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Meeting Agenda

Barton, Murray, Magnolia, North Beach CSO Facilities Project

E00022E06

King County Department of Natural Resources and Parks
Wastewater Treatment Division

Date of Meeting: August 5, 2009 **Work Order No.:** 7562A.10

Time: 1 pm

Location: KSC 8th Floor Conference Center

Purpose: CSO Control Alternatives Development
Barton/Murray Basin CSO Control Alternatives

Meeting # 100-49

Anticipated Attendees

County		Consultants
John Cameron	Shaun O'Neil	Kevin Dour
Betsy Cooper	Sekhar Palepu	Bob Eimstad
Hien Dung	John Phillips	Karl Hadler
Pam Erstad	Kevin Sandquist	Jeff Lykken
Mary Beth Gilbrough	Mike Sand	Brian Matson
Karen Huber	Kevin Schock	Allen de Steiguer
Ron Kohler	Bob Swarner	
Kathy Mathena	Martha Tuttle	**SPU**
Sue Meyer	Mary Wohleb	Sahba Mohandessi
Lee Miller	Monica Van Der Vieren	
Ukwenga Oleru	Karl Zimmer	

Meeting Purpose:

1. Summarize input from July 21 CSO team meeting and July 29 meeting with Seattle Parks.
2. Review alternatives development and evaluation strategy and overall process.
3. Review alternatives developed for Barton/Murray basins.
4. Obtain additional feedback from CSO team.

Topic	Time	By
Introduction	10 min	S. Namini
Alternatives Development Process Review • Summary of input from CSO team and Seattle Parks • Strategy considerations for CSO alternatives development • CSO alternatives development and evaluation process • Schedule moving forward	35 min	B. Matson B. Eimstad

Barton Basin • Basis of design (technical requirements) • Technically viable CSO control Approaches • Configurations impacting potential sites • Minimum site requirements • Matching CSO control approaches and configurations to potential sites • Questions	45 min	K. Dour J. Lykken
Murray Basin • Basis of design (technical requirements) • Technically viable CSO control Approaches • Configurations impacting potential sites • Minimum site requirements • Matching CSO control approaches and configurations to potential sites • Questions	45 min	K. Dour J. Lykken
Summary/Action Items	10 min	S. Namini B. Matson

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Meeting Notes

Barton, Murray, Magnolia, North Beach CSO Facilities Project

E00022E06

King County Department of Natural Resources and Parks
Wastewater Treatment Division

Date of Meeting:	August 5, 2009	**Date of Notes:**	August 6, 2009	**Work Order No:**	7562A.10

Time: 1:00 pm

Location: King Street Center 8th Floor Conference Room

Purpose:
1. Summarize input from July 21 CSO team meeting and July 29 meeting with Seattle Parks.
2. Review alternatives development and evaluation strategy and overall process.
3. Review alternatives developed for Barton/Murray basins.
4. Obtain additional feedback from CSO team.

Meeting # 207-1 - CSO Control Alternatives Development
Barton/Murray Basin CSO Control Alternatives

Attendees:

County		Consultant
Shahrzad Namini	Shaun O'Neil	Kevin Dour
Betsy Cooper	Sekhar Palepu	Bob Eimstad
Chris Okuda	John Phillips	Karl Hadler
Bill Wilbert	Kevin Sandquist	Jeff Lykken
Wes Sprague	Kevin Schock	Brian Matson
Kathy Mathena	Bob Swarner	Bob Wheeler
Sue Meyer	Martha Tuttle	Ellen Blair
Lee Miller	Mary Wohleb	Lisa Adolfson
Ukwenga Oleru	Monica Van Der Vieren	Regina Raichart
Josho	Karl Zimmer	

SPU
Sahba Mohandessi

Distribution: Attendees, Allen de Steiguer, Hien Dung, Pam Erstad, Ron Kohler, Mary Beth Gilbrough

ACTION ITEMS

Item #	Action	Action By	Due By
1	Review the schedule and determine where input from the advisory board is required. Include this work in the schedule so that input is received at the appropriate time.	Matson	9/2/09
2	Look at revising the process schematic or providing more definition to prevent revisiting criteria and alternatives at a set point.	Matson	8/19/09

