

Wet Weather Team Project

Meeting Materials

Summer 2006–Spring 2007

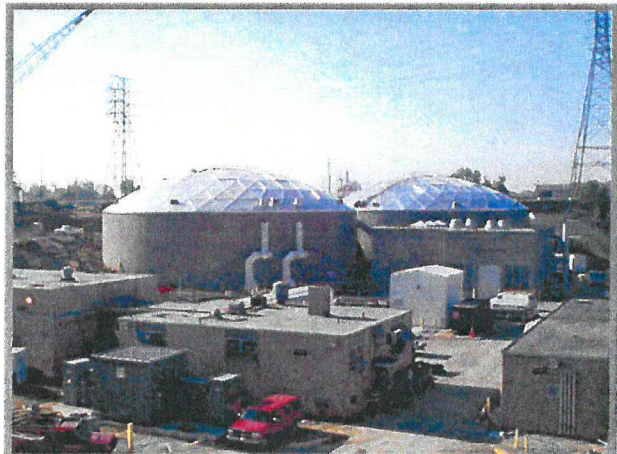
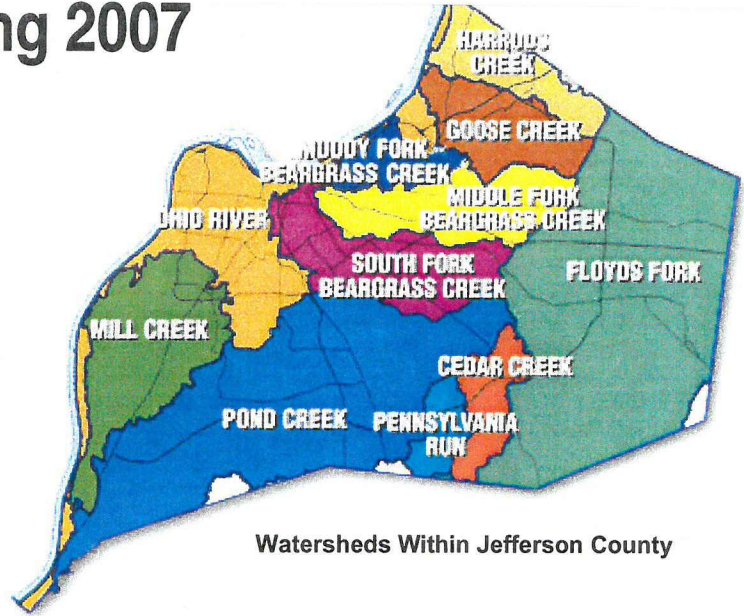
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WWT Stakeholders Meeting # 6 2/13/2007



MSD

Louisville and Jefferson County
Metropolitan Sewer District



Draft Agenda
Louisville and Jefferson County Metropolitan Sewer District (MSD)
Wet Weather Team Meeting #6
Tuesday, February 13, 2007, 4:20-8:00 PM
MSD Main Office, Board Room
700 West Liberty St., Louisville

Meeting Objectives:

- Learn about wet-weather wastewater and stormwater management problems in the Beechwood Village area of the Beargrass Creek watershed, and discuss potential high-level strategies to address those problems.
- Review and provide feedback on draft performance scales for evaluating the potential benefits of project alternative based on the Wet Weather Team's community values. (This meeting will focus on draft performance measures for the Regulatory Compliance and Public Health Enhancement values; other values will be discussed at future meetings.)
- Discuss potential relative weights for the Wet Weather Team's community values.
- Identify next steps and expectations for the next meeting of the Wet Weather Team.

4:20 PM **Participants Arrive and Get Settled**

4:30 PM **Review Agenda and Ground Rules (5 minutes)**

- Review meeting objectives and ground rules.

4:35 PM **Wet Weather Project Updates (15 minutes)**

- Updates on MSD wet weather activities and follow-up items from the last Wet Weather Team meeting, including feedback on public education and outreach plans.

