

**Murray Basin Combined Sewer Overflow Project  
Community Advisory Group**

**Meeting 3 Summary  
Final**

**Prepared for  
King County Wastewater Treatment Division**

**July 13, 2010**



**King County**

Department of Natural Resources and Parks  
**Wastewater Treatment Division**

**Prepared by**

 **EnviroIssues**

The logo for EnviroIssues, consisting of a vertical stack of three squares (top: light green, middle: dark green, bottom: black) to the left of the word "EnviroIssues" in a bold, green, sans-serif font.

101 Stewart Street – Suite 1200  
Seattle, WA 98101  
(206) 269-5041

## Meeting Information

Meeting #3

Thursday, July 8, 2010

6:00 – 8:00 p.m.

Fauntleroy Community Services Agency Building (Old Fauntleroy School)  
9131 California Ave SW

## Attendance

CAG members

- Bill Beyers
- John Comick
- Linda Cox (alternate for Scott Gunderson)
- Kate Dee
- Chris Jansen
- Vlad Oustimovitch, Fauntleroy Community Association
- Chas Redmond, Morgan Community Association
- Donna Sandstrom
- Don Stark
- Ron Sterling
- Linda J Sullivan (King County WTD)

Facilitation team

- Penny Mabie (EnviroIssues)
- Amy Meyer (EnviroIssues)

WTD Staff and Consultants

- Martha Tuttle (King County WTD)
- Mary Wohleb (King County WTD)
- Kevin Dour, Tetra Tech
- Bruce Kessler (King County WTD)
- Bob Swarner (King County WTD)

Also in attendance

- Andrew Lee, Seattle Public Utilities, Presenter
- Cindi Barker
- Donna Davis

## Welcome and Introductions

Penny Mabie, meeting facilitator, welcomed participants to the third Community Advisory Group (CAG) meeting and thanked everyone for their attendance. Penny led a round of introductions and provided a brief overview of the agenda and meeting materials. Meeting goals and objectives are listed below:

- Finalize meeting #2 summary
- Ensure understanding of SPU CSO approach and their coordination with King County's program and goals
- Ensure understanding of how King County measures CSO overflows and determines CSO storage sizing needs

- Ensure understanding of the technical constraints and criteria applied by the County to Barton and Murray alternatives to prepare for guiding principles discussion in the future
- Review the CAG's work plan, key questions, and information needs

## Meeting 2 Review

Penny noted two corrections to the June 24<sup>th</sup> meeting summary. The summary will be made final and will be posted to the King County website.

Penny provided a recap of the discussion and action items from the second CAG meeting. The Meeting Calendar was posted; however, it has since been modified and will be re-posted after this meeting. The topics and schedule list has been updated and sent to the group. The Operating Guidelines have been revised, finalized and distributed. A CAG Google Group site has been created and invitations have been sent to CAG members. ([http://groups.google.com/group/murray\\_cag](http://groups.google.com/group/murray_cag)) King County approved the suggestion that the Google group be open to the public to post and view content. The web address to access the Google Group site will be present on agendas and on King County's website. Penny reviewed the Google Group tutorial which explains the login procedure and functionality of the website and invited the CAG to begin discussions online.

## Questions and Discussion

- Cindy Barker asked that packets of materials be distributed to the non-CAG members in the audience. (Materials were distributed to the audience.)
- Bill Beyers was concerned that Chris Jansen's community-suggested alternative was misinterpreted as three separate alternatives instead of one. Chris confirmed this misinterpretation.
  - Penny requested that Chris send language to clarify his suggestion so that it is captured correctly.

**ACTION:** Correct the Community Suggested Alternatives document to reflect Chris Jansen's suggestion.

## Seattle Public Utilities CSO Program Presentation

Andrew Lee, Seattle Public Utilities CSO Program Manager introduced himself and explained SPU's five-year plan, and their cooperation with King County's CSO program. He reviewed SPU's program goals and their CSO Reduction Plan which can be viewed online at [www.seattle.gov/cso](http://www.seattle.gov/cso). Using a map to illustrate locations of City versus County CSOs, Andrew stated the historical explanation of the jurisdictional determination which states that infrastructure accounting for greater than 1000 acres is under the management of King County, and less than 1000 acres is managed by the City. Andrew also explained how SPU and the County work together on CSO projects via joint modeling, sharing of key technical assumptions, identifying opportunities for joint projects where feasible and cost-effective, and finally in consideration of boundary conditions and hydraulic limitations.