3	Update schedule information to reflect facility plan deadline and new dates for Workshop No. 1 and 2.	Matson	8/19/09
4	Document how you determined the sites and the flexibility with siting options. Site technical reasons such as topography and show areas that meet the minimum requirements rather than a single site.	Kevin Dour/ Allen de Steiguer/ Karl Hadler	8/11/09
5	Illustrate the focus area for alternative development on graphics and summaries and document why.	Kevin Dour/ Allen de Steiguer/ Karl Hadler	8/11/09
6	Determine if there are any feasible alternatives with storage in Subbasin B_8.	Kevin Dour	8/19/09
7	Determine whether the storage volume required assumes that flows go to West Point or if a portion of the flow pumped out of storage goes to wet weather facilities such as Alki.	Kevin Schock/ Ed Wicklein	9/2/09
8	Document the O&M requirements for approaches including frequency of use and duration of use.	Kevin Dour/ Allen de Steiguer/ Karl Hadler	8/11/09
9	Confirm the diameter of the existing outfall at Barton.	Kevin Dour	8/11/09
10	Provide comments on Barton Basin alternatives to Shahrzad.	Team	8/10/09

DISCUSSION

1. Alternative Development Process Review
    a. Public Participation
        i. Need to define the problem and present approaches (e.g. storage, peak flow reduction, etc.) for the public before we present the alternatives so they have an understanding of what we are trying to solve and the infrastructure options available to address the problem.
        ii. The public participation process needs to account for the political sensitivity of the work within these basins.
        iii. Public participation will occur throughout the alternative development and evaluation process.
    b. Advisory Board
        i. An advisory board will be assembled within King County to provide recommendations and guidance on big picture policy and political issues.
        ii. The project will require input from the advisory board at key milestones throughout the project. The technical schedule will be looked at with respect to the advisory board and public participation efforts to see where we need input and when so that information is not received too late.

c. The Brightwater siting process did not include a process with feedback loops to adjust criteria. The project needs to reach a point where criteria and alternatives are fixed so the evaluation does not enter into a constant "do loop". The team will look at revising the process or providing more definition to prevent revisiting criteria and alternatives at a set point.

d. King County Review

   i. The next meeting (scheduled for August 11) will allow the team to provide additional feedback on the alternative development process as well as the initial Barton alternatives.

   ii. Provide comments focusing on:

      1. Is the range of alternatives complete?

      2. Are there additional alternatives we are missing?

      3. Are there alternatives that should be eliminated because of a fatal flaw?

e. Schedule Updates

   i. Update presentation graphic to reflect facility plan deadline of December 31, 2010.

   ii. Workshop No. 1 and 2 will be scheduled in December 2009 to provide more time for public participation and detailed evaluation of the final three alternatives.

f. Storage Volume Calculations

   i. Determine whether storage volume required assumes that flows go to West Point or if a portion of the flow pumped out of storage goes to wet weather facilities such as Alki.

   ii. Alki is permitted to treat and discharge more total volume (longer duration) than it sees today, however, there is no more capacity at peak times.

2. Barton Basin Control Alternatives

   a. See attached handout showing the initial alternatives matrix and summaries.

   b. Alternative Development Phase

      i. Flow monitoring centered attention around the trunk sewer that runs along Director Street in the Barton Basin since this carries a significant portion of the basin flow. Murray flows are spread throughout the basin so that the focus for alternatives really becomes the bottom of the basin to capture enough flow. Consultant to illustrate the focus area on graphics and summaries and document why.

      ii. Document how the sites were determined and the flexibility with siting options. Note technical reasons such as topography and show areas that meet the minimum requirements.

   c. Barton Alternative Summaries

      i. Determine if there are any feasible alternatives with storage in Subbasin B_8.

      ii. The technical summaries provided for each alternative are an initial starting point for the evaluation process and provide basic information to the team. The team should provide comments and clarifications on the summaries, however, these will continue to be developed as the team evaluates the nine alternatives in the next step of the process.

iii. Alternative 1B would provide management of overflows for the entire basin, however, modeling may show that slightly more than 110,000 gallons of storage is required to relieve the peak flows from other locations to the Barton Pump Station.

iv. There will be disruption to the ferry terminal for bottom of the basin options. Potential issues include staging, trenching, etc. One lane of traffic will be closed for the Barton Pump Station improvements. The community has not had too many issues with improvements to the Barton Pump Station.

v. There are cultural resource issues associated with the site shown in Alternative 1E.

vi. Consultant will document the O&M requirements for alternatives including frequency of use and duration of use.

vii. No new outfalls are anticipated. The existing outfalls are assumed for end of pipe treatment approaches. Confirm the diameter of the existing outfall at Barton.