4:50 PM **Discussion of Watershed-Specific Problems and High-Level Response Strategies—
Beechwood Village Area (45 minutes)**

- Review wet-weather sewer overflow problems in the Beechwood Village area, their causes, and the results of past efforts to address the problems.
- Discuss potential high-level strategies to address the wet-weather wastewater and stormwater management problems in the Beechwood Village area.

5:35 PM **Dinner Break (30 minutes)**

Dinner will be provided for Wet Weather Team members.

6:05 PM **Discussion of Draft Performance Measures for Two Values (70 minutes)**

- Review and discuss draft performance scales (measuring the severity and probability of potential impacts to values) for two of the Wet Weather Team's non-financial values (Regulatory Compliance and Public Health Enhancement).
(Performance scales for other values will be discussed at future meetings.)

2/13/07 Wet Weather Team Meeting Agenda, Continued

- 7:15 PM Discussion of Comparative Weighting of Values (25 minutes)**
- Discuss initial ideas for relative weights for the Wet Weather Team's community values.
- 7:40 PM Opportunity for Observer Comments (10 minutes)**
- 7:50 PM Wrap Up and Next Steps (10 minutes)**
- Review plans and expectations for the March 15, 2007 Wet Weather Team meeting.
- 8:00 PM Adjourn**

Meeting Summary

**Final Meeting Summary
Wet Weather Team Meeting #6
Tuesday, February 13, 2007
MSD Main Office, Louisville**

The Wet Weather Team (WWT), chartered by the Louisville and Jefferson County Metropolitan Sewer District (MSD), met on February 13, 2007 at MSD's main office in Louisville. The objectives of the meeting were to:

- Learn about wet-weather wastewater and stormwater management problems in the Beechwood Village area, and discuss potential high-level strategies to address those problems;
- Discuss potential relative weights for the Wet Weather Team's community values; and
- Review and provide feedback on draft performance scales for evaluating the potential benefits of project alternatives in terms of regulatory compliance and public health enhancement (two of the values identified by the WWT).

Wet Weather Project Updates

Jennifer Tice of Ross & Associates said that several WWT stakeholders had submitted comments in response to an e-mail "homework assignment" asking for suggestions for MSD's plans for public participation efforts during the development of the Wet Weather Program. The homework assignment requested feedback on three topics: (1) the four proposed public meetings; (2) MSD's ongoing public outreach, education, and public relations efforts; and (3) the overall public participation strategy. A summary of these comments was distributed at the meeting, along with individual comments submitted by WWT stakeholders and an inventory of MSD's existing public outreach and education materials. MSD will consider these suggestions as it refines and further develops its plans for public participation efforts during the WWT process. These plans will be discussed at the March 15, 2007 WWT meeting.

Brian Bingham of MSD showed participants an internal MSD website displaying aspects of MSD's Emergency Management Information System. The on-line interface provides MSD operations staff with a real-time view of the locations of sewer overflows, alarms from treatment plants, and service calls that have occurred recently. He noted that because it had been raining, most of the treatment plants were operating at their maximum capacities. The Real Time Control program, which is designed to maximize the use of in-line storage capacity in the combined sewer system, has been working well. Mr. Bingham also said that the WWT portion of MSD's Project WIN website would be operational in about ten days.

Beechwood Village SSO Abatement Presentation and Discussion

Rob Greenwood of Ross & Associates said that the sanitary sewer overflow (SSO) problem in the Beechwood Village area (one of the "Big 4" SSOs) is part of the early action items in MSD's wet weather consent decree. These early action items are on a separate track from the long-term plans for combined sewer overflow (CSO) and SSO controls that WWT stakeholders are working with MSD to develop. Even though the early action items are on a separate track, there are still a lot of opportunities for WWT stakeholders to provide input to MSD on potential response strategies.

After that introduction, Brian Bingham gave a presentation that covered: (a) the sewer overflow and drainage problems in the Beechwood Village area and their root causes, (b) the mixed success of past efforts to address the problems, (c) MSD's plans for installing a new sewer system for the area that relies on pumps from basements rather than gravity sewer service, and (d) remaining issues to be resolved,

including potentially using the existing sewer system to improve stormwater drainage, outreach related to MSD access to homeowner basements, and ongoing challenges with high groundwater levels.