Andrew addressed the siting strategy for any major wastewater facilities, wherein preference for siting is most favorable on public right-of-way land. He reviewed SPU's public involvement strategy and explained key components of SPU's five-year CSO reduction strategy. The strategy includes the following elements:

*Retrofitting* - Updating existing equipment to its maximum capacity. This is a primary option due to affordability and speed of implementation.

*Storage* - Construction of three large storage facilities is ongoing for Genesee, Henderson, and Windermere basins, each of which were illustrated and described in detail.

*Green stormwater infrastructure* - The utilization of natural filtration techniques via roadside rain gardens. Pursuit of this option is currently aggressive in Ballard, north of 65<sup>th</sup> Street.

## **Questions and Discussion**

- Chris Jansen asked how the topography of the Murray Basin area compared to that of Ballard.
  - Andrew explained that Ballard's fully-combined sewers, relatively flat topography, and soil infiltration characteristics make it an ideal site for green stormwater infrastructure.
- Bill Beyers asked if there was any opportunity for green stormwater infrastructure in the Murray Basin area in locations that are fully combined.
  - Andrew confirmed that there may be an opportunity for green stormwater infrastructure in those areas, but details are unknown.
- John Comick asked what the cost comparison is for green stormwater infrastructure versus retention.
  - Andrew explained that on average green stormwater infrastructure can be \$20/gallon, where storage ranges from \$10-\$30/gallon.
- In reference to the Henderson CSO Reduction project, Chas Redmond asked where the SPU system connects with the County system, and if there is any opportunity for green stormwater infrastructure at those points.
  - Andrew responded that pipes route to the Henderson pump station and pump westward. Green infrastructure opportunities may be limited due to partial separation of sewer and stormwater pipes and a history of low public participation.
- Donna Sandstrom expressed her congratulations to SPU for encouraging green stormwater infrastructure, but wondered how confident SPU is in their estimates of gallons. She suggested that there is potential for increased participation in these types of program if participants were rewarded with decreased water rates.
  - Andrew explained that the error could be  $\pm 50\%$  due to unknowns such as sewer leaks, and that these projects are phased and monitored closely to check all of those assumptions. He also stated that effectiveness of this technology in one basin may not translate to another basin.
- Chris Jansen asked for confirmation that the reason King County WTD manages the Murray Basin area is because of that historical determination that the area was over 1000 acres.
  - Andrew confirmed Chris' statement.
- Linda Sullivan stated that King County WTD has been aggressively considering green stormwater infrastructure for CSO solutions. Any delays in execution of these programs come from site-specific constraints such as steep slopes.
  - Andrew stated, as Linda suggested, green stormwater infrastructure is limited to the most ideal locations currently, and Ballard conveniently fits the criteria.

- Chris Jansen gave an example of a flooding problem at SW Graham Street which is allegedly not being solved because of the jurisdictional issues.
  - Andrew asked for the address of that specific flooding problem.
  
- Chas Redmond asked if there is shared funding for joint projects between the County and the City, and if there are opportunities where it is more cost-effective for one agency to pay for a project rather than the other. He also noted that the separation in agencies is counter-intuitive to efficiency, and that the governance of wastewater treatment should be parallel to Seattle's transit cooperation.
  - Andrew explained that County and City rates are different and each agency has its own specific budget. Linda Sullivan explained that interagency agreement on project selection is possible and compelling, but that the differences in the agencies' rate structures and finances must be considered.
  
- Chris Jansen noted that it will be difficult to reach a long-term solution for Murray Basin CSO without considering the sewer separation/non-separation issue and the relationship between the City and the County systems.
  