viii. Peak Flow Reduction Alternative

1. Pipes in alleys are not desirable. SPU prefers utilities in streets for a number of reasons. Peak flow reduction options would also be trying to capture flows on the streets. Therefore, MS4 development is assumed to be within the streets and not in alleys.
2. MS4s are assumed to connect to the existing system in an adjacent basin. The evaluation process will need to look at the capacity of those systems, outfall locations and impacts, etc. to determine the feasibility of this approach.
3. No treatment is assumed for disconnected area flows. This assumption would need to be confirmed during detailed evaluation.
4. Approximately 665 rooftops and associated right of way would need to be disconnected in the Barton Basin to eliminate the need for storage. The evaluation process needs to consider the disruption to homeowners and streets during construction.

END OF NOTES
CSO Control Alternatives Development
Barton/Murray Basin CSO Control Alternatives
8/06/09

SELECTION CRITERIA
Parcels greater than or equal to 0.5 acres
Parcels not SFR or MFR
Vacant land or open space
Slopes not greater than 10%

Legend

- Barton Sub Basins
- 10 ft Contour
- Street ROW
- Screening Sites

Barton Basin

B_5

B_8

B_6

B_2

SW AUSTIN ST
SW KENYON ST
SW KENYON PL
SW MONROE ST
SW HEMLOCK WAY
SW ROSE ST
TILLICUM RD SW
SW CLOVERDALE ST
SW DONOVAN ST
SW TRENTON ST
SW CONCORD ST
SW HENDERSON ST
SW DIRECTOR ST
SW DIRECTOR PL
SW WILDWOOD PL
SW BRACE POINT DR
SW FLETCHER ST
SW CAMBRIDGE ST
SW ROXBURY ST
SW ROXBURY PL
SW 97TH ST
SW 98TH ST
SW 101ST ST
SW 102ND ST
SW 104TH ST
SW MYRTLE ST
SW WEBSTER ST
SW HOLDEN ST
SW ELMGROVE ST
SW SOUTHERN ST
SW THISTLE ST
SW SULLIVAN ST
SW TILLMAN ST
SW BERNICE PL
SW BARTON ST
SW OTHELLO ST
SW 99TH ST

44TH PL SW
46TH AVE SW
45TH AVE SW
44TH AVE SW
41ST AVE SW
CALIFORNIA AVE SW
NORTHROP PL SW
43RD PL SW
42ND AVE SW
40TH AVE SW
39TH AVE SW
38TH AVE SW
37TH AVE SW
35TH AVE SW
34TH AVE SW
32ND AVE SW
31ST AVE SW
30TH AVE SW
29TH AVE SW
FAUNTLEROY PL SW
VASHON VIEW SW
CALIFORNIA DR SW
FOREST CT SW
KILBOURNE CT SW
MARINE VIEW DR SW
50TH AVE SW
49TH AVE SW
48TH AVE SW
47TH AVE SW
45TH AVE SW
44TH AVE SW
43RD AVE SW
41ST AVE SW
40TH AVE SW
39TH AVE SW
37TH AVE SW
35TH AVE SW