WWT stakeholders made a number of comments about the sewer overflow and drainage problems in Beechwood Village and potential response strategies. Highlights of this discussion are as follows.

- Even though groundwater is not specifically MSD's responsibility (no single, local agency is responsible for groundwater), it is important for MSD to consider strategies that address root causes of problems.
- Participants had a number of comments about some of the design challenges in the solutions for the Beechwood Village area, including electrical power failure, the extent of illegal sump pump connections, the extent of impervious surfaces, capacity constraints for conventional storage, etc.
 - For example, homeowners may resist having sump pumps drain water into their yards, since the land already tends to become saturated with water during storms.
 - There are large challenges associated with educating residents about planned work in the area, but there could also be opportunities to engage residents in the solutions.
- Participants thought it would be useful for MSD to consider solutions that address more than just the problems in Beechwood Village. It is important to examine larger scale strategies, as well as how Beechwood Village strategies fit into the overall Wet Weather Program.
 - There could be additional opportunities to improve water quality in streams.
 - Another consideration is looking at potential unintended consequences of interventions.
- Specific solutions suggested by WWT members included the following:
 - Underground injection could be a technique to eliminate some of the excess volume of water from the area.
 - Given the high cost of the solutions proposed for Beechwood Village, a participant raised the question of whether it could make sense to consider the cost of purchasing the homes in the neighborhood and relocating people. (Although not introduced at the meeting, MSD estimates that the home values in Beechwood Village are in excess of \$200,000 per home, which indicates that the total cost of a home buyout would be in excess of \$100 million, an amount substantially above the cost of the sewer replacement effort.)
 - There is a wooded area at St. Matthews Park that could be a potential location of a park-like wet detention area. More generally, there could be other opportunities to integrate eco-friendly solutions such as using landscaped areas to control stormwater runoff.
- The elimination of SSOs in the area will reduce the levels of fecal coliform in Beargrass Creek Middle Fork; however, there will not be much change in the levels of dissolved oxygen (DO), since non-point sources in the watershed tend to be a larger driver of DO problems. This example therefore illustrates a potential tradeoff between regulatory compliance and water quality gains.
- WWT stakeholders commented on the usefulness of this example for understanding the tradeoffs among community values and the complexity of the challenges MSD and the community face.

Wet Weather Team Values Weighting Exercise

During the dinner break at the meeting, the stakeholders on the Wet Weather Team were asked to complete a "straw poll" ballot soliciting their thoughts on the relative importance of the WWT values for deciding between alternatives for the Wet Weather Program. (Input from WWT stakeholders who missed the meeting was also collected.) The ballots asked individuals to assign 55 points across the 11 values, with higher point values representing greater importance for evaluating program alternatives. The voting

exercise was intended to provide a snapshot of the group's preferences, as a starting point for further discussions. Results and observations from the straw poll included the following:

- The two values that received the highest number of points were environmental enhancement and public health enhancement; both of which had broad support from WWT stakeholders.
- The education and regulatory compliance values also both received high numbers of points; however, the voting on these values was highly divergent. Several stakeholders ranked these values very high, yet others ranked the values much lower or did not vote for them.
 - Stakeholders had different interpretations of the regulatory compliance value—some did not vote for it because it was a given that the Wet Weather Program would achieve compliance; others ranked the value high because it is critical for the program's success.
 - Stakeholders that allocated large numbers of points to education highlighted several aspects of it: the need for notifying people, selling the rate increases that will accompany the program, and helping people understand how their actions can be part of the solution.
- Other values that received significant support from WWT stakeholders included financial stewardship, asset protection, and eco-friendly solutions.
- A few people were surprised that the environmental justice and equity value was ranked relatively low, given the degree of discussion and attention the value has received at WWT meetings.
- A few people asked about the voting methodology that was used, and how voting would be used in the future. Rob Greenwood noted that the facilitation team does not envision that the WWT stakeholder group would continue to use voting as a means of deciding on appropriate weighting of the values. He indicated the straw poll was meant to get an early, informal read on stakeholder value preferences that would allow for a more focused and productive “first cut” at assigning weights to the values.