- Bill Beyers asked what the criteria were for the decision for the County to manage areas with more than 1000 acres of infrastructure. He also asked about the possibility of separating the combined sewer systems.
  - Andrew explained that a Metro study was completed in 1957 when the County system was being planned. It was at this time that the 1,000 acre criteria were developed. He was not aware of the rationale behind the allocation of responsibilities between the City and Metro. The reason Metro was set up back then was to restore the water quality in Lake Washington.
  - In the 1970s, many CSO systems were being separated with new storm drain construction. It was realized that the stormwater entering bodies of water was not clean, but rather contaminated with high levels of metals, PCBs, etc. Since stormwater treatment technology does not remove some of the more concerning contaminants, the City made a decision in the 1980s to move away from stormwater separation and move towards using storage instead to address CSO issues.
  
- Don Stark asked about the relationship between SPU's activity and the Murray Basin CSO project in the vicinity.
  - Andrew explained that SPU has a basin 2-3 blocks long, which is small and is therefore under SPU's jurisdiction and not the County's. This small basin is near the mouth of Fautleroy Creek and has a City CSO in it. A City pump station captures water from that small area and pumps it to Barton pump station, where it then goes on to the Murray Pump Station. The City is retrofitting the infrastructure to address the CSO there. No additional flow will be conveyed to King County from this basin as a result of the retrofit.
  
- Vlad Oustimovitch discussed some limitations on green stormwater infrastructure, such as construction impacts to residents and condition of old roof drain and basement drain connections and warned the group to be cautious thinking of green infrastructure as a magic bullet. He suggested a map of optimal areas for green stormwater infrastructure should be developed.

- Andrew stated that a map with that purpose has already been created and he would distribute it to the group.

**ACTION:** Distribute map of optimal green stormwater infrastructure locations with parameters such as soil contamination, slopes, infiltration, etc.

- Donna Sandstrom stated that the burden is on SPU to tell the community the relationship between the Murray Basin CSO, their backyard, and the wildlife they care about in the Puget Sound. She suggested that people are not disinterested in nature, but that the connection has not been made for them, and that's why participation in green stormwater infrastructure programs may be low.

## **CSO Project Data Assumptions**

Bruce Kessler, Manager of Engineering and Technical Resources for King County, introduced his presentation and colleague Bob Swarner, a Professional Engineer and Modeling & GIS Supervisor for King County. Bruce explained the process for creating a CSO model for use in designing CSO control facilities. The model is calibrated with historical flow data and rainfall records, so that the model estimates closely match actual data. Bruce explained that this model technique is standard in the industry for designing CSO control facilities. He explained that overflows predicted by models were lower than the numbers from actual overflows reported to the Department of Ecology because the models are used to estimate long-term system response as opposed to estimating specific events. When calculating overflows, specific data relative to the event is collected and evaluated. Sometimes the specific events exceed the assumptions used in the model, such as a power failure, pump breakdown, or other unanticipated system failure.

Bruce also explained that overflow volumes are not directly measured at the Murray Pump Station, due to the difficulty of installing and maintain monitoring equipment on the outfall. Therefore, overflows are estimated based on weir length and the water level above the weir, which is measured using a bubbler system. The challenges in estimating overflows from the Murray Basin include a very long weir length, which allows a lot of variation in calculations; a bubbler system accuracy of 0.1 foot; tidal influence; and pipe friction.

### **Questions and comments:**

- Ron Sterling asked where to find the rainfall data they have been using, as he was concerned that the data was not specific to West Seattle.
  - Bob Swarner said he would locate those records and rain gauge locations.

**ACTION:** Locate and distribute rain records and locations of rain gauges used to create the CSO models.

- Bill Beyers stated that marginal storage of overflow is roughly only 3 percent of the storage facility's proposed maximum capacity.
  - Bob Swarner explained that the overflow is driven by intense rainfall volumes in a short period of time, and storage cannot accommodate these volumes. The volume that needs to be stored is 1 million gallons, but this occurs over about a 1 hour period. The total peak flow in a 1-year event is about 82 mgd. So the peak flow rate that needs to be captured is 41 mgd, in addition to the 31.5 mgd assumed to be pumped by the Murray Avenue Pump Station.

