regulatory agencies.

Request #7: The Stakeholders are lacking information to decide how to attack problem.

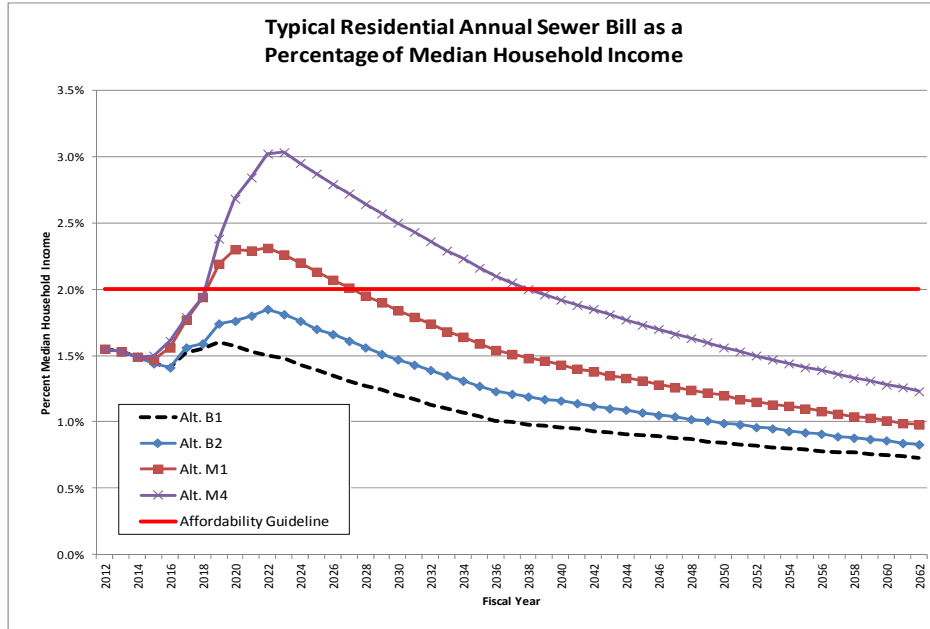
Response: Fact sheets summarizing the components, costs, system benefits, and discharge characteristics have been provided since the August 14th meeting.

Request #8: Explain building blocks and effectiveness, and how scenarios were developed.

Response: The fact sheets include an explanation of the objectives of each scenario and logic used to select its component projects.

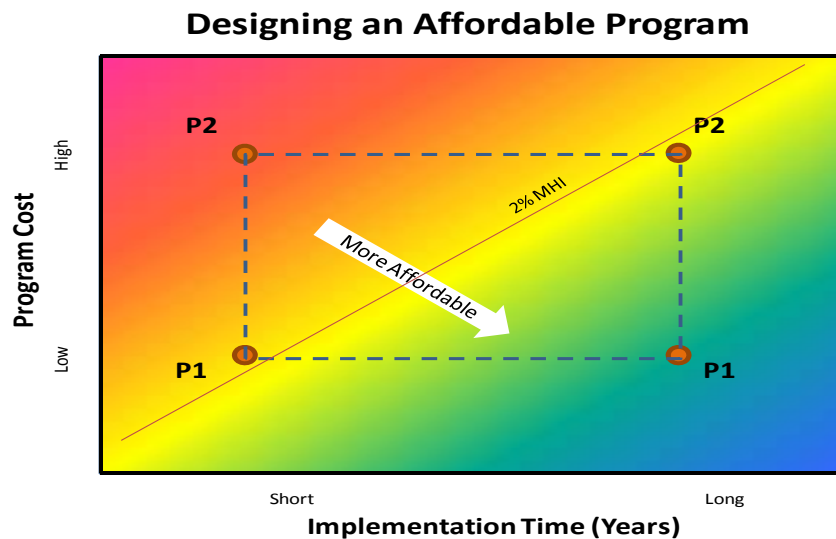
Request #9: What can we do for money left under affordability?

Response: The concept of identifying a program that is affordable is complex. It is influenced by current obligations, identification of controls that meet program objectives, and planning implementation to maintain rates within the City's limits of affordability. The following data were presented During the August 9th Stakeholders Workgroup meeting.



These data demonstrate the potential impacts of 4 scenarios relative to Median Household Income. The scenarios bracket the range of alternatives studied to-date from least expensive – to most expensive. The analysis is also based on the assumption that all of the controls will be implemented by 2018 (the date referenced in the Consent Decree). The graphic shows that implementation of the more expensive scenarios at the schedule referenced in the Consent Decree may cause rates to significantly exceed the 2% of MHI index typically used to limit “affordability”.

Designing an affordable program is a key strategy of the program. As illustrated in the following graphic, the affordability of low and high cost programs can vary significantly when implementation periods are considered.



Request #10: Please provide a matrix of CSO reduction vs. cost.

Response: Fact sheets summarizing the components, costs, system benefits, discharge characteristics and cost per CSO reduction have been provided since the August 14th meeting.

Request #11: Where are we in terms of storm event \$/activity?

Response: Fact sheets summarizing the components, costs, system benefits, discharge characteristics and potential impacts have been provided since the August 14th meeting.

Request #12: The program should address storm water pollutant issues.

Response: Although storm water pollution may contribute to impairments to the harbor and beaches, the focus of the current program is to identify controls appropriate for its two CSO treatment facilities. The City is keeping stormwater in mind while developing the controls for the CSO program because stormwater requirements are covered from the same rates as CSO controls and will impact the affordability determinations.

Request #13: Please address impacts of storm water related to water quality and impacts to beach closures and CSOs.

Response: Data on water quality in the harbor were presented at Stakeholder Workgroup Meeting #4 in September 2011. Based on the data discussed at that meeting it was suggested that reducing CSO events in the harbor is not likely to have any impact on the frequency of beach closures.

Request #14: Baseline projects – system maintenance and operations need to be included and factored into spending.

Response: Costs associated with the City's operations and maintenance agreement – and costs associated with projects in its current CIP have been incorporated into the affordability analysis.

Request #15: Has there been a change in focus from CSO reduction to “cleaner” CSO's?

Response: The goals of the program remain as described in response #6. As described in Item #65 of the Consent Decree this includes an evaluation of a broad range of “additional measures” including I/I reduction, storage and high-rate treatment.

Request #16: Is the City responsible for reducing CSO's if it won't achieve the elimination or WQ targets?

Response: It is expected by the regulatory agencies that even if the City can't achieve the target of elimination, that efforts will be made to work towards that ultimate goal within the confines of affordability.

Request #17: Please include flexibility in the program – allowing for reassessments.

Response: Phasing and reassessment of CSO control measures is a standard practice. The benefits of phasing Newport's investments in CSO controls will be addressed in the SMP.

Request #18: Establish better ways to track benefits/different types of storm events.