The facilitation team will work with the technical team on a potential approach for weighting the values in the analysis of alternatives for MSD's Wet Weather Program based on the results from the straw poll. The WWT will have further opportunities to discuss the weighting of values later in the process. In addition, the technical team expects to do sensitivity analyses of the effects of weighting the values on the results of the benefit-cost analysis, especially for values where stakeholders have divergent views.

Draft Performance Measures for Regulatory Compliance and Public Health Enhancement

Gary Swanson of CH2M HILL reviewed the overall framework for evaluating the benefits of project alternatives according to the non-financial values identified by the WWT, and then walked through the specific performance measures proposed for the regulatory compliance and public health enhancement values. For each value, the technical team has developed a draft performance measurement table for evaluating: (a) the severity of the potential impact on the value (e.g., the size of a CSO discharge into Beargrass Creek) and (b) the frequency that an impact occurs (e.g., the number of times per year there is a CSO discharge). Both regulatory compliance and public health enhancement have multiple performance measures associated with them, depending on the type of impact that is being evaluated (e.g., compliance considerations include peak flows at wastewater treatment plants, the number of SSOs, and the volume of CSO discharges to the Ohio River and Beargrass Creek).

Mr. Swanson explained the 1-to-5 scales for evaluating the severity and frequency of impacts, the rationale behind the scales, and how the tables would be used to develop numerical scores for the benefits of project alternatives. Steps in the analysis include the following:

1. For a given site-specific problem, determine the score of the baseline conditions (base case) for the value (i.e., the frequency score multiplied by the severity score for current conditions). This will generally be a high value (upper left portion of the table).
2. Identify a series of potential project alternatives for addressing the problem.
3. For each alternative, determine the numerical scores (i.e., the frequency score multiplied by the severity score after the alternative is implemented) the alternative will have under different wet weather scenarios (e.g., a two-year storm versus a five-year storm).
4. Determine the benefit scores for each alternative by subtracting the score of the alternative (the lowest/best score under the different wet weather scenarios) from the score of the base case.
5. Add up the benefits of the project alternatives for all the non-financial values (incorporating the relative weights for the values), and then compare the benefit-cost ratios of project alternatives.

Participants asked a lot of clarifying questions about the draft performance measures for the two values and the scoring system for the values-based decision making model, and requested that the technical team develop a more comprehensive and detailed example, preferably with actual data (e.g., for a specific problem), to illustrate how the performance measure tables and scoring system would work in practice.

WWT member comments on the performance measures included the following:

- It could be that the range of potential impacts to a value is not a linear, stepwise function as implied by the 1-5 scales (e.g., a scale such as 10, 7, 3, 2, 1 might be more appropriate).
- Participants were confused why the “best” score across different wet-weather scenarios (or “cases”) was chosen for each alternative. Mr. Swanson said that other methods could be used instead, such as to take a numerical average of the scores or use best professional judgment.
- WWT members asked how many different scenarios would be evaluated for the values (in the example presented, there were three scenarios), and whether it would be possible to set limits in the charts to simplify the analysis (e.g., focus on a two-year storm). In general, Mr. Swanson said that the technical team would consider five scenarios (corresponding to levels in the frequency scale). Setting arbitrary limits could shortcut the values-based decision-making process.
- Participants requested more complete descriptions of the rationales for the performance scales. In particular, it was not clear that the scale relating to peak flows at treatment plants differed between the regulatory compliance and public health enhancement performance measure tables.

Observer Comments

There were no comments from observers at this meeting.

