

**Final Meeting Summary
Wet Weather Team Meeting #20
Tuesday, July 15, 2008
MSD Main Office, Louisville**

The Wet Weather Team (WWT), chartered by the Louisville and Jefferson County Metropolitan Sewer District (MSD), met on July 15, 2008, at MSD's main office. The objectives of the meeting were to:

- Review changes made to the draft vision for MSD's Integrated Overflow Abatement Plan (IOAP) since the last WWT meeting.
- Review and provide feedback on MSD's draft funding plan for the IOAP.
- Discuss the methodology for estimating green infrastructure costs, the revised lists of project for addressing combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs), and the preliminary "knee of the curve" financial stewardship analysis of the ranked project lists.

Wet Weather Project Updates and Announcements

The following Wet Weather Project updates and announcements were noted at the meeting.

- MSD Personnel Changes: Derek Guthrie, one of the MSD representatives on the Wet Weather Team, will be retiring on July 31, 2008. Mark Johnson will be replacing him as Chief Engineer and Director of Engineering/Operations at MSD.
- Metro Louisville Green Initiative: Brian Bingham of MSD described a meeting that Louisville Mayor Jerry Abramson convened on July 10, 2008 regarding Metro Louisville's Green Strategic Initiative (known as "Go Green Louisville," see www.louisvilleky.gov/GoGreen). MSD participated in this meeting along with representatives from various Metro Louisville government departments. The green initiative—one of the mayor's seven strategic initiatives—is wide reaching and includes city government efforts to improve water quality, air quality, land use, and energy efficiency.
- Wetlands Projects: Gary Swanson of CH2M HILL said that the technical team had been evaluating additional options to include wetlands treatment in projects, after a few WWT members had asked why there were so few preferred project alternatives that involved wetlands in the draft project lists.
 - Mr. Swanson noted that the technical team was looking at an alternative to a large storage basin that would combine constructed wetlands with a smaller storage basin to address sewer overflows near the Northern Ditch Interceptor, one of the Big Four SSO solutions. This would be MSD's first use of wetlands to help treat sewer overflows.
 - The technical team is also looking at options to add constructed wetlands outside storage basins where there is room, so that overflows would run through the wetlands before entering the basins.
 - One issue with using wetlands treatment for wastewater containing sewage is that the wetlands need to be fenced off, unlike wetlands that are used for stormwater management exclusively.
- Flows into Lower Beargrass Creek: Gary Swanson said that the University of Louisville had studied the potential to use reclaimed backwash water from the Louisville Water Company's Crescent Hill Water Treatment Plant to supplement flows in the lower section of Beargrass Creek. The study showed that the concept was feasible, but many implementation issues remain to be worked out. He also reported on a Division of Water study of the sources of natural water flows into the lower sections of Beargrass Creek. To trace the route and travel time of several natural springs, researchers put dye into the water in the springs and measured how long it took to reach the stream. In four locations the dye never made it into Beargrass Creek, but instead flowed into the sanitary sewer system. This presents a potential opportunity to restore natural flows to Beargrass Creek (an

estimated 24 percent of the base flow) by finding and addressing the infiltration and inflow (I&I) problems.

- **Green Infrastructure Investments of Other Municipalities:** Following up on questions from the previous WWT meeting, Gary Swanson reported on the level of investment of other communities in green solutions to address CSOs. Mr. Swanson noted that very few communities nationally have coordinated green infrastructure initiatives. As examples of those initiatives, the City of Portland, Oregon has spent \$5 million annually on green infrastructure in the past (and budgeted \$10 million for this fiscal year); Milwaukee has invested \$10 million in sewer-related green projects; Chicago spends \$900,000 annually on the Green Alleys Program; and Washington, DC is planning to invest \$6 million annually in green initiatives.
- **Wet Weather Team Schedule Update:** Jennifer Tice of Ross & Associates asked that WWT members hold the night of Wednesday, September 24, in addition to Tuesday, September 23, for the next WWT meeting. This will be the final WWT meeting before the release of the draft IOAP for public comment, so additional time may be needed for WWT deliberations. Ms. Tice also reviewed the overall schedule of WWT-related activities through the end of the year, and noted that the facilitation and technical teams would be distributing several documents to WWT members over the summer to invite comments and feedback. (These materials are listed in the next steps section below.)

Integrated Overflow Abatement Plan Vision Update

Jennifer Tice of Ross & Associates reviewed the major changes made to the draft IOAP vision since the last WWT meeting. These changes included a new section describing MSD's plans for the Project WIN public information, education, and involvement program based on the presentation and discussion at the June 2008 WWT meeting, a new statement about the stream restoration allowance included with overflow abatement projects, and clarifications to the description of the proposed three-to-one offset of flows from new development. WWT members did not provide additional comments on the vision at this meeting, but the facilitation team encouraged participants to provide feedback following the meeting. WWT participants were also reminded that the vision will be included in MSD's consent decree response.