Response: The best way to evaluate the potential benefits of CSO control technologies or combination scenarios is through the use of the calibrated hydraulic model. As shown in the fact sheets summarizing the components, costs, system benefits, discharge characteristics and potential impacts that have been provided since the August 14th meeting the potential benefits for larger-sized storm events has been evaluated and presented for consideration.

Request #19: Costs – biggest bang for the buck – what is the minimum to spend and be in compliance? What are threshold numbers and the criteria?

Response: Fact sheets summarizing the components, costs, system benefits, and discharge characteristics have been provided since the August 14th meeting.

Request #20: What is the \$/Sewer Bill/yr for each scenario?

Response: Information on rates for scenarios ranging from the least to the most expensive is provided in response #9. This data is presented with reference to MHI. The potential impact on an average annual utility bill is dependent on both the program costs and the implementation schedule for the recommended scenario.

Request #21: Will these scenarios get the City to “regulatory compliance”?

Response: As shown in the fact sheets, these scenarios will bring the City closer to CSO elimination, but do not guarantee that after implementation and evaluation of progress that the City will not need to make additional efforts towards elimination of CSOs. Much like the City’s efforts in the 1970s and 1980s to separate sewers and build CSO treatment facilities were big steps towards compliance, over time they are being required to do more.

Request #22: The program should not make a commitment for more than 8 to 10 years.

Response: Based on evaluations completed to-date it appears likely that it will require more than 8-years to implement improvements that achieve a high level of control – while maintaining rates below recommended limits for affordability. Correspondingly, phasing and reassessment of CSO control measures will be addressed in the SMP.

Request #23: Show that existing system is optimized before new construction.

Response: Optimization of the system was been considered during the preliminary engineering and evaluation phase of the program. Prior to evaluating CSO controls the City completed assessments of the condition and operating protocols for its wastewater collection and treatment systems. The key documentation for these assessments includes the following:

- *Inventory and CMOM Self Assessment (August 2010)*
- *Evaluation of WACSOTF, WSCOTF and NASC (August 2010)*
- *CMOM Corrective Action Plan (October 2010)*
- *WPCP Flow Optimization Study (March 2011)*

Request #24 What have other CSO communities done to achieve success regarding performance of technologies?

Response: The process for evaluating CSO control options and the results in other communities vary significantly. The EPA's guidance document for developing long-term control plans (US EPA, September 1995) provides both guidance and examples of the planning process. This document also credits the City of Newport in Section 3.3.1.3 for "creative thinking".

3.3.1.3 Creative Thinking

The initial identification of alternatives should involve some degree of brainstorming and free thinking. CSO control can be a challenging problem, where lack of available sites, potential impacts on sensitive receptors, and stringent water quality goals are common issues. The CSO Control Policy encourages "Permittees and permitting authorities...to consider innovative and alternative approaches and technologies that achieve the objectives of this policy and the CWA" (1.F). Some of the more successful urban CSO projects have incorporated original ideas for multiple use facilities and for mitigating impacts on neighboring areas. For example:

- **Rochester, NY**--A tunnel system was designed to cross the Genesee River by way of a conduit suspended across the Genesee Gorge. Crossing the gorge above rather than below the river surface eliminated the need for downstream pumping to the POTW and also allowed the construction of a pedestrian walkway along the suspended conduit, providing access between parks located on either side of the gorge.
- **Newport, RI**--Below-grade, covered storage/sedimentation tanks located on a commercial block were designed to allow parking on the roof slab. Architectural features of the facility were designed to blend in with historic homes in an adjacent neighborhood.

Many communities that have followed EPA's guidance have developed and obtained approvals for control plans founded on the same technologies that have been discussed at recent stakeholder meetings for Newport. Few (if any) have been successful in completely eliminating overflows on a community wide basis. Examples of recent plans in New England include:

- *Providence, Rhode Island – Phase 1 includes construction of a deep tunnel system to reduce overflows for a portion of its system to a long-term average of 4 per year. Currently engaged in the design/construction of conveyance controls as a part of Phase 2.*
- *Bangor, Maine – Developed and implemented a plan in the 1990s that included combinations of conveyance, high-rate treatment and storage following the presumptive approach. The program was selected by EPA as the Outstanding CSO Program in 1996. The City is currently working with EPA on an update to its plan designed to achieve higher levels of control.*
- *City of Boston, Massachusetts - Developed a LTCP using control technologies specific to receiving water uses. Included use of high-rate treatment facilities on the Charles River.*

Request #25: Where does storm water go with I/I reduction?

Response: Storm water disconnected from the wastewater collection system may be redirected to the ground or directly to the storm drainage system. In the case of roof leaders it is expected that a portion of them may be removed through "cut and splash" modifications. The specific extent of this approach would be determined by property owners as the modifications are implemented. It is also expected that some roof leader disconnections may require on-property drainage improvements that would indirectly route those flows through pipes or overland to the storm drainage system. For catch basins currently connected to the wastewater collection system, most modifications are expected to be performed by construction of new drains and/or laterals required to connect them to the storm drainage system.

Additional detail on the implementation strategies required to meet the program's goals for I/I reduction are to be included in a Sewer System Evaluation Report submitted separately from the SMP. In accordance with the Consent Decree, this report is scheduled to be prepared after the SMP is approved by the appropriate regulatory agencies.

Request #26: Please describe how sea level rise (related to climate change) may affect the life expectancy of scenario options.

Response: All discharges from Newport's wastewater collection and treatment systems are pumped into the harbor. This includes discharges from both of the CSO treatment facilities and the WPCP. The potential effect of sea level rise on the performance of these pumped discharges is considerably less than should be expected for systems that drain by gravity. However, due to the close proximity of the CSO treatment facilities to the harbor, measures required to protect them from rising sea levels should be evaluated as a part of the design process.

Request #27: Please provide a summary of the scenarios and their costs.

Response: Fact sheets summarizing the components, costs, system benefits, and discharge characteristics have been provided since the August 14th meeting.