Wrap Up and Next Steps

- The technical team will continue developing draft performance scales for evaluating the benefits of potential project alternatives. In addition, the technical team will develop a detailed, step-by-step description and example of how project alternatives will be scored using the performance scales. The facilitation team will distribute this example to the WWT along with several review questions.
- The next WWT meeting will be on Thursday, March 15, 2007, at MSD’s main office in downtown Louisville. Potential meeting topics include:
 - Discussion of current conditions and high-level strategies to respond to wet-weather wastewater and stormwater management issues in part of the Beargrass Creek watershed;
 - Update on the approach for weighting values in the analysis of alternatives for the Wet Weather Program;

- Review of the scoring system for evaluating benefits of project alternatives and the draft performance measurement scales for additional non-financial values; and
 - Presentation and discussion of MSD's public participation strategy and plans.
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Meeting Participants

Wet Weather Team Stakeholders

Steve Barger, Labor
Stuart Benson, Metro Council, District 20
Charles Cash, City of Louisville, Planning & Design Services Department
Allan Dittmer, University of Louisville
Laura Douglas, E.ON U.S. LLC
Jeff Frank, Vanguard Sales
Tom Herman, Zeon Chemicals
Rick Johnstone, Deputy Mayor, Mayor's Office
Bob Marrett, CMB Development Company
Kurt Mason, Jefferson County Soil and Water Conservation District
Judy Nielsen, Louisville Metro Health Department
Lisa Santos, Irish Hill Neighborhood Association
Bob Rosenbaum (attended instead of Faye Ellerkamp), City of Windy Hills
Bruce Scott, Kentucky Waterways Alliance
David Tollerud, University of Louisville, School of Public Health and Information Sciences
Tina Ward-Pugh, 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
Derek Guthrie, MSD Director of Engineering/Operations & Chief Engineer

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
Cathy Cornish, MSD
Henry Cubero, The Cubero Group
David Hackworth, CH2M HILL
Tim Kraus, O'Brien & Gere
Debbie Maupin, The Cubero Group
Steve McKinley, URS Corp.
Teri Pifine, MSD
Marla Rawls Hill, CH2M HILL
Bob Woosley, Heritage Engineering

Meeting Materials

- February 13, 2007 Meeting Agenda
- Comments from the WWT's "Homework Assignment" on Public Participation Suggestions for MSD
- Annotated Inventory of Education and Outreach Materials Related to the Consent Decree and Project WIN
- Draft Wet Weather Team Community Values (February 2007 version)
- Values Weighting Straw Poll Ballot
- Pumped SSO Abatement for Beechwood Village Presentation
- Non-Financial Values Performance Measures Presentation, Volume 1 – Regulatory Compliance and Public Health Enhancement
- Performance Measure Table for Regulatory Compliance
- Performance Measure Table for Public Health Enhancement

Comments from the Wet Weather Team's "Homework Assignment" on Public Participation Suggestions for MSD (Assembled for the 2/13/07 WWT Meeting)

I. Summary of the Homework Assignment and Comments Received

Following the Wet Weather Team (WWT) meeting on January 18, 2007, the facilitation team worked with MSD to develop a short "homework assignment" for WWT members to solicit more specific and concrete suggestions for MSD's public outreach, education, and involvement efforts. This assignment asked WWT stakeholders to consider three broad questions:

1. What suggestions do you have for MSD for the four proposed public meetings (e.g., effective formats, meeting topics, one large meeting vs. a series of small meetings, locations or venues to consider, how to get the word out about the meetings, etc.)?
2. What suggestions do you have for MSD's ongoing public education and outreach activities and any future community-wide public relations program (e.g., positive messages, barriers to overcome, "selling the program" vs. "educating" or "soliciting input," written publications, use of TV and radio, use of print media, etc.)?
3. Do you have other comments or suggestions about the overall public participation strategy (e.g., who gets what type of message how)?

Seven members of the WWT—Susan Barto, Allan Dittmer, Arnita Gadson, Tom Herman, Bob Marrett, Bruce Scott, and David Wicks—provided suggestions for MSD's public participation efforts in response to the homework assignment. Their comments are included (without individual attribution) below, listed in the order they were received. (One person sent comments in two e-mail messages.)

