

APPENDIX A
Meeting Notification

Community Workshop #3 - You're Invited!



Wednesday, January 19, 2011 6:00 - 8:00 pm

Rainier Community Center, 4600 38th Avenue S, Seattle

**We
Need
Your
Input!**

Seattle Public Utilities (SPU) has identified a short list of potential projects and sites to reduce CSOs that overflow near Seward Park and Martha Washington Park. Please join us at this third community workshop to provide your input on the alternatives.

SPU plans to select a preferred alternative in fall 2011. Your participation will help SPU identify a preferred alternative that reflects community values.

Come to this workshop to:

- Compare key features of each alternative
- Understand the benefits and impacts of each solution
- Ask questions and provide your input

What is a CSO?

CSOs happen when pipes that carry both sewage and stormwater overflow into our waterways during heavy rain. Reducing CSOs will provide cleaner waterways for a healthy Seattle.



SPU is studying multiple storage options, including under streets, under Seward Park and Martha Washington Park, and underneath private property.



Questions?

Call **206.826.4767**

or email **SPU_HCSO@seattle.gov**

Visit our website at

www.seattle.gov/CSO

For interpretation services please call 206-826-4767

如需要口譯服務, 請撥電話號碼 206-826-4767

통역 서비스를 원하시면 206-826-4767 으로 전화하세요

Para servicios de interpretación por favor llame al 206-826-4767

Về dịch vụ phiên dịch xin gọi 206-826-4767

APPENDIX B
Participant Packet



North Henderson CSO Reduction Project Community Workshop #3

Wednesday, January 19, 2011
6:00 pm to 8:00 pm

Rainier Community Center
4600 38th Avenue S, Seattle

Agenda

6:00 pm	Sign In	
6:05 pm	Welcome & Workshop Overview	<i>Trish Rhay, Seattle Public Utilities Dan Speicher, CH2MHill</i>
6:20 pm	Alternatives Presentation	<i>Andrew Lee, Seattle Public Utilities</i>
6:35 pm	Work Groups	<i>Dan Speicher, CH2MHill</i>
	Part 1 – Community Criteria Weighting Exercise (30 minutes)	
	Part 2 – Scoring the North Henderson Alternatives (30 minutes)	
	<i>Discussion:</i>	
	<ul style="list-style-type: none"><i>Have we captured all the community evaluation criteria?</i><i>Does the scoring of the alternatives against the community evaluation criteria look right?</i>	
7:40 pm	Report Out	<i>Dan Speicher, CH2MHill</i>
7:55 pm	Next Steps	<i>Trish Rhay, Seattle Public Utilities</i>
8:00 pm	Adjourn	

Scoring for North Henderson Alternatives

Evaluation Criteria	Scores									
	Tunnel	Convey and Store (Orcas Pump Station + Tank in Martha Washington Park)	Complete Separation	Distributed Storage (comprised of one element from Basin 44 and one element from Basin 45 below)						Distributed Storage
				Basin 44: Tank in Seward Park	Basin 44: Pipe in Lake Washington Boulevard	Basin 44: Tank in Private Property	Basin 45: Tank in Martha Washington Park	Basin 45: Pipe in 57th Ave	Basin 45: Tank in Private Property	
I. Cost <i>(Life-cycle cost, includes capital and operations & maintenance costs)</i>	\$85.000	\$82.500	\$106.500	\$59.100	\$103.900	\$63.600	\$8.700	\$10.800	\$10.000	\$67.800
II. Maximize non-monetary value resulting from alternatives										
A. Increase open space in the neighborhood	1.0	1.0	1.0	1.0	1.0	3.0	1.0	1.0	3.0	1.0
B. Provides environmental benefit or limits impact to the environment										
b1). Provide comprehensive solution to all environmental needs (i.e. stormwater treatment and CSO)	1.0	1.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
b2). Create other environmental benefit (beyond water quality) or limit environmental impact	2.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
b3). Preserve tree quantity and quality	2.0	2.0	1.0	1.0	2.0	2.0	2.0	1.0	2.0	1.0
C. Limit short-term construction impacts										
c1). Disproportionate short-term impacts to property owners (noise, odor, visual, access to property)	2.0	2.0	1.0	3.0	1.0	2.0	3.0	1.0	2.0	3.0
c2). Short-term neighborhood traffic impacts including LW Boulevard	2.0	2.0	1.0	3.0	1.0	2.0	3.0	1.0	3.0	2.0
c3). Short-term park impacts	1.0	1.0	3.0	1.0	3.0	3.0	1.0	2.0	3.0	1.0
D. Preserve homes and private property	2.0	3.0	3.0	3.0	3.0	1.0	3.0	3.0	1.0	3.0
E. Preserve Park use and character of design										
e1). Preserve use of Martha Washington Park and character of park design	1.0	1.0	3.0	3.0	3.0	3.0	1.0	2.0	3.0	1.0
e2). Preserve use of Seward Park and character of park design	2.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0	2.0
e3). Preserve use of Lake Washington Blvd. and character of park design	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0
F. Limit impact from operation and maintenance (noise, odor, traffic, duration and frequency of maintenance and operation, scale of equipment)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