Attachment 3

City of Newport CSO Program Summary of System Master Plan Scenarios

Scenario Code	Scenario Title	Project Locations																																																																																										
BL	Baseline																																																																																											
<p>Description of Objectives and Control Logic</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>																																																																																												
<p>Components and Costs¹</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Project Code</th> <th style="width: 40%;">Name/Brief Description</th> <th style="width: 15%;">Total Capital Cost</th> <th style="width: 15%;">Change in Annual O&M Cost</th> <th style="width: 20%;">Equivalent Annual Cost</th> </tr> </thead> <tbody> <tr> <td colspan="5" style="text-align: center;">City of Newport CIP Projects FY2013-2017</td> </tr> <tr> <td></td> <td>Bridge Street Tide Gates</td> <td style="text-align: right;">\$ 85,000</td> <td style="text-align: right;">\$ -</td> <td style="text-align: right;">\$ 3,000</td> </tr> <tr> <td></td> <td>Almy Pond - TMDL</td> <td style="text-align: right;">\$ 170,000</td> <td style="text-align: right;">\$ -</td> <td style="text-align: right;">\$ 9,000</td> </tr> <tr> <td></td> <td>Sanitary Sewer Improvements</td> <td style="text-align: right;">\$ 11,000,000</td> <td style="text-align: right;">\$ -</td> <td style="text-align: right;">\$ 299,000</td> </tr> <tr> <td>II-1</td> <td>Catch Basin Disconnections</td> <td style="text-align: right;">\$ 2,000,000</td> <td style="text-align: right;">\$ (8,000)</td> <td style="text-align: right;">\$ (000)</td> </tr> <tr> <td></td> <td>Beach PS Improvements</td> <td style="text-align: right;">\$ 305,000</td> <td style="text-align: right;">\$ -</td> <td style="text-align: right;">\$ 11,000</td> </tr> <tr> <td></td> <td>Audit - UW Service Agreement</td> <td style="text-align: right;">\$ 100,000</td> <td style="text-align: right;">\$ -</td> <td style="text-align: right;">\$ 5,000</td> </tr> <tr> <td></td> <td>CSO Program Management</td> <td style="text-align: right;">\$ 1,000,000</td> <td style="text-align: right;">\$ -</td> <td style="text-align: right;">\$ 51,000</td> </tr> <tr> <td>WPCP-1.0</td> <td>Headworks and Disinfection Improvements</td> <td style="text-align: right;">\$ 2,250,000</td> <td style="text-align: right;">\$ -</td> <td style="text-align: right;">\$ 89,000</td> </tr> <tr> <td>WPCP-1.2</td> <td>Final Clarifier Improvements</td> <td style="text-align: right;">\$ 1,500,000</td> <td style="text-align: right;">\$ -</td> <td style="text-align: right;">\$ 54,000</td> </tr> <tr> <td></td> <td style="text-align: right;">Subtotal</td> <td style="text-align: right;">\$ 18,410,000</td> <td style="text-align: right;">\$ (8,000)</td> <td style="text-align: right;">\$ 521,000</td> </tr> <tr> <td colspan="5" style="text-align: center;">Recommended Projects FY2018 - ?</td> </tr> <tr> <td>WPCP-1.0</td> <td>WPCP Improvements</td> <td style="text-align: right;">\$ 13,512,000</td> <td style="text-align: right;">\$ -</td> <td style="text-align: right;">\$ 535,000</td> </tr> <tr> <td></td> <td>Wellington Pump Station Improvements</td> <td style="text-align: right;">\$ 2,886,000</td> <td style="text-align: right;">\$ -</td> <td style="text-align: right;">\$ 104,000</td> </tr> <tr> <td></td> <td>Ruggles Pump Station Improvements</td> <td style="text-align: right;">\$ 206,000</td> <td style="text-align: right;">\$ -</td> <td style="text-align: right;">\$ 7,000</td> </tr> <tr> <td></td> <td style="text-align: right;">Subtotal:</td> <td style="text-align: right;">\$ 16,604,000</td> <td style="text-align: right;">\$ -</td> <td style="text-align: right;">\$ 647,000</td> </tr> <tr> <td></td> <td style="text-align: right;">Scenario Totals:</td> <td style="text-align: right;">\$ 35,014,000</td> <td style="text-align: right;">\$ (8,000)</td> <td style="text-align: right;">\$ 1,168,000</td> </tr> </tbody> </table>			Project Code	Name/Brief Description	Total Capital Cost	Change in Annual O&M Cost	Equivalent Annual Cost	City of Newport CIP Projects FY2013-2017						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)	\$ (000)		Beach PS Improvements	\$ 305,000	\$ -	\$ 11,000		Audit - UW Service Agreement	\$ 100,000	\$ -	\$ 5,000		CSO Program Management	\$ 1,000,000	\$ -	\$ 51,000	WPCP-1.0	Headworks and Disinfection Improvements	\$ 2,250,000	\$ -	\$ 89,000	WPCP-1.2	Final Clarifier Improvements	\$ 1,500,000	\$ -	\$ 54,000		Subtotal	\$ 18,410,000	\$ (8,000)	\$ 521,000	Recommended Projects FY2018 - ?					WPCP-1.0	WPCP Improvements	\$ 13,512,000	\$ -	\$ 535,000		Wellington Pump Station Improvements	\$ 2,886,000	\$ -	\$ 104,000		Ruggles Pump Station Improvements	\$ 206,000	\$ -	\$ 7,000		Subtotal:	\$ 16,604,000	\$ -	\$ 647,000		Scenario Totals:	\$ 35,014,000	\$ (8,000)	\$ 1,168,000
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Recommended Projects FY2018 - ?																																																																																												
WPCP-1.0	WPCP Improvements	\$ 13,512,000	\$ -	\$ 535,000																																																																																								
	Wellington Pump Station Improvements	\$ 2,886,000	\$ -	\$ 104,000																																																																																								
	Ruggles Pump Station Improvements	\$ 206,000	\$ -	\$ 7,000																																																																																								
	Subtotal:	\$ 16,604,000	\$ -	\$ 647,000																																																																																								
	Scenario Totals:	\$ 35,014,000	\$ (8,000)	\$ 1,168,000																																																																																								
<p>Narrative Summary of System Benefits</p> <ul style="list-style-type: none"> ✓ 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 		<p>Characteristics of CSO Discharges¹</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Discharge (MG)</th> <th style="width: 35%;">Wellington</th> <th style="width: 35%;">Washington</th> </tr> </thead> <tbody> <tr> <td>2-year Storm</td> <td style="text-align: center;">1.09</td> <td style="text-align: center;">4.30</td> </tr> <tr> <td>5-year Storm</td> <td style="text-align: center;">1.78</td> <td style="text-align: center;">5.39</td> </tr> <tr> <td>10-year Storm</td> <td style="text-align: center;">2.67</td> <td style="text-align: center;">7.12</td> </tr> <tr> <td>Annual Events</td> <td style="text-align: center;">12</td> <td style="text-align: center;">20</td> </tr> <tr> <td colspan="2">Cost per MG CSO removed²</td> <td style="text-align: center;">N/A</td> </tr> <tr> <td colspan="2">Cost per million MPN fecal coliform removed²</td> <td style="text-align: center;">N/A</td> </tr> </tbody> </table>	Discharge (MG)	Wellington	Washington	2-year Storm	1.09	4.30	5-year Storm	1.78	5.39	10-year Storm	2.67	7.12	Annual Events	12	20	Cost per MG CSO removed ²		N/A	Cost per million MPN fecal coliform removed ²		N/A																																																																					
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<p>Water Quality Benefits</p> <ul style="list-style-type: none"> ✓ Provides a baseline for the comparison of alternatives. Does not significantly improve the volume, frequency, or quality of discharges from the CSO treatment facilities. 																																																																																												