Project WIN Funding Plan Presentation

MSD Finance Director Marion Gee gave a presentation on the draft funding plan for MSD's consent decree response. Mr. Gee reviewed EPA's requirements for a funding plan, the funding suggestions previously provided by WWT members (e.g., ideas tracked on solution ideas list), a proposal for funding the program with annual rate increases and accessing capital markets (i.e., bond issues or other loans), and next steps in the development of a final funding plan. Principles for the funding plan include:

- Rates and fees for the IOAP must pay MSD's operating costs and debt service.
- MSD's current bond rating should be maintained. (Note: MSD's bond rating was recently upgraded to AA, which should decrease costs for future borrowings.)
- Rates and fees should allow for continued economic development in the community.

Using the assumption that the consent decree will cost \$800 million, the funding presentation outlined that wastewater and drainage rates would increase 5 to 6.5 percent annually and that the consent decree surcharge would increase 2.5 to 5 percent annually through 2021. Furthermore, under this funding proposal, MSD would borrow approximately \$1.15 billion by 2025 (to address both IOAP and other MSD capital needs for infrastructure renewal, replacement, and expansion), which would increase MSD's debt service payments from \$94 million annually to \$163 million annually by 2025. MSD also plans to pursue

grants, line-item appropriations, and public/private partnerships (e.g., recapture agreements) to help pay for capital construction costs, as appropriate.

In response to this presentation, WWT participants asked several clarifying questions and provided feedback on the draft funding proposal. WWT comments included the following.

Clarifications about the Draft Funding Plan

- In answer to a question, Mr. Gee indicated that the rate increases assume a customer growth rate of 1 percent per year. If the actual growth rate differs, the rates may need to be adjusted.
- A few WWT participants asked whether the consent decree would “go away” in 2024. MSD responded that the community would continue to be paying for the consent decree after 2024, particularly since MSD envisions issuing 30-year bonds as late as 2021.

Comments on the Draft Funding Plan

- Several WWT members commented on the fact that the consent decree surcharge does not cover all the consent decree expenditures could be confusing to the public. Furthermore, it also could be confusing that MSD’s borrowings will cover more than the IOAP.
 - WWT stakeholders said that there was a potential transparency issue regarding what the consent decree surcharge is financing as compared to the wastewater and drainage rates.
 - MSD noted that many projects serve more than one purpose and that drainage, wastewater, and consent decree expenditures are interrelated. Participants noted that there are also general “costs of doing business,” including MSD’s debt service payments.
- WWT stakeholders suggested that MSD should find an understandable and transparent way to explain the rate increases to the public. Participants urged MSD to consider alternatives for the billing structure that would address the communication challenges with having a separate consent decree surcharge. Suggestions included:
 - Get rid of (or phase out) the separate consent decree surcharge.
 - Increase the consent decree surcharge so it covers all of the capital costs for constructed consent decree projects. (This could be helpful for describing to people how the federal government is requiring the consent decree expenditures.)
- Several WWT stakeholders indicated that it will be important for MSD to inform people what they’re paying for with the rate increases. Some participants commented that it was unfortunate that the rate increases, although necessary, would affect people during hard economic times.
- One WWT participant indicated discomfort with MSD borrowing money, but nevertheless indicated general support for the draft funding plan.

Information Requests

- Some WWT members requested that MSD prepare a chart showing how a typical bill would change each year, including the wastewater and drainage fees and the consent decree surcharge. Participants also asked MSD to show how MSD’s rates compare to those of other communities.
- A few WWT participants requested a breakdown of the anticipated consent decree capital expenditures and anticipated other capital expenditures each year of funding the consent decree.
- A few WWT stakeholders asked for additional explanation and examples of how the consent decree has changed (or will change) the schedule of other MSD projects.

During this session, Rob Greenwood of Ross & Associates did an explicit consensus check with each WWT participant regarding MSD’s draft funding plan. All present WWT members indicated comfort with MSD’s direction with the funding plan, although some participants reserved final judgment until more detailed rate information becomes available.