Community Evaluation Criteria for North Henderson Alternatives

		Performance Measures		
		Best=3	Medium=2	Worst=1
A. Increase open space in the neighborhood	Square feet of additional open space created resulting in increased accessibility and availability	Significant increase in open space	Moderate increase in open space	No increase in open space
B. Provides environmental benefit or limits impact to the environment				
b1). Provide comprehensive solution to all environmental needs (i.e. stormwater treatment and CSO)	To what level does the alternative provide a comprehensive solution for both stormwater treatment and CSO?	Alternative completely provides SW and CSO solutions	Alternative provides CSO remedy with some treatment	Alternatives provides CSO remedy with little treatment
b2). Create other environmental benefit (beyond water quality) or limit environmental impact	To what level does the alternative provide other environmental benefits or limit environmental impacts?	Alternative likely to result in environmental benefit beyond water quality	No noticeable effect on the environment other than water quality is anticipated	Alternative likely to result in environmental impacts that cannot be easily mitigated
b3). Preserve tree quantity and quality	Trees removed (number of trees, canopy area of trees removed)	Disruption will be minimal during construction and impacts could be easily mitigated.	Disruption will be high during construction but could be easily mitigated.	Disruption will be high during construction and cannot be easily mitigated.
C. Limit short-term construction impacts				
c1). Disproportionate short-term impacts to property owners (noise, odor, visual, access to property)	To what level does the alternative limit disproportionate impacts to property owners including: minimizing short term damage to individual properties; minimizing the	Disruption will be minimal during construction and impacts could be easily mitigated.	Disruption will be high during construction but most issues could be mitigated.	Disruption will be high during construction and cannot be easily mitigated.
c2). Short-term neighborhood traffic impacts including LW Boulevard	To what extent will vehicular mobility in the neighborhood be affected?	Disruption will be minimal during construction and impacts could be easily mitigated.	Disruption will be high during construction but could be easily mitigated.	Disruption will be high during construction and cannot be easily mitigated.
c3). Short-term park impacts	To what extent will the alternative impact park use?	Disruption will be minimal during construction and impacts could be easily mitigated.	Disruption will be high during construction but could be easily mitigated.	Disruption will be high during construction and cannot be easily mitigated.
D. Preserve homes and private property	To what level does the alternative impact private property?	No impact to Private Property	Some temporary impacts to private property	Private property is acquired for alternative
E. Preserve Park use and character of design				
e1). Preserve use of Martha Washington Park and character of park design	How well does the alternative minimize impact to Martha Washington Park, and improve character and design of park?	No impact to MW Park	Minor impact to MW Park	Permanent change in current use of park
e2). Preserve use of Seward Park and character of park design	How well does the alternative minimize impact to Seward Park, and improve character and design of park?	No impact to Seward Park	Minor impact to Seward Park	Permanent change in current use of park
e3). Preserve use of Lake Washington Blvd. and character of park design	How well does the alternative minimize impact to Lake Washington Blvd. and improve character and design Blvd.?	No impact to Lake Washington Blvd.	Minor impact to Lake Washington Blvd.	Permanent change in current use of park
F. Limit impact from operation and maintenance (noise, odor, traffic, duration and frequency of maintenance and operation, scale of equipment)	To what extent does the alternative limit impact from operation and maintenance, including: noise, odor, and traffic impacts; duration and frequency of maintenance and operation; and, scale of equipment used?	<p>The facility requires no operating staff or can be remotely operated. Peak staff times require < 1 operator. The facility can be shut down with minimal staff time. Cleanup work is automated or can be scheduled to be integrated with other staff duties.</p> <p>The facilities only require annual preventive maintenance. The processes have minimal mechanical/instrumentation components (i.e., storage tank). Reliable in intermittent use.</p>	<p>The facility can generally be remotely operated. An operator may need to be present periodically for sampling, chemical make-up, chemical delivery acceptance or other discrete tasks. Peak staff times require 1-2 operators. The facility can be shut down with minimal staff time. Cleanup work is generally automated; however, 1-2 personnel may be required.</p> <p>The facilities require monthly maintenance such as bumping pumps. The processes have an increasing level of mechanical/instrumentation components (i.e., pump station).</p>	<p>The facility requires operator attention during the event. Peak staff times require 2 or more operators. The facility requires significant effort for shut down (e.g., vac/boom truck, several days for cleanup). Cleanup work is generally manual with 2 or more personnel required for more than one day. Most procedures of shutdown need to be conducted immediately.</p> <p>The facilities require monthly maintenance such as bumping pumps. The processes have an increasing level of mechanical/instrumentation components (i.e., treatment facility). Equipment is prone to failure with intermittent use.</p>