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

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City of Newport CSO Program Summary of System Master Plan Scenarios

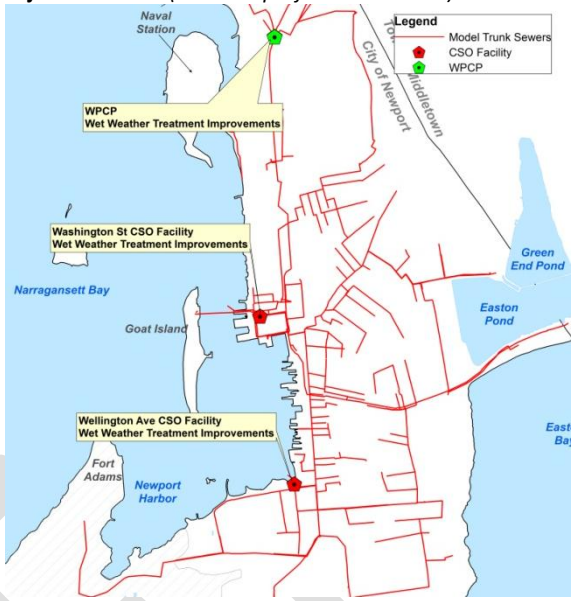
Scenario Code	Scenario Title	Project Locations																						
PC	Permit Compliance																							
<p>Description of Objectives and Control Logic</p> <p>The Permit Compliance scenario includes all projects in the Baseline scenario, which are those that have been identified in the City's existing CIP and other projects recommended to maintain or improve the levels of service provided by the current sanitary/combined sewer system. In addition, treatment at the Wellington Avenue CSO (WACSO) Facility would be improved to meet the required primary effluent standard identified in the City's permit with RIDEM.</p>																								
Components and Costs ¹																								
Project Code	Name/Brief Description	Total Capital Cost	Change in Annual O&M Cost	Equivalent Annual Cost																				
BL	Baseline (includes all Baseline projects)	\$ 35,014,000	\$ (8,000)	\$ 1,168,000																				
CSOT-1.1	Enhanced CSO Treatment (Wellington)	\$ 23,563,000	\$ 160,000	\$ 1,012,000																				
Scenario Totals:		\$ 58,577,000	\$ 152,000	\$ 2,180,000																				
Narrative Summary of System Benefits		Characteristics of CSO Discharges ¹																						
<ul style="list-style-type: none"> ✓ 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 ✓ Improvements to the WACSO facility to improve treatment of CSO effluent 		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Discharge (MG)</th> <th style="width: 35%;">Wellington</th> <th style="width: 35%;">Washington</th> </tr> </thead> <tbody> <tr> <td>2-year Storm</td> <td style="text-align: center;">1.09</td> <td style="text-align: center;">4.30</td> </tr> <tr> <td>5-year Storm</td> <td style="text-align: center;">1.78</td> <td style="text-align: center;">5.39</td> </tr> <tr> <td>10-year Storm</td> <td style="text-align: center;">2.67</td> <td style="text-align: center;">7.12</td> </tr> <tr> <td>Annual Events²</td> <td style="text-align: center;">12</td> <td style="text-align: center;">20</td> </tr> <tr> <td colspan="2">Cost per gallon CSO removed³</td> <td style="text-align: center;">N/A</td> </tr> <tr> <td colspan="2">Cost per million MPN fecal coliform removed³</td> <td style="text-align: center;">\$174</td> </tr> </tbody> </table>		Discharge (MG)	Wellington	Washington	2-year Storm	1.09	4.30	5-year Storm	1.78	5.39	10-year Storm	2.67	7.12	Annual Events ²	12	20	Cost per gallon CSO removed ³		N/A	Cost per million MPN fecal coliform removed ³		\$174
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<p>Water Quality Benefits</p> <ul style="list-style-type: none"> ✓ Treatment at WACSO improves quality of discharges from the facility. Does not significantly improve the volume or frequency of discharges. 																								

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

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City of Newport CSO Program Summary of System Master Plan Scenarios

Scenario Code T1	Scenario Title Treatment 1	Project Locations (Baseline projects not shown) 																							
Description of Objectives and Control Logic The Treatment 1 scenario includes projects designed to improve the quality of discharges through use of enhanced treatment at the CSO facilities and WPCP. The volumes of discharges from the Wellington Avenue and Washington Street facilities are minimally reduced through WPCP improvements.																									
Components and Costs¹																									
Project Code	Name/Brief Description	Total Capital Cost	Change in Annual O&M Cost	Equivalent Annual Cost																					
BL	Baseline (includes all Baseline projects)	\$ 35,014,000	\$ (8,000)	\$ 1,168,000																					
WPCP-1.1	WPCP Upgrade & Expansion, Option 1 (primary clarifiers)	\$ 7,662,000	\$ -	\$ 303,000																					
WPCP-2	CEPT	\$ 12,842,000	\$ 577,000	\$ 213,000																					
SO-1	WPCP Flow Optimization	\$ -	\$ -	\$ -																					
CSOT-1.1	Enhanced CSO Treatment (Wellington)	\$ 23,563,000	\$ 160,000	\$ 1,012,000																					
CSOT-1.2	Enhanced CSO Treatment (Washington)	\$ 38,430,000	\$ 160,000	\$ 1,549,000																					
SO-2	Increased Pumping Capacity/Better Use of System Capacity	\$ -	\$ 22,000	\$ 22,000																					
Scenario Totals:		\$ 117,511,000	\$ 911,000	\$ 4,267,000																					
Narrative Summary of System Benefits <ul style="list-style-type: none"> ✓ Improvements to the effluent discharge quality at WACSO and WSCSO facilities ✓ Improvements to the wet weather capacity and treatment at the WPCP 		Characteristics of CSO Discharges¹ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Discharge (MG)</th> <th style="text-align: center;">Wellington</th> <th style="text-align: center;">Washington</th> </tr> </thead> <tbody> <tr> <td>2-year Storm</td> <td style="text-align: center;">1.09</td> <td style="text-align: center;">3.94</td> </tr> <tr> <td>5-year Storm</td> <td style="text-align: center;">1.78</td> <td style="text-align: center;">5.30</td> </tr> <tr> <td>10-year Storm</td> <td style="text-align: center;">2.68</td> <td style="text-align: center;">6.89</td> </tr> <tr> <td>Annual Events²</td> <td style="text-align: center;">12</td> <td style="text-align: center;">18</td> </tr> <tr> <td colspan="2">Cost per gallon CSO removed³</td> <td style="text-align: right;">\$3.23</td> </tr> <tr> <td colspan="2">Cost per million MPN fecal coliform removed³</td> <td style="text-align: right;">\$310</td> </tr> </tbody> </table>			Discharge (MG)	Wellington	Washington	2-year Storm	1.09	3.94	5-year Storm	1.78	5.30	10-year Storm	2.68	6.89	Annual Events ²	12	18	Cost per gallon CSO removed ³		\$3.23	Cost per million MPN fecal coliform removed ³		\$310
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City of Newport CSO Program Summary of System Master Plan Scenarios