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SCALE IN FEET

TETRA TECH

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King County

Barton Basin Final Results

ALTERNATIVE DEVELOPMENT PHASE				
			Barton Basin	**Murray Basin**
CSO Control Approach	**Configuration**	**Minimum Requirements for Potential Sites**	**Design Requirements:** • 110,000 gallon storage or • 26 acres effective disconnection	**Design Requirements:** • 1.0 mg storage or • 28.5 mgd conveyance or • Up to 10 acres effective disconnection to reduce 300,000 gallons of storage
1. Convey & Treat	Peak flow pump station, pipeline to existing treatment facility	• Flat (< 5%) open space near existing CSO • Outside public Right-of-Way • Sized for peak flow pump station	Cannot increase conveyance capacity out to Murray Basin	Alternative 2-K Convey and Treat
2. Centralized/Distributed Storage				
A. Bottom of Basin	Rectangular/Circular Tank	• Flat (< 5%) open space near existing CSO • Outside public Right-of-Way • Size dependent on storage volume	Alternative 1-A Rectangular Storage Alternative 1-A Circular Storage Alternative 1-C Circular Storage	Alternative 1-G Rectangular Storage
	Linear (in-line) Pipe	• Linear, flat (< 5%) open space near existing CSO • Inside or outside public Right-of-Way • Minimum 12-feet wide • Length dependent on storage volume	Alternative 1-A Pipe Storage Alternative 1-D Pipe Storage Alternative 1-E Pipe Storage	
	Deep Tunnel	• Flat (< 5%) open space near existing CSO • Flat (<5%) open space at access shaft (location dependent on storage volume) • Both sites outside public Right-of-Way		Alternative 1-J Pipe Storage
B. "Up-Basin"	Rectangular/Circular Tank	• Flat (< 5%) open space • Outside public Right-of-Way • Size dependent on storage volume	Alternative 1-B Rectangular Storage	Alternative 1-H Circular Storage
	Linear (in-line) Pipe	• Linear, flat (< 5%) open space • Inside or outside public Right-of-Way • Minimum 12-feet wide • Length dependent on storage volume		
3. End of Pipe Treatment				
A. Bottom of Basin	New high rate treatment facility	• Flat (< 5%) open space near existing CSO • Outside public Right-of-Way • Sized for treatment plant facilities and access	Alternative 3-A – End of Pipe Treatment	Alternative 3-G – End of Pipe Treatment
B. "Up-Basin"	Peak flow pump station, pipeline to new high rate treatment facility	• Flat (< 5%) open space near existing CSO, sized for peak flow pump station • Flat (<5%) open space at treatment plant location, sized for treatment plant facilities and access • Both sites outside public Right-of-Way		
4. Peak Flow Reduction				
A. Stormwater Disconnection	Disconnection of impervious areas (roof drains and catch basins) with stormwater re-routed to new or existing MS4.	• Available impervious area for disconnection • Inside or outside public Right-of-Way	Alternative 4-F – Stormwater Disconnection	Cannot achieve CSO control through disconnection alone in available CSO subbasins.
B. Green Stormwater Infrastructure (GSI)	Implementation of GSI techniques to limit stormwater response to rainfall	• See GSI analysis for constraints	TBD	TBD
5. Combined Approach				
A. Storage and Stormwater Disconnection	Disconnection of impervious areas to achieve reduction in required storage volume.	• See Approach 2 and Approach 4 above.	Can eliminate need for storage through disconnection in CSO sub-basin.	Alternative 5-J/L Combined Storage with Disconnection
NOTES:				

BARTON BASIN
INITIAL ALTERNATIVES MATRIX

Control Approach		Site Locations						Notes
		A	B	C	D	E	F	
	Location	8923 Fauntleroy Way SW and SDOT Street ROW Area	9131 California Ave SW	Fauntleroy Ferry Parking Lot	Fauntleroy Ave SW	Fauntleroy Ave SW and SW Director Street	Sub Basin B_8	
	Current Use	Residential / ROW	School	Public Use	Street ROW	Street ROW	Residential	
1. Peak Flow Storage								
	"Rectangular Storage"	X						140' long x 15' wide x 15' deep rectangular storage tank. The storage tank would be located in the property adjacent to the Barton PS and the odor control and electrical/controls building would be located partly on the property and on the SDOT street right-of-way. Tight shoring limits as the residential property is approximately 35 feet wide.
			X					65' long x 55' wide x 15' deep rectangular storage tank. Storage site tributary to 50% of peak flows. Requires diversion of 50% peak flow and portion of dry weather flow to the new storage tank to relieve demand at Barton Pump Station. Divert flows by gravity in to the storage tank and release after the peak flow event. Peak flow modeling should be performed to confirm separation of peak and average flows at this site.
	"Circular Storage"	X		X				40' Diameter, 24' deep circular caisson storage tank.
	"Pipe Storage"	X			X	X		12' diameter, 150' long reinforced concrete pipe storage.
2. Convey and Treat								
	Peak Flow PS near existing Barton PS and convey to Murray PS. Storage /treatment /conveyance near Murray PS							It is not cost effective to pump peak flows from Barton PS to Murray PS and provide storage/treatment/conveyance.
3. End of Pipe Treatment								
	Bottom of Basin Treatment	X						120' long x 60' wide x 15' deep, 12 MGD capacity Actiflo high rate treatment facility.
4. Stormwater Flow Reduction								
	Roof Top and ROW Impervious Area Disconnection						X	About 26 acres of impervious area (roof and street ROW area) has to be disconnected to eliminate the peak storage volume. By adding new storm sewer system and converting existing combined sewer to sanitary sewer system in sub basin B_8 (sub basin 416 from GIS Report) , peak flow could be reduced with out adding a storage tank.