- Ron Sterling read data from reports sent to the Department of Ecology and asked why the data being presented is less than the historical records reported.
- Ron Sterling asked about the second pipeline installed between Barton and Murray, and didn't that result in much more overflow volumes being pumped to Murray.
  - Bob explained that the original pipe (that had to be repaired) was a 30" pipe (editor note: Bob mistakenly said it was a 36" at the CAG meeting). To repair it, the pipe was sliplined with a 24" pipe. A second 24" pipe was also constructed to bring the capacity back up to approximately the same capacity as the original 30" pipe. Also, he explained that those pipes are force mains and are kept constantly full, so they don't add additional flow during peak events.
- Kate Dee asked if the difference between the modeled overflow events and actual, reported overflow events was because the model assumes everything in the system is working exactly right; whereas actual overflows respond to differing conditions.
- Bill Beyers requested a memo to explain the discrepancy in the data.

**ACTION:** Have King County provide an explanation for the discrepancy in data reported to the Department of Ecology versus the model data presented.

- Chris Jansen stated that the CAG has been operating in a vacuum, lacking the information needed to make informed decisions. He reiterated their need for information such as position of flow meters and data from gauges.
  - Linda Sullivan agreed to locate and distribute this information.

**ACTION:** Locate and distribute information such as flow meter positions and data from gauges.

- Vlad Ousitmovitch asked how many of the sanitary sewer overflow discharges (SSOs) have been a result of power outages.
  - Bruce explained that power systems and CSOs are tied together, but those outages are not reported in these models. And, the models don't include SSOs. Linda Sullivan asked if data regarding the number of sanitary sewer overflows due to generator failures would be helpful information for the group, as well.

**ACTION:** Locate and distribute data regarding the number of sewer overflows due to generator failures.

Penny requested any last questions or clarifications, and then recapped the data requests that will be provided to the CAG.

Due to lack of time for a discussion of County factors for alternatives selections, Penny asked for group members to please review the packets distributed with the nine alternatives the County evaluated for Murray and for Barton to get a sense of how the County applied criteria to CSO reduction alternatives. When the group begins to discuss guiding principles, these will be more fully discussed.

**Action:** CAG members should review the Murray and Barton alternatives packets as well as the handout "Factors for Comparing Alternatives" to begin thinking about criteria and guiding principles.

## Meeting Schedule Proposal

Penny presented a new proposed meeting schedule which will accommodate most CAG members as well as the experts the group has requested to hear from:

Meeting 4 – Tuesday, August 3, 2010  
Meeting 5 – Thursday, August 19, 2010  
Meeting 6 – Monday, August 30, 2010  
Meeting 7 – Wednesday, September 15, 2010  
Meeting 8 – Tuesday, September 28, 2010

- Cindi Barker asked whether the new schedule would compromise fuller community engagement.
  - Linda Sullivan confirmed that a presentation to the community is still planned. At that time, the County will announce its preferred alternative for CSO reduction in Murray Basin.

Penny concluded the meeting and thanked all CAG members, guest speakers, and guests for their attendance. She suggested that future meetings be expanded by thirty minutes to accommodate the amount of information presented to the group and will poll the group for the need and for whether to add time at the beginning or the end of meetings.

## Action Items

- Correct the Community Suggested Alternatives document to reflect Chris Jansen’s suggestion.
- CAG members should review the Murray and Barton alternatives packets and the “Factors for Comparing Alternatives” handout to prepare for guiding principles discussions.
- The following data should be located and distributed to CAG members:
  - Map of optimal green stormwater infrastructure locations, with parameters such as soil contamination, slopes, infiltration, etc.
  - Location of West Seattle rain gauges
  - Location of the five flow-meters in Murray Basin, as well as data from these flow-meters
  - Force main capacity between Barton and Murray and downstream
  - Explanation of discrepancies between predicted outflow data and outflow data reported to Department of Ecology
  - Number of sanitary sewer overflows due to generator failures.