Scenario Code	Scenario Title	Project Locations (Baseline projects not shown)																																																		
T2	Treatment 2																																																			
<p>Description of Objectives and Control Logic</p> <p>The Treatment 2 scenario includes projects designed to improve the quality of discharges through use of enhanced treatment at the CSO facilities and WPCP. The volumes of discharges from the Wellington Avenue and Washington Street facilities are reduced through conveyance and WPCP improvements.</p>																																																				
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<p>Narrative Summary of System Benefits</p> <ul style="list-style-type: none"> ✓ Conveyance improvements to transport larger volumes of flow from Wellington and reduce volumes to Washington ✓ Improvements to the effluent discharge quality at WACSO and WSCSO facilities ✓ Improvements to the wet weather capacity and treatment at the WPCP 		<p>Characteristics of CSO Discharges¹</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Discharge (MG)</th> <th style="width: 35%;">Wellington</th> <th style="width: 35%;">Washington</th> </tr> </thead> <tbody> <tr> <td>2-year Storm</td> <td style="text-align: center;">0.20</td> <td style="text-align: center;">2.90</td> </tr> <tr> <td>5-year Storm</td> <td style="text-align: center;">0.59</td> <td style="text-align: center;">5.04</td> </tr> <tr> <td>10-year Storm</td> <td style="text-align: center;">1.27</td> <td style="text-align: center;">6.74</td> </tr> <tr> <td>Annual Events²</td> <td style="text-align: center;">5</td> <td style="text-align: center;">11</td> </tr> <tr> <td colspan="2">Cost per gallon CSO removed³</td> <td style="text-align: right;">\$1.56</td> </tr> <tr> <td colspan="2">Cost per million MPN fecal coliform removed³</td> <td style="text-align: right;">\$393</td> </tr> </tbody> </table>	Discharge (MG)	Wellington	Washington	2-year Storm	0.20	2.90	5-year Storm	0.59	5.04	10-year Storm	1.27	6.74	Annual Events ²	5	11	Cost per gallon CSO removed ³		\$1.56	Cost per million MPN fecal coliform removed ³		\$393																													
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City of Newport CSO Program Summary of System Master Plan Scenarios

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<p>Description of Objectives and Control Logic</p> <p>The Treatment 3 scenario includes projects designed to improve the quality of discharges through use of enhanced treatment at the CSO facilities and WPCP. The volumes of discharges from the Wellington Avenue and Washington Street facilities are reduced through conveyance improvements, including a new pump station, and WPCP improvements.</p>																																																														
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<p>Narrative Summary of System Benefits</p> <ul style="list-style-type: none"> ✓ A new pump station to reduce flows to Long Wharf and Washington from Catchment 10 ✓ Conveyance improvements to transport larger volumes of flow from Wellington and reduce volumes to Washington ✓ Improvements to the effluent discharge quality at WACSO and WSCSO facilities ✓ Improvements to the wet weather capacity and treatment at the WPCP 		<p>Characteristics of CSO Discharges¹</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Discharge (MG)</th> <th style="width: 35%;">Wellington</th> <th style="width: 35%;">Washington</th> </tr> </thead> <tbody> <tr> <td>2-year Storm</td> <td style="text-align: center;">0.20</td> <td style="text-align: center;">1.65</td> </tr> <tr> <td>5-year Storm</td> <td style="text-align: center;">0.58</td> <td style="text-align: center;">2.44</td> </tr> <tr> <td>10-year Storm</td> <td style="text-align: center;">1.29</td> <td style="text-align: center;">3.76</td> </tr> <tr> <td>Annual Events²</td> <td style="text-align: center;">5</td> <td style="text-align: center;">6</td> </tr> <tr> <td colspan="2">Cost per gallon CSO removed³</td> <td style="text-align: center;">\$0.80</td> </tr> <tr> <td colspan="2">Cost per million MPN fecal coliform removed³</td> <td style="text-align: center;">\$403</td> </tr> </tbody> </table>	Discharge (MG)	Wellington	Washington	2-year Storm	0.20	1.65	5-year Storm	0.58	2.44	10-year Storm	1.29	3.76	Annual Events ²	5	6	Cost per gallon CSO removed ³		\$0.80	Cost per million MPN fecal coliform removed ³		\$403																																							
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¹ Data provided on costs and CSO volumes are planning level estimates and subject to change as scenarios are revised.

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³ Based on Equivalent Annual Costs (w/o baseline) and a 10-year storm event.

City of Newport CSO Program Summary of System Master Plan Scenarios

Scenario Code S1	Scenario Title Storage 1	Project Locations (Baseline projects not shown) 																							
Description of Objectives and Control Logic The Storage 1 scenario includes projects designed to reduce the frequency and volume of discharges from the CSO treatment facilities through use of off-line storage at the Wellington facility, Washington facility and the WPCP.																									
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Project Code	Name/Brief Description	Total Capital Cost	Change in Annual O&M Cost	Equivalent Annual Cost																					
BL	Baseline (includes all Baseline projects)	\$ 35,014,000	\$ (8,000)	\$ 1,168,000																					
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OS-2	WPCP Storage (2MG)	\$ 16,667,000	\$ 24,000	\$ 590,000																					
OS-19	King Park, Wellington Ave by CSO Facility, Storage (0.9MG)	\$ 17,629,000	\$ 27,000	\$ 626,000																					
Scenario Totals:		\$ 90,876,000	\$ 69,000	\$ 3,143,000																					
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City of Newport CSO Program Summary of System Master Plan Scenarios

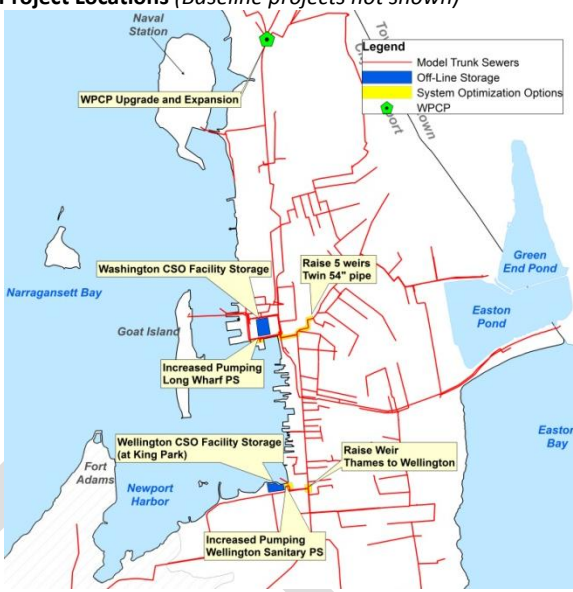
Scenario Code	Scenario Title	Project Locations (Baseline projects not shown)																																																		
S2	Storage 2																																																			
<p>Description of Objectives and Control Logic</p> <p>The Storage 2 scenario includes projects designed to reduce the frequency and volume of discharges from the CSO treatment facilities through a combination of conveyance improvements, WPCP improvements and off-line storage at the Washington facility, Wellington facility, and WPCP. The addition of conveyance improvements provides in-system storage which reduces the required storage for off-line facilities.</p>																																																				
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¹ Data provided on costs and CSO volumes are planning level estimates and subject to change as scenarios are revised.