SPU North Henderson CSO Reduction
Assign Relative Value Weight

Team _____

Instructions - Weight the relative performance of criteria by distributing 100 points among the criteria, and then distributing the criterion points among the sub-criteria

	Criteria Weight	Sub-Criteria Weights (portion of the criterion weight)
A. Increase open space in the neighborhood		
B. Provides environmental benefit or limits impact to the environment		
b1). Provide comprehensive solution to all environmental needs (i.e. stormwater treatment and CSO)		
b2). Create other environmental benefit (beyond water quality) or limit environmental impact		
b3). Preserve tree quantity and quality		
C. Limit short-term construction impacts		
c1). Disproportionate short-term impacts to property owners (noise, odor, visual, access to property)		
c2). Short-term neighborhood traffic impacts including LW Boulevard		
c3). Short-term park impacts		
D. Preserve homes and private property		
E. Preserve Park use and character of design		
e1). Preserve use of Martha Washington Park and character of park design		
e2). Preserve use of Seward Park and character of park design		
e3). Preserve use of Lake Washington Blvd. and character of park design		
F. Limit impact from operation and maintenance (noise, odor, traffic, duration and frequency of maintenance and operation, scale of equipment)		

Criteria Weights Must add to: 100

SPU North Henderson CSO Reduction
 Community Criteria Cross-Walk

Description	Mapping to Criteria in Model
• Limit disproportionate impacts to individual property owners (11)	C
• Preserve current use of park and character of park design (10)	E
• Minimize impact to Martha Washington Park (7)	E
• Create an environmental benefit or limit environmental impact. (4)	B
• Increase open space (3)	A
• Provide flexibility for future water quality projects (2)	B
• Manage stormwater on site (on every individual property) (2)	
• Maintain access to homes (2)	C
• Minimize cost (2)	
• Avoid tunneling- too risky (2)	
• Limit short term construction impacts (1)	C
• Long term vs. short term impacts to rate payer (1)	
• Preserve Olmsted Heritage (1)	E
• Minimize visual impact (1)	C
• Minimize impacts to Lake Washington Blvd. (1)	E
• Project should improve character and design of park (1)	E
• Limit impact from operation and maintenance (noise, traffic, duration and frequency of maintenance and operation, scale of equipment) (1)	F
• Provides comprehensive solution to all environmental needs (i.e. stormwater and CSO)	B
• Not just minimize impact. Improves neighborhood.	A
• Magnitude of impacts short term and long term	C
• Cost	
• Noise and odor	C
• Minimize traffic disruption	C
• Minimize damage/maximize compensation to private properties	D
• Tree preservation	B
• Provides best option for stormwater treatment	B
• Short term impact to parks (added by Parks Department)	C