WWT members provided a variety of specific suggestions and recommendations to MSD regarding the content and format of public meetings, ways to get the word out about meetings, other outreach ideas, the overall focus and nature of educational efforts, the need for a formal public relations/marketing effort, and the use of surveys to evaluate the effectiveness of MSD's public outreach and education efforts. Some of the common themes and central messages from WWT stakeholder comments are summarized below.

General Recommendations

- MSD should hire a professional public relations/marketing firm to coordinate MSD's public outreach, education, and public relations efforts associated with Consent Decree activities, including the proposed public meetings as well as other informational activities.
- MSD should conduct baseline and follow-up surveys of community perceptions to evaluate the effectiveness of its public education and outreach efforts. MSD should adjust its education and outreach approaches based on what proves to be effective.
- Education, outreach, and PR efforts should begin now.

Public Meetings

- Public meetings should include short, focused presentations; posters and/or other visual displays; and significant time for members of the public to ask questions and provide input to MSD.
- Use a variety of mechanisms to get the word out about public meetings (radio, newspaper, websites, community associations, e-mail lists, etc.). Announcements should state that "we need your input."
- A combination of downtown and regional meeting locations may be useful.

Comments from the WWT's Public Participation "Homework Assignment" for the 2/13/07 Meeting

- Where possible, "piggy back" onto other events and meetings (e.g., Mayor's Night Out).
- In addition to the public meetings, there should be a presentation to the full Metro Council.

Education and Outreach Efforts

- MSD should expand upon its existing education and outreach efforts, including Project WIN and other MSD programs such as Living Lands and Waters. Education efforts should be comprehensive, adequately resourced, and human scale to encourage behavior changes (e.g., stewardship practices).
 - To be successful, public involvement efforts should involve: a programmatic identity, communications, stewardship, education, conservation, coordination, and celebration.
 - It may be preferable for MSD to contract with a nonprofit organization to conduct public involvement efforts, since they go beyond typical PR efforts.
- Specific ideas for broader education and public involvement efforts include:
 - Developing an educational exhibit for the Kentucky State Fair (could be a permanent or traveling exhibit);
 - Regularly distributing billing inserts to MSD customers with facts and tips to encourage certain behaviors;
 - Developing a 5-minute DVD video;
 - Working with schools to involve both students and parents;
 - Soliciting input and questions via a website; and
 - Developing a speakers bureau to attend business association and other community meetings.
- MSD's education efforts should include positive messages (e.g., as implied in the acronym for Project WIN—Waterway Improvements Now). Commenters disagreed as to whether it would also be useful to include a hard-hitting message about the problems and their consequences.

II. Wet Weather Team Member Comments (Organized Chronologically)

Comment #1 (Received 1/30/07)

Regardless of whether the public supports the necessary rate increases, the projects required by the consent decree will move forward--it's a judicial finding. However, how we involve the public in the projects can determine whether the projects also improve the county's water quality, and may influence public support for higher rates.

The ideas presented at the last meeting, as I said then, are tired. Cleanups have nothing to do with the problems the Consent Decree addresses (except maybe floatables); publicizing the sorry state of our streams uses a deficit model and is counter productive.

Because it is mostly misdirected stormwater that is driving SSO and CSO discharges, there are many things that the general public can do. The focus needs to be on stormwater stewardship by the homeowner, property manager, and builder as it relates to reducing its discharge into streams through CSOs and SSOs. Population-based efforts--if comprehensive and integrated with the county's stormwater management plan--will also improve water quality in streams. The difficulty is in mobilizing a sufficient number of people, organizations, and businesses.

MSD's new "WIN" program is a beginning. Implicit in the program's acronym is an expectation that the Consent Decree effort will improve the quality of the area's streams. I believe that the WIN program

should expand into a broader public education and involvement component of the consent decree project, with funds for it carved out of the overall Consent Decree budget. (Ideally this would have been set up with the SEP, but too late.) The program would become a resource for some of the population-based tactics that some projects will require (e.g., disconnecting sump pumps).