² Results estimated based on scenario performance for design events evaluated.

³ Based on Equivalent Annual Costs (w/o baseline) and a 10-year storm event.

City of Newport CSO Program Summary of System Master Plan Scenarios


Scenario Code S3	Scenario Title Storage 3	Project Locations (Baseline projects not shown) 																							
Description of Objectives and Control Logic The Storage 3 scenario includes projects designed to reduce the frequency and volume of discharges from the CSO treatment facilities through a combination of conveyance improvements, WPCP improvements and off-line storage at the Washington and Wellington facilities. The conveyance and WPCP wet weather capacity improvements reduce the required storage for the off-line facilities.																									
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Project Code	Name/Brief Description	Total Capital Cost	Change in Annual O&M Cost	Equivalent Annual Cost																					
BL	Baseline (includes all Baseline projects)	\$ 35,014,000	\$ (8,000)	\$ 1,168,000																					
WPCP-1.1	WPCP Upgrade & Expansion, Option 1 (primary clarifiers)	\$ 7,662,000	\$ -	\$ 303,000																					
WPCP-1.2	WPCP Upgrade & Expansion, Option 2 (aeration tank)	\$ 5,891,000	\$ -	\$ 213,000																					
OS-11	Washington CSO Facility Storage (3MG)	\$ 21,567,000	\$ 26,000	\$ 759,000																					
SO-1	WPCP Flow Optimization	\$ -	\$ -	\$ -																					
SO-3	Weirs	\$ 189,000	\$ -	\$ 6,000																					
OS-19	King Park, Wellington Ave by CSO Facility, Storage (0.9MG)	\$ 17,629,000	\$ 27,000	\$ 626,000																					
SO-2	Increased Pumping Capacity/Better Use of System Capacity	\$ -	\$ 22,000	\$ 22,000																					
Scenario Totals:		\$ 87,951,000	\$ 67,000	\$ 3,097,000																					
Narrative Summary of System Benefits <ul style="list-style-type: none"> ✓ Conveyance improvements to transport larger volumes of flow from Wellington and reduce volumes to Washington ✓ Improvements to the wet weather capacity and treatment at the WPCP ✓ Off-line storage at the Wellington and Washington CSO facilities to capture wet weather flows 		Characteristics of CSO Discharges¹ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Discharge (MG)</th> <th style="text-align: center;">Wellington</th> <th style="text-align: center;">Washington</th> </tr> </thead> <tbody> <tr> <td>2-year Storm</td> <td style="text-align: center;">0.00</td> <td style="text-align: center;">0.00</td> </tr> <tr> <td>5-year Storm</td> <td style="text-align: center;">0.35</td> <td style="text-align: center;">0.04</td> </tr> <tr> <td>10-year Storm</td> <td style="text-align: center;">0.79</td> <td style="text-align: center;">0.94</td> </tr> <tr> <td>Annual Events²</td> <td style="text-align: center;">3</td> <td style="text-align: center;">1</td> </tr> <tr> <td colspan="2">Cost per gallon CSO removed³</td> <td style="text-align: right;">\$0.22</td> </tr> <tr> <td colspan="2">Cost per million MPN fecal coliform removed³</td> <td style="text-align: right;">\$217</td> </tr> </tbody> </table>			Discharge (MG)	Wellington	Washington	2-year Storm	0.00	0.00	5-year Storm	0.35	0.04	10-year Storm	0.79	0.94	Annual Events ²	3	1	Cost per gallon CSO removed ³		\$0.22	Cost per million MPN fecal coliform removed ³		\$217
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City of Newport CSO Program Summary of System Master Plan Scenarios

Scenario Code C1	Scenario Title Conveyance 1	Project Locations (Baseline projects not shown) 																							
Description of Objectives and Control Logic The Conveyance 1 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 facility are reduced through the disconnection of downspouts and by improvements to the conveyance system. The volumes of discharges from the Washington facility are reduced through the disconnection of downspouts and by improvements to the conveyance system, including a new pump station.																									
Components and Costs^{1,2}																									
Project Code	Name/Brief Description	Total Capital Cost	Change in Annual O&M Cost	Equivalent Annual Cost																					
BL	Baseline (includes all Baseline projects)	\$ 35,014,000	\$ (8,000)	\$ 1,168,000																					
WPCP-1.1	WPCP Upgrade & Expansion, Option 1 (primary clarifiers)	\$ 7,662,000	\$ -	\$ 303,000																					
WPCP-1.2	WPCP Upgrade & Expansion, Option 2 (aeration tank)	\$ 5,891,000	\$ -	\$ 213,000																					
SO-1	WPCP Flow Optimization	\$ -	\$ -	\$ -																					
CU-2	Catchment 10 Reroute (new 3.5 mgd PS)	\$ 4,788,000	\$ 68,000	\$ 241,000																					
II-4	Downspout Disconnection	\$ 25,821,000	\$ (27,000)	\$ 918,000																					
SO-3	Weirs	\$ 189,000	\$ -	\$ 6,000																					
SO-2	Increased Pumping Capacity/Better Use of System Capacity	\$ -	\$ 22,000	\$ 22,000																					
Scenario Totals:		\$ 79,365,000	\$ 54,000	\$ 2,871,000																					
² Downspout disconnection costs are included in the affordability calculations but do not affect user rates.																									
Narrative Summary of System Benefits <ul style="list-style-type: none"> ✓ Reduction of inflow from the largest known contributor to the system - downspouts ✓ 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 		Characteristics of CSO Discharges¹ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Discharge (MG)</th> <th style="width: 20%;">Wellington</th> <th style="width: 20%;">Washington</th> </tr> </thead> <tbody> <tr> <td>2-year Storm</td> <td style="text-align: center;">0.00</td> <td style="text-align: center;">0.36</td> </tr> <tr> <td>5-year Storm</td> <td style="text-align: center;">0.00</td> <td style="text-align: center;">1.15</td> </tr> <tr> <td>10-year Storm</td> <td style="text-align: center;">0.49</td> <td style="text-align: center;">2.76</td> </tr> <tr> <td>Annual Events³</td> <td style="text-align: center;">1</td> <td style="text-align: center;">3</td> </tr> <tr> <td colspan="2">Cost per gallon CSO removed⁴</td> <td style="text-align: right;">\$0.23</td> </tr> <tr> <td colspan="2">Cost per million MPN fecal coliform removed⁴</td> <td style="text-align: right;">-\$29*</td> </tr> </tbody> </table> <p><small>* Negative costs denote added bacteria to receiving waters</small></p>			Discharge (MG)	Wellington	Washington	2-year Storm	0.00	0.36	5-year Storm	0.00	1.15	10-year Storm	0.49	2.76	Annual Events ³	1	3	Cost per gallon CSO removed ⁴		\$0.23	Cost per million MPN fecal coliform removed ⁴		-\$29*
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City of Newport CSO Program Summary of System Master Plan Scenarios