APPENDIX C
Presentation

North Henderson Area Combined Sewer Overflow Reduction Projects



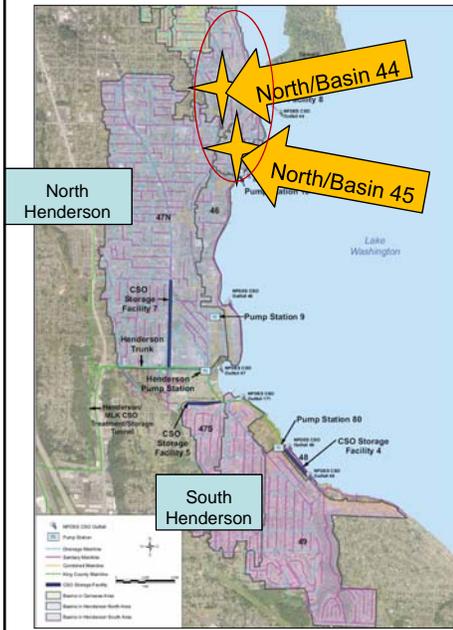
North Henderson
Community Meeting

January 19, 2011

AGENDA:

- I. Welcome & Workshop Overview (*Trish Rhay, Dan Speicher*)**
- II. Alternatives Presentation (*Andrew Lee*)**
- III. Work Groups (*Dan Speicher*)**
 - I. Community Criteria Weighting Exercise*
 - II. Scoring the North Henderson Alternatives*
- IV. Report Out (*Dan Speicher*)**
- V. Next Steps (*Trish Rhay*)**

Henderson CSO Basins



- 💧 Top-Priority for CSO reduction
- 💧 1,800 Acres
- 💧 Seven basins
- 💧 CSOs discharge approximately 17 times per year
- 💧 Construction projects to reduce CSOs must begin in 2015

North Henderson Workshops

💧 *November 18, 2010*

- Presented CSO reduction options (storage, transfer, separation, treatment)
- Obtained feedback to consider separation, inflow/infiltration reduction, and more innovative technologies to reduce CSOs.
- Obtained input on community values and concerns

💧 *December 14, 2010*

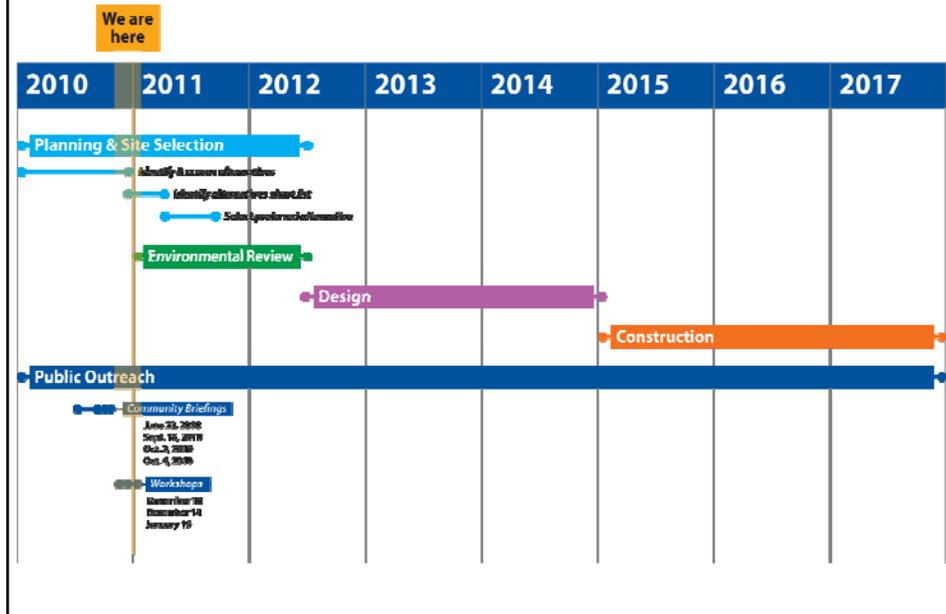
- Present site-specific CSO reduction alternatives
- Obtain feedback on alternatives
- Confirm evaluation criteria (i.e., community values and concerns)
- Weight relative importance of evaluation criteria