Successful programs of this type elsewhere have these attributes and activities:

1. A corporate or programmatic identity: logo, leader, advisory board, budget, mission, goals, website, etc.
2. Communications: announcements, fliers, newsletters, radio/TV appearances, etc.
3. Stewardship: removing invasive vegetation from riparian zones, planting wetlands, [and yes] litter cleanups
4. Education: stream science, water quality monitoring
5. Conservation: promoting rain gardens, rain barrels, and responsible alternatives for sump pumps and downspout connections.
6. Coordination: linking the public involvement activity with MSD and the wet weather team
7. Celebration: festivals, canoe floats, and other events that call positive attention to the area's waterways.

Whether to locate this capability within MSD is an interesting question. While a handful of people might suspect MSD's motives, I don't think that's a barrier. The larger problem is MSD's tendency to constrict the scope of its public relations to persuading rate payers that MSD is competent and effective--traditional PR goals. What is needed to mobilize the public is comprehensive, adequately-resourced human scale outreach and the creation of new opportunities (often in partnership with existing programs or agencies) for people to get involved. Because public involvement at this scale is not a traditional role for MSD, it may be preferable to contract for this capability with a nonprofit organization. Riverfields or KWA have the right mission and may be appropriate.

[Additional comments from a separate conversation: It would be useful to conduct a survey of the community in the short term to collect baseline information on community perspectives. This survey could include topics related to customer satisfaction with MSD services, perceptions about the area's water resources, familiarity with Project WIN and other Consent Decree activities, and personal stewardship and pollution prevention practices. The survey could help MSD think about its decisions and any future annual customer surveys.]

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Comment #2 (Received 2/2/07)

Here is one idea for public outreach – build on the programs that MSD supports already.

If you have not heard of living lands and waters, they are an amazing group of young people who travel around the US on large rivers cleaning up. They will be here for the month of March, going out every day cleaning up. Two of the weeks, they are paying travel and lodging costs for kids from around the country for an alternative spring break. We have three large workshops, and 20 large clean up days. Come to one of the workshops, come and help clean up, or come on Feb 15th to the Clifton center and learn more about it. Or check out their web site www.livinglandsandwaters.org

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Comment #3 (Received 2/3/07)

Re your questions for the public information meetings, I repeat now what I said at our last Team meeting. That is, you are asking non-public relations type of community volunteers (us) what components of a PR campaign should be done at what times, etc. As one member of the Team, I have had a good bit of experience in marketing and PR. However, even with that experience, particularly with the major scope of this effort to be considered, there is no question about it. This entire effort needs ASAP to employ a professional Public Relations/Marketing firm to coordinate EVERY step to be taken in the informational program for the Wet Weather Team effort. In short you are asking non-professional marketing types (us) to define a route for a nearly billion dollar endeavor. Every informational step should be planned by a professional PR/Marketing firm including dates, places for the meetings, subjects to be addressed, etc. Frankly this is a very obvious step to me and I hope you and MSD reach the same conclusion. The investment in fees will be some of the best dollars spent in this whole endeavor.

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Comment #4 (Received 2/6/07)

1. Suggestions for proposed public meetings:
 - a. Place ads in the Courier-Journal.
 - b. Target homeowners associations and neighborhood groups.
 - c. Place information on MSD and Metro Louisville websites.
 - d. If possible, piggyback on Mayor's Night Out (Metro) and have representatives set up a table at those events.
 - e. Try one centrally located meeting and judge interest before planning area meetings.
 2. Ongoing public education and outreach activities:
 - a. Work with schools (in conjunction with Earth Day and river/creek cleanups) to involve both students and parents.
 - b. Solicit public input by putting the availability for questions and answers/responses on the website.
 - c. Develop a speakers bureau to attend chamber/business association meetings and other groups which use speakers.
 3. Overall public participation strategy: Use previously mentioned ideas to determine what is and what is not effective.
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Comment #5 (Received 2/6/07)

Here are some of my thoughts on your questions. Of course, you already know, you will never please everyone, so we have to go with the biggest bang for the bucks.