Discussion of CSO, SSO, and Green Infrastructure Projects in the IOAP

Green Infrastructure Cost Calculator

John Lyons of Strand Associates reviewed a spreadsheet the technical team is using to develop the cost estimates for green infrastructure efforts in the IOAP. The spreadsheet included calculations estimating the benefits in flow volume reduction per unit (e.g., flow reduction per square foot of a vegetated roof), the unit costs and program costs, and a user-defined field estimating the implementation rate for a variety of best management practices (BMPs). This tool will be used to develop a budget and “business plan” for green infrastructure in the IOAP, and will allow the technical team to compare the cost per gallon of flow removed for green solutions as compared to gray solutions.

Update on Analysis of a Potential Ordinance to Address I&I Issues

Gary Swanson of CH2M HILL added that the technical team is continuing to work on the analysis of a potential ordinance to address private sources of I&I in MSD’s sewer systems. This analysis, which should be completed by the end of July, will include estimates of the volume reductions and cost savings that could be anticipated from an ordinance and an associated private-side I&I reduction effort.

Review of Revised CSO and SSO Project Lists and Initial “Knee of the Curve” Charts

Gary Swanson reviewed the revised draft project lists the technical team developed for addressing CSOs and SSOs. The two handouts showed all the CSO and SSO project alternatives the technical team has evaluated to date, along with the preferred alternatives (with the highest benefit-cost scores) highlighted in yellow. Mr. Swanson noted that the technical team is still evaluating additional alternatives, including looking for lower-cost solutions to address problems in downtown Louisville and in the South Fork of Beargrass Creek. Next steps in the technical team’s analysis include developing revised versions of the gray solutions that incorporate the results of the green infrastructure analysis, conducting the analysis of the optimum level of control for individual CSOs and SSOs, evaluating the water quality benefits of the overall program, refining the cost estimates, developing final drafts of the project lists, and drafting an implementation schedule for the projects. The technical team will also be conducting the programmatic analysis of the IOAP and will share plans for this analysis with the WWT.

Mr. Swanson showed examples of “knee of the curve” plots for CSO and SSO projects in the IOAP. (“Knee of the curve” graphs plot the cumulative cost of all projects on the x-axis and the benefit-cost scores of the projects on the y-axis, with the projects ordered from the highest to lowest scores.) The technical team’s initial conclusions from this analysis include the following:

- The benefit-cost evaluation provides a logical ranking of solutions.
- Projects that address clusters of CSOs or SSOs tended to score well in the benefit-cost analysis.
- The scoring system does not fully account for economies of scale for large projects or projects that provide benefits across multiple basins.
- For those and other reasons, the sequencing and scheduling of IOAP projects will consider other factors beyond the benefit-cost scores.

Project-Review Workshop with Technical Team

A sign-in sheet was circulated at the meeting inquiring about WWT members’ interest in an optional project-review workshop with the technical team on August 4, 2008. There was not sufficient WWT interest in a meeting on that date; however, several WWT members expressed interest in meeting with the

technical team on another date to review the benefit-cost scoring methodology and examples of the project alternatives evaluation. The technical team plans to schedule a meeting with these individuals.

Wet Weather Team Comments

WWT members asked a number of clarifying questions in response to the presentations and also provided the following comments.

- A few WWT members asked how MSD would address the issue of maintaining pervious pavement, green roofs, and other BMPs.
 - MSD and the technical team said that MSD would be doing inspections of BMPs for property owners that get a drainage credit. The green infrastructure program budget includes inspection costs as well as other administrative costs.
- In response to the green presentation, a few WWT stakeholders asked about the issue of sump pumps.
 - MSD and the technical team indicated that this was primarily an issue within the separate sanitary sewer system; however, MSD's analysis of a private-side I&I reduction program is also considering addressing the issue of sump pump connections within the combined sewer system.
- A few WWT participants commented that more of the preferred alternatives should be green solutions, based on the estimates of cost per gallon of flow removed.
 - Gary Swanson of CH2M HILL said that the green infrastructure program budget is being developed based on a systematic, basin-by-basin analysis of flow-reduction opportunities and realistic, but conservative estimates about the anticipated market penetration (rate of adoption) of green solutions. Increasing market penetration beyond those levels would require much more financial investment, which would decrease the cost effectiveness of the green solutions.
 - Rob Greenwood of Ross & Associates added that future materials will more explicitly show how the green analysis has been incorporated into the project list (e.g., how assumptions about flow reductions from I&I efforts and green infrastructure reduce the size and costs of gray solutions).
- A few WWT stakeholders observed that the ability to quantify the benefits/effectiveness and sustainability of green infrastructure projects over time could be helpful to other communities.
- In response to a question, Gary Swanson indicated that the columns showing benefit-cost scores in the project list tables were comparable across CSO and SSO projects, although the columns had slightly different names.