💧 *January 19, 2011 (Today)*

- Present results of alternatives evaluation
- Obtain feedback on results
- Narrow down site-specific alternatives



North Henderson Project Schedule



Multi-Objective Decision Analysis (MODA) Reduction Options- What it is

- Clearly defined, thorough decision support tool that captures stakeholders values
- A transparent approach for assessing the triple bottom line of a set of alternatives
- Clear communication and understanding of options
- Weighting exercises bring stakeholders values and policies into alternative evaluation

Rating of performance x weight = Decision Score

- A decision aide **NOT** a decision maker

MODA Example: Choosing a Car

1. Corvette	
2. Honda Accord	
3. Toyota Prius	
4. Ford F150 Pickup	

MODA Example: Choosing a Car Criteria and Performance Measures

Triple Bottom Line Goal	Environment - minimize the impact to the natural environment	Social - maximize social benefit					Financial
	ENV1	SOC1	SOC2	SOC3	SOC4	SOC5	FIN1
Criteria	Minimize air pollution and greenhouse gas emissions	Maximize exterior styling	Maximize safety	Maximize "fun" to drive	Maximize comfort in the interior	Maximize cargo capacity	Cost per mile
Measurement Scale	miles per gallon (mpg)	1-3; 3 is best, 2 is average, 1 is worst	1-3; 3 is best, 2 is average, 1 is worst	1-3; 3 is best, 2 is average, 1 is worst	1-3; 3 is best, 2 is average, 1 is worst	Cubic feet	Published life cycle cost

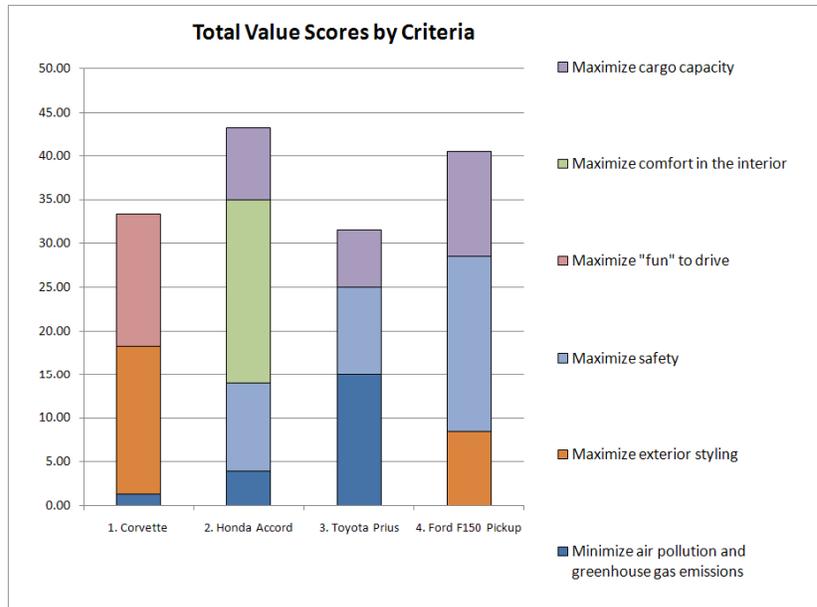
MODA Example: Choosing a Car Relative Value Weights