Scenario Code	Scenario Title	Project Locations (Baseline projects not shown)																																																							
M1	Master Mix 1																																																								
<p>Description of Objectives and Control Logic</p> <p>The Master Mix 1 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, off-line storage, conveyance, and wastewater treatment projects. The volumes of discharges from the Wellington facility are reduced through the disconnection of downspouts and by improvements to the conveyance system. The volumes of discharges from the Washington facility are reduced through the disconnection of downspouts, offline storage, improvements to the conveyance system and improvements to the WPCP wet weather capacity.</p>																																																									
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<p>Narrative Summary of System Benefits</p> <ul style="list-style-type: none"> ✓ Off-line storage at the Washington CSO facilities to capture wet weather flows ✓ Reduction of inflow from the largest known contributor to the system - downspouts ✓ 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 and treatment at the WPCP 		<p>Characteristics of CSO Discharges¹</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 30%;">Discharge (MG)</th> <th style="width: 35%;">Wellington</th> <th style="width: 35%;">Washington</th> </tr> </thead> <tbody> <tr> <td>2-year Storm</td> <td>0.00</td> <td>0.00</td> </tr> <tr> <td>5-year Storm</td> <td>0.00</td> <td>0.04</td> </tr> <tr> <td>10-year Storm</td> <td>0.47</td> <td>1.64</td> </tr> <tr> <td>Annual Events³</td> <td>1</td> <td>1</td> </tr> <tr> <td colspan="2">Cost per gallon CSO removed⁴</td> <td>\$0.29</td> </tr> <tr> <td colspan="2">Cost per million MPN fecal coliform removed⁴</td> <td>-\$42*</td> </tr> </tbody> </table> <p>* Negative costs denote added bacteria to receiving waters</p>	Discharge (MG)	Wellington	Washington	2-year Storm	0.00	0.00	5-year Storm	0.00	0.04	10-year Storm	0.47	1.64	Annual Events ³	1	1	Cost per gallon CSO removed ⁴		\$0.29	Cost per million MPN fecal coliform removed ⁴		-\$42*																																		
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¹ Data provided on costs and CSO volumes are planning level estimates and subject to change as scenarios are revised.

³ Results estimated based on scenario performance for design events evaluated.

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City of Newport CSO Program Summary of System Master Plan Scenarios

Scenario Code M2	Scenario Title Master Mix 2	Project Locations (Baseline projects not shown)																							
<p>Description of Objectives and Control Logic</p> <p>The Master Mix 2 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, off-line storage, and conveyance projects. The volumes of discharges from the Wellington facility are reduced through the disconnection of downspouts and by improvements to the conveyance system. The volumes of discharges from the Washington facility are reduced through the disconnection of downspouts, offline storage and by improvements to the conveyance system.</p>																									
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Project Code	Name/Brief Description	Total Capital Cost	Change in Annual O&M Cost	Equivalent Annual Cost																					
BL	Baseline (includes all Baseline projects)	\$ 35,014,000	\$ (8,000)	\$ 1,168,000																					
OS-11	Washington CSO Facility Storage (3MG)	\$ 21,567,000	\$ 26,000	\$ 759,000																					
CU-2	Catchment 10 Reroute (new 3.5 mgd PS)	\$ 4,788,000	\$ 68,000	\$ 241,000																					
II-4	Downspout Disconnection	\$ 25,821,000	\$ (27,000)	\$ 918,000																					
SO-3	Weirs	\$ 189,000	\$ -	\$ 6,000																					
OS-19	King Park, Wellington Ave by CSO Facility, Storage (0.9MG)	\$ 17,629,000	\$ 27,000	\$ 626,000																					
SO-2	Increased Pumping Capacity/Better Use of System Capacity	\$ -	\$ 22,000	\$ 22,000																					
Scenario Totals:		\$ 105,008,000	\$ 107,000	\$ 3,740,000																					
<p>² Downspout disconnection costs are included in the affordability calculations but do not affect user rates.</p>																									
Narrative Summary of System Benefits		Characteristics of CSO Discharges ¹																							
<ul style="list-style-type: none"> ✓ Reduction of inflow from the largest known contributor to the system - downspouts ✓ Conveyance improvements to transport larger volumes of flow from Wellington ✓ A new pump station to reduce flows to Washington from Catchment 10 ✓ Off-line storage at the Wellington and Washington CSO facilities to capture wet weather flows 		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Discharge (MG)</th> <th style="width: 35%;">Wellington</th> <th style="width: 35%;">Washington</th> </tr> </thead> <tbody> <tr> <td>2-year Storm</td> <td style="text-align: center;">0.00</td> <td style="text-align: center;">0.00</td> </tr> <tr> <td>5-year Storm</td> <td style="text-align: center;">0.00</td> <td style="text-align: center;">0.82</td> </tr> <tr> <td>10-year Storm</td> <td style="text-align: center;">0.25</td> <td style="text-align: center;">3.21</td> </tr> <tr> <td>Annual Events³</td> <td style="text-align: center;">1</td> <td style="text-align: center;">3</td> </tr> <tr> <td colspan="2">Cost per gallon CSO removed⁴</td> <td style="text-align: right;">\$0.36</td> </tr> <tr> <td colspan="2">Cost per million MPN fecal coliform removed⁴</td> <td style="text-align: right;">-\$44*</td> </tr> </tbody> </table> <p>* Negative costs denote added bacteria to receiving waters</p>			Discharge (MG)	Wellington	Washington	2-year Storm	0.00	0.00	5-year Storm	0.00	0.82	10-year Storm	0.25	3.21	Annual Events ³	1	3	Cost per gallon CSO removed ⁴		\$0.36	Cost per million MPN fecal coliform removed ⁴		-\$44*
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City of Newport CSO Program Summary of System Master Plan Scenarios

Scenario Code M3	Scenario Title Master Mix 3	Project Locations (Baseline projects not shown)																																																												
<p>Description of Objectives and Control Logic</p> <p>The Master Mix 3 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, off-line storage, conveyance, and wastewater treatment projects. The volumes of discharges from the Wellington facility are reduced through the disconnection of downspouts and by improvements to the conveyance system. The volumes of discharges from the Washington facility are reduced through the disconnection of downspouts, offline storage at the WPCP, improvements to the conveyance system and improvements to the WPCP wet weather capacity.</p>																																																														
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City of Newport CSO Program Summary of System Master Plan Scenarios