During this session, the facilitation team asked WWT members about their comfort with how the technical team has applied the values-based evaluation framework in assessing the benefits and costs of project alternatives and developing the list of preferred project alternatives. About a third of WWT participants indicated that they would be interested in meeting with the technical team to look at more of the details of the technical team's analysis, while the remaining two-thirds of the group indicated comfort that the technical team had applied the methodology consistently with WWT member expectations.

Observer Comments

There were no observer comments at this meeting.

Wrap Up and Next Steps

- The facilitation team will revise the IOAP vision draft to incorporate additional information about the Project WIN funding plan.

- The technical team will host an optional meeting with several WWT members on August 7, 2008 to review and answer questions about the benefit-cost scoring methodology and the project alternatives the technical team has been evaluating. If other WWT members are interested in meeting with the technical team to review project alternatives for specific locations, please contact Gary Swanson (Gary.Swanson@CH2M.com) and Jennifer Tice (jennifer.tice@ross-assoc.com) to set up a meeting.
- The facilitation team will check in with WWT members individually to ask whether WWT members are comfortable with how the technical team has applied the values-based evaluation framework.
- The facilitation and technical teams will distribute the following series of materials to WWT members for review before the September WWT meeting:
 - a. Memo describing the technical team’s plans for the programmatic evaluation of the IOAP (including environmental justice, customer satisfaction, and other programmatic values);
 - b. Revised vision incorporating a new funding plan description;
 - c. Rate and financing impacts example;
 - d. Idea list “crosswalk” document;
 - e. Final draft public information, education, and involvement plan;
 - f. Final draft post-construction compliance monitoring plan; and
 - g. Revised project list incorporating results of the levels of control analysis.
- Potential topics for the WWT’s next meeting on September 23 and 24, 2008 include:
 - Final draft IOAP vision;
 - Final draft IOAP project list;
 - Results of the programmatic analysis of IOAP projects;
 - Draft implementation schedule;
 - Program cost and rate impacts;
 - Final draft funding plan;
 - Final draft post-construction compliance monitoring plan; and
 - Final draft public information, education, and involvement plan.

Meeting Participants

Wet Weather Team Stakeholders

Steve Barger, Labor
 Susan Barto, Mayor of Lyndon
 Stuart Benson, Louisville Metro Council, District 20
 Charles Cash, Louisville Metro Planning & Design Services Department
 Allan Dittmer, University of Louisville
 Laura Douglas, E.ON U.S. LLC
 Faye Ellerkamp, City of Windy Hills
 Mike Heitz, Louisville Metro Parks Department
 Tom Herman, Zeon Chemicals
 Rick Johnstone, Deputy Mayor, Louisville Metro Mayor’s Office
 Bob Marrett, CMB Development Company
 Judy Nielsen, Louisville Metro Health Department
 Lisa Santos, Irish Hill Neighborhood Association

Tina Ward-Pugh, Louisville Metro Council, District 9
David Wicks, Jefferson County Public Schools

MSD Personnel

Angela Akridge, MSD Regulatory Policy Manager
Brian Bingham, MSD Regulatory Management Services Director
Mark Johnson, MSD Director of Engineering/Operations and Chief Engineer
Bud Schardein, MSD Executive Director

Facilitation and Technical Support

Rob Greenwood, Ross & Associates Environmental Consulting
Gary Swanson, CH2M HILL
Jennifer Tice, Ross & Associates Environmental Consulting

Meeting Observers

Vicki Coombs, MSD
Kristen Crumpton, Tetra Tech
Samantha Davis, Louisville Metro Council, District 9
Marion Gee, MSD
Justin Gray, MSD
Sue Green, MSD
Clay Kelly, Strand Associates
Tim Kraus, O'Brien & Gere
John Lyons, Strand Associates
Chad McCormick, Stantec
Julia Muller, MSD
Phil Scott, O'Brien & Gere
Ram Vliddagiri, The Corradino Group

Meeting Materials

- Agenda for the 7/15/08 WWT Meeting
- Summary of the 6/19/08 WWT Meeting
- Consensus Items List (updated July 2008)
- Solution Ideas List (updated July 2008)
- Education and Outreach Ideas List (updated July 2008)
- Data Request and Monitoring Suggestions List (updated July 2008)
- Excerpt from 7/10/08 Mayor's Green Initiative Presentation
- Emergent Vision for MSD's Integrated Overflow Abatement Plan (updated July 2008)
- Project WIN Funding Plan Presentation
- CSO Project List, "Draft Summary of Ohio River CSO LTCP Solutions"
- SSO Project List, "Draft Summary of Cedar Creek and Hite Creek Modeled 2-yr, 3-hr Solutions"
- Knee of the Curve Presentation