	Relative Value Weights (percent)					
	ENV1	SOC1	SOC2	SOC3	SOC 4	SOC 5
	Minimize air pollution and greenhouse gas emissions	Maximize exterior styling	Maximize safety	Maximize "fun" to drive	Maximize comfort in the interior	Maximize cargo capacity
Name						
Mom	25	5	30	5	20	15
Dad	5	25	20	30	5	15
Johnny	15	20	10	20	30	5
Mary	15	20	20	5	30	10
Consensus	15	17	20	15	21	12
Average	15.0	17.5	20.0	15.0	21.3	11.3

MODA Example: Choosing a Car Score How Well Options Meet Criteria

			Environment - minimize the impact to the natural environment	Social - maximize social benefit					Financial
			ENV1	SOC1	SOC2	SOC3	SOC 4	SOC 5	FIN1
			Minimize air pollution and greenhouse gas emissions (mpg)	Maximize exterior styling	Maximize safety	Maximize "fun" to drive	Maximize comfort in the interior	Maximize cargo capacity (cu ft.)	Cost per mile
Car Purchase Options	1. Corvette		19.0	3.0	1.0	3.0	2.0	22.0	\$1.10
	2. Honda Accord		25.0	1.0	2.0	1.0	3.0	45.0	\$0.57
	3. Toyota Prius		50.0	1.0	2.0	1.0	2.0	40.0	\$0.49
	4. Ford F150 Pickup		16.0	2.0	3.0	1.0	2.0	55.0	\$0.72

MODA Example: Stacked Bar Chart



MODA Example: Scatter Diagram



Summary of Alternatives

◆ Distributed Storage

- ◆ **Basin 44** (Storage under private property, Seward Park parking lot, or Lake Washington Blvd)
- ◆ **Basin 45** (Storage under private property, Martha Wahsington Park open space, or 57th Ave S.)

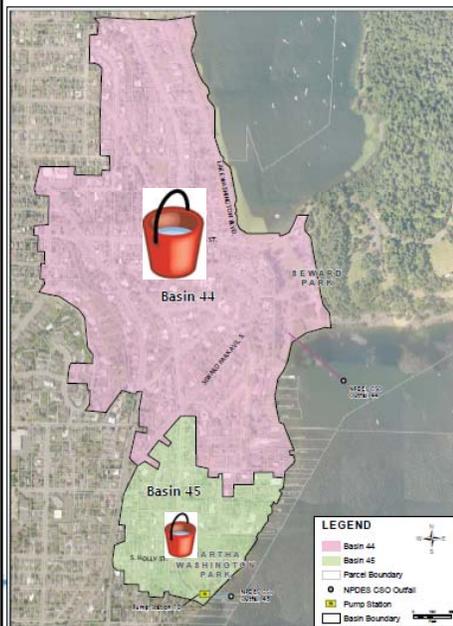
◆ Tunnel Storage

◆ Conveyance and Storage

◆ Complete Sewer Separation (*includes Inflow & Infiltration Reduction*)