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<p>Narrative Summary of System Benefits</p> <ul style="list-style-type: none"> ✓ Reduction of inflow from the largest known contributor to the system - downspouts ✓ 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 and treatment at the WPCP ✓ Improvements to the effluent discharge quality at WACSO and WSCSO facilities 		<p>Characteristics of CSO Discharges¹</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Discharge (MG)</th> <th style="width: 30%;">Wellington</th> <th style="width: 30%;">Washington</th> </tr> </thead> <tbody> <tr> <td>2-year Storm</td> <td style="text-align: center;">0.00</td> <td style="text-align: center;">1.14</td> </tr> <tr> <td>5-year Storm</td> <td style="text-align: center;">0.00</td> <td style="text-align: center;">3.41</td> </tr> <tr> <td>10-year Storm</td> <td style="text-align: center;">0.49</td> <td style="text-align: center;">4.28</td> </tr> <tr> <td>Annual Events³</td> <td style="text-align: center;">1</td> <td style="text-align: center;">5</td> </tr> <tr> <td colspan="2">Cost per gallon CSO removed⁴</td> <td style="text-align: right;">\$0.88</td> </tr> <tr> <td colspan="2">Cost per million MPN fecal coliform removed⁴</td> <td style="text-align: right;">-\$89*</td> </tr> </tbody> </table> <p>* Negative costs denote added bacteria to receiving waters</p>	Discharge (MG)	Wellington	Washington	2-year Storm	0.00	1.14	5-year Storm	0.00	3.41	10-year Storm	0.49	4.28	Annual Events ³	1	5	Cost per gallon CSO removed ⁴		\$0.88	Cost per million MPN fecal coliform removed ⁴		-\$89*																																							
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<p>Water Quality Benefits</p> <ul style="list-style-type: none"> ✓ Potential to eliminate discharges from the CSO treatment facilities for up to a 5-year level of control at Wellington ✓ Improved performance for wet weather treatment at the WPCP and the two CSO facilities 																																																														

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

³ Results estimated based on scenario performance for design events evaluated.

⁴ Based on Equivalent Annual Costs (w/o baseline) and a 10-year storm event.

Attachment 4

Newport CSO Stakeholder Workgroup – SMP Alternatives Survey

The purpose of the following survey is to evaluate the evolving priorities of the Stakeholder Workgroup and to identify the SMP scenario that will achieve these priorities. The survey will consist of the following 4 steps:

- A. Re-rating of top 5 priority criteria.
- B. Reviewing & selecting top 3 SMP scenarios
- C. Rating top 3 scenarios against priority criteria.
- D. Providing suggested improvements to top selected scenario.

Directions for Completing Survey

Please use the following directions to complete the survey.

Part A – Re-rating of Priority Criteria

Please complete this section of the survey first. In the first column are the top 5 priority criteria for the program as identified by the stakeholder workgroup during previous meetings. In the second column (shaded green), **please rate these 5 priority criteria from 1-5**, with 5 being your highest priority and 1 being your lowest priority. **No criteria should receive the same rating.**

For the affordability criteria, please keep in mind that just because a scenario has a greater capital or average annual cost does not mean that it will be unaffordable. This scenario will just require a longer schedule to implement using a phased approach in order to keep rates at affordable levels as discussed at meeting #7a.

Part B – Selecting Top 3 SMP Scenarios

Along with this survey, you have received a packet containing a fact sheet on each of the SMP scenarios as well as the baseline scenario. After reviewing the fact sheets, please place your top 3 scenarios in the boxes shaded orange for Part B of the survey. Please use the scenario codes provided on the fact sheets to identify your top 3 scenarios.

Upon reviewing the fact sheet you will see that we have provided a number of cost components for your review including capital cost, additional annual O&M cost, equivalent annual cost, and \$/gallon CSO removed. Evaluating cost impacts can be very complicated and is not dependent upon one or even two metrics, therefore we have attempted to provide a range of cost impacts for your consideration.

Part C – Rating Top Scenarios Against Priority Criteria

Part C of the survey is shaded in blue. Please rate how well you believe each of the scenarios you have identified as your top 3 choices will achieve the priority criteria from 0 – 10 with 0 being adverse and 10 being excellent. Numbers may be used more than once. For more guidance on making these determinations, please see the definitions in Table 1 below.

Please realize that some of the priority criteria are in direct competition with each other. For example, compliance with the implementation schedule in the Consent decree would limit the ability to maintain rates at or under affordability limits. It is expected that the scenarios will receive varying ratings for the different priority criteria.

Table 1 – Part C Rating Guidance

Rating	General Description
Excellent (10)	Most favorable – indicating the highest possible rating, compared to all other available alternatives. For example, an excellent rating for reliability would indicate that the technology is nearly fail-safe.
Very Good (7-9)	Favorable – indicating a better than average rating, compared to all other available alternatives; but not the best possible. For example, a very good rating for reliability would indicate that the technology is more reliable than most, but is not among the best.
Good (4-6)	Moderate or average – indicating a mid-range rating compared to all other available alternatives. For example, a good rating for reliability would indicate that reliability should not be a major concern. However, infrequent system breakdowns can be expected to occur.
Poor (1-3)	Unfavorable – indicating a worse than average rating, compared to other available alternatives; but not the worst possible. For example, a poor rating for reliability would indicate that the technology is less reliable than most, but is not among the least reliable.
Adverse (0)	Most unfavorable – indicating the lowest possible rating compared to all other available alternatives. For example, an adverse rating for reliability would indicate the technology may likely have excessive down time, and would often be unavailable when needed.

Part D – Suggested Improvements to Top Rated Scenario

In Part D of the survey, please add any suggestions you may have that you believe would improve the scenario you rated as your top choice.

SMP Alternatives Survey

Please complete the survey below, only completing the shaded areas for Parts A, B & C as described above.

Part A – Priority Criteria <i>(Rate 1-5, with 1 being lowest priority & 5 being highest, using each number only once.)</i>		Part B – Identifying Top 3 SMP Scenarios		
		SMP Scenario #1	SMP Scenario #2	SMP Scenario #3
		Part C – Rating Top 3 Scenarios Against Priority Criteria (Rate from 0 – 10, using Table 1 for guidance.)		
Compliance with Clean Water Act Requirements				
Keeping rates at/under affordability limits				
Meeting WQ standards in Newport Harbor				
Supporting designated uses in Newport Harbor				
Compliance with Implementation Schedule in Consent Decree				
Part D – Suggested Improvements to Top Rated Scenario				
In the space below please provide any suggestions you have that you believe would improve upon your #1 rated scenario above.				