Distributed Storage Alternative

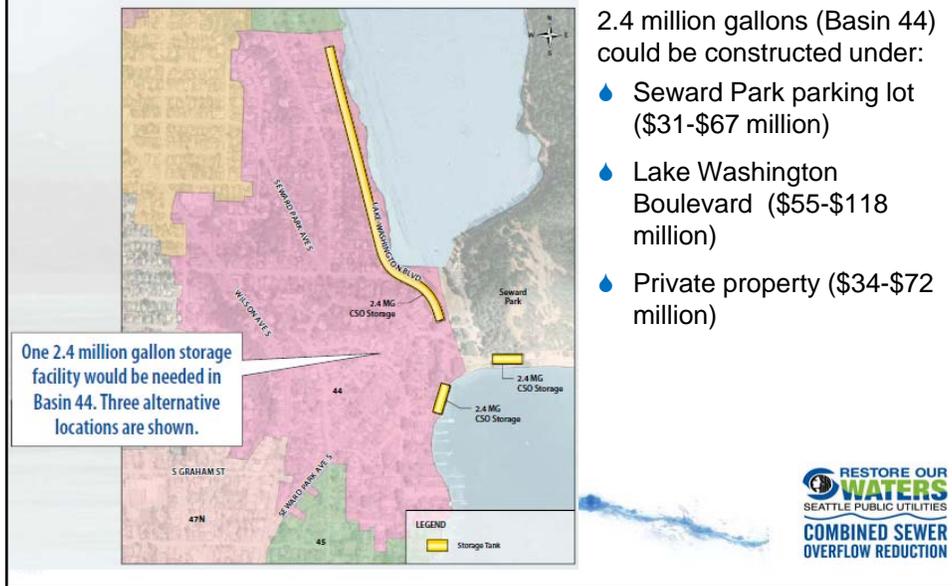


Construct two underground storage tanks to hold approximately 2.4 million gallons (Basin 44) and 200,000 gallons (Basin 45)

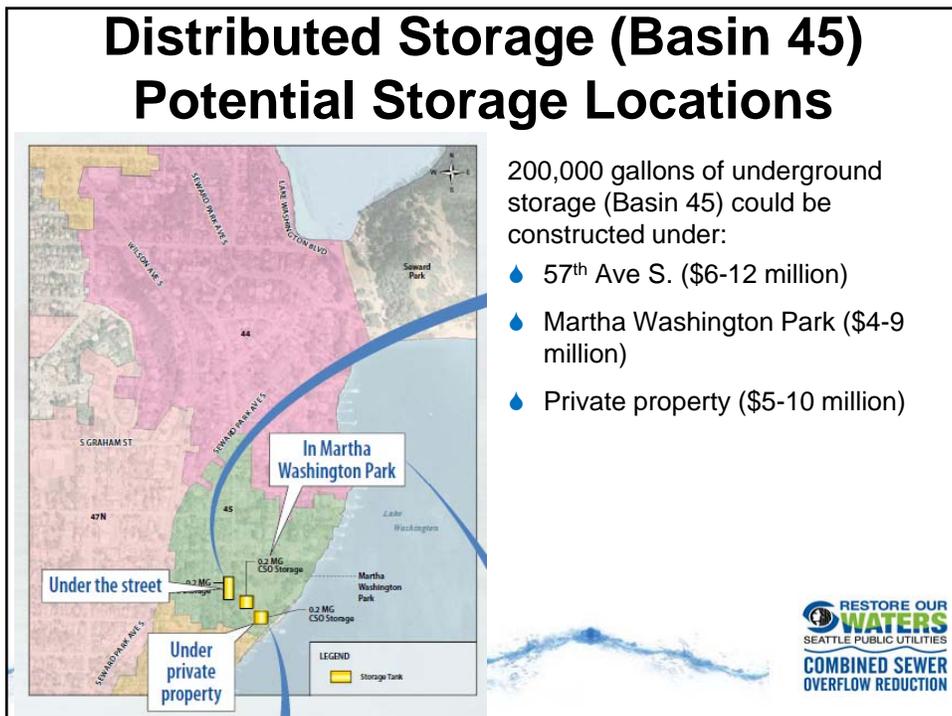
- ◆ Requires location in both Basin 44 and Basin 45
- ◆ Location could be under park, under street, or under private property
- ◆ Cost Range: \$35 - \$75 million



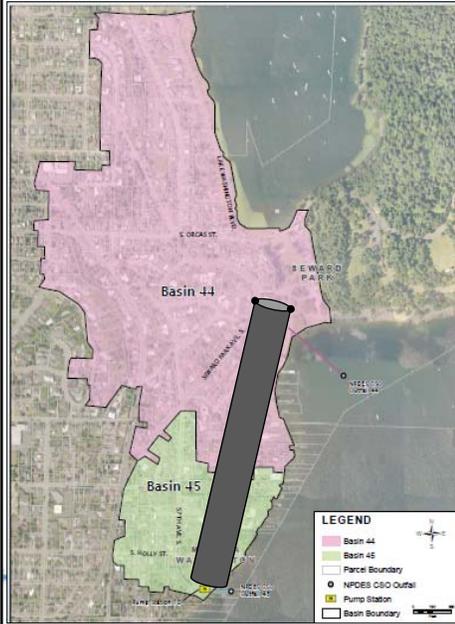
Distributed Storage (Basin 44) Potential Storage Locations



Distributed Storage (Basin 45) Potential Storage Locations



Tunnel Storage Alternative

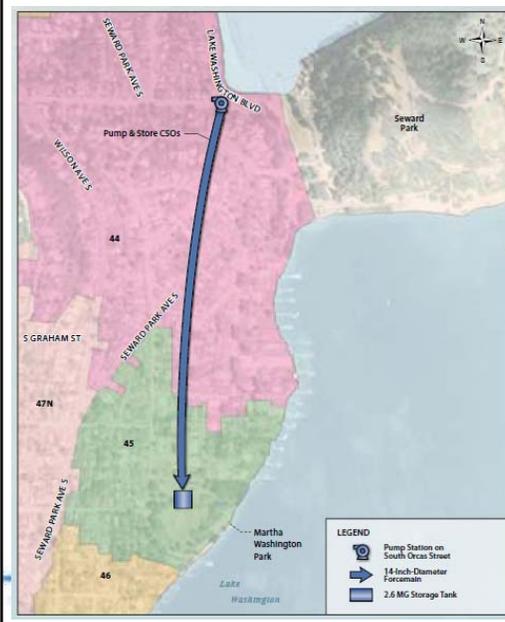


Store 2.6 million gallons in a tunnel underneath streets and private properties between Seward Park and Martha Washington Park

- ◆ Requires tunnel launch shaft and receiving shaft
- ◆ Inherent risks associated with tunneling technologies
- ◆ Cost Range: \$45 - \$96 million



Convey and Store Alternative

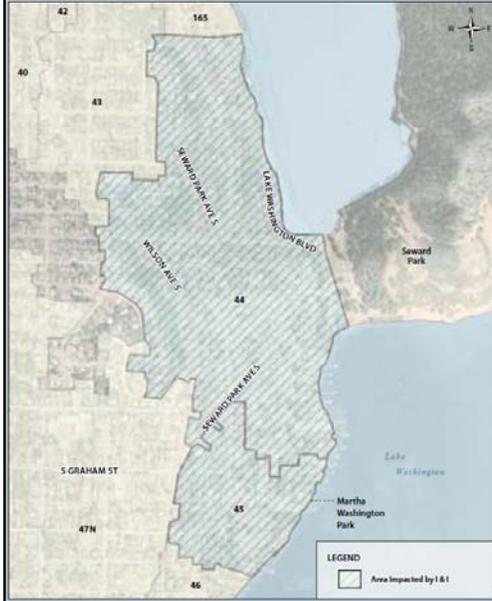


Send flows through a pipeline from Basin 44 to Basin 45 and store them in a 2.6 million gallon underground tank near Martha Washington Park

- ◆ May require new pump station
- ◆ Requires conveyance piping
- ◆ 2.6 million gallon underground storage tank could be located in park or underneath private properties
- ◆ Cost Range: \$43 - \$92 million



Complete Separation Alternative (Includes Inflow & Infiltration Reduction)



Prevents stormwater runoff and groundwater from entering the combined system. Requires:

- ◆ Sewer main replacement
- ◆ Side sewer replacement
- ◆ Roof leader disconnection
- ◆ New storm lateral or raingarden (if feasible)
- ◆ Storm main extensions
- ◆ Stormwater treatment

Requires **75% participation** in Basin 45

Requires **100% participation** in Basin 44

Cost Range: \$57 - \$122 million

Work Groups



Next Steps

- ◆ Design Charettes (*Spring/Summer 2011*)
- ◆ EIS Scoping Notification (*Spring 2011*)
- ◆ Draft EIS and Announcement of Preferred Alternative (*Fall/Winter 2011*)

Contact Information

Project updates will be sent ongoing to those that signed up to be on the listserv
(sign-up in back)

**PLEASE SEND US YOUR COMMENTS
AND QUESTIONS:**

SPU_HCSO@Seattle.gov (Henderson)

206-826-4767

www.seattle.gov/CSO