How to get the word out:

Newspaper - two listings one three weeks before the event and another, one week before.

Councilman (woman)'s email list. Reginald Meeks has a great list for announcements.

WLOU/WLLV 1350. (have to get the other one) and 101.3 FM for the west.

Comments from the WWT's Public Participation "Homework Assignment" for the 2/13/07 Meeting

The Urban League and NAACP leaders have a web outreach along with the Yearlings Club through Blaine Hudson at UofL. They have very successful events on Sundays. If you go through Blaine Hudson at UofL he will put it on the announcements through the "UofL announcements" for all University of Louisville employees and it will go on the BFSA (Black Faculty and Staff Association) announcements.

In the meeting notices in the newspaper, it can be asked if there are community residents who would like to act as a point person for their neighborhood for further communication, to submit their email. Don't worry you won't have that many, however that will cut down on the excuse no one was notified. It will also get them involved prior to the decision making process.

Topics should highlight:

- What are the changes and when
- Why the changes are GOING TO HAPPEN
- Assets to the community
- Its affects on the community
- Cost to the community (from the least expensive to the most)
- A survey on the understanding of the presentation, cost choices and needed information to be addressed at another meeting if needed. This would be the last question.

Selling the program: I would suggest starting here with highlights of the finished project. Pictures, headlines that highlight the positive, short and to the point, however at the end of each publication, notice, brochure, etc. "WE NEED YOUR INPUT" must at the beginning and at the end. In other words, "this is the way we see it, what do you think" type of outreach. If possible, have the news media take opinions at the areas you are trying to reach at that time - catching shoppers at stores and shopping areas. People notice when those in their neighborhood give their opinion on TV news.

It would be a good thing to make a presentation to Metro Council. This will be on their radar screen so when their constituents call they will know what they are talking about. A CD might be good to give them after the presentation so they can refer to it when they have "forgotten." I know we have representatives on the committee however, I think a presentation before the full council would be helpful and ask the ones on the committee to act as leads for questions they feel the council will need addressed at the meeting.

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Comment #6 (Received 2/7/07)

I am writing with a big idea. For the past 6 to 8 years I have been helping the Kentucky State Fair on developing and then implementing an educational exhibit. A big exhibit - a bit more than 20,000 square feet. Each year we have a different science and geographic theme.

For 2007 the theme is the Science of Biodiversity. Not only will the exhibit reach 13 to 14 thousand school kids who take field trips to see it, but it also has the potential of reaching the 600,000 families and Kentuckians who visit the fair. In part the neatest thing is that the exhibit will be designed in such a way that it could be used as a traveling exhibit after the fair is concluded.

Here is the idea: Could Project WIN and the wet weather team support the exhibit?

I have spoken to Ms. Stephanie Darst, the educational curator for the Fair Board and she is actively seeking sponsors right now.

Comments from the WWT's Public Participation "Homework Assignment" for the 2/13/07 Meeting

I believe it is a WIN - WIN idea.

While I have no authority, if this was to come to pass, I have several ideas:

- * The exhibit could make the link between Biodiversity, Clean Water, and Human Health - the exhibit could form the basis of "Why Care" The state fair audience traditionally are the "non environmentalists" the folks who come for corn dogs the rides. But they do spend time in the exhibits. It would be an excellent way of reaching a non traditional audience and helping address a key concern of the Wet Weather Team, of why should our community support raising our fees so much.
- * The exhibit could be used by MSD, JCPS and other entities over the fall of 2007 and spring of 2008 as a backdrop for public meetings or with community events, and or school programs.
- * Instead of being a traveling exhibit, it could be installed in a location. - If the Letterle pump station ever got converted into an interpretative building for Beargrass Creek and the Butchertown Greenway, this exhibit might be an interesting base exhibit it.

I have run the idea by Phyllis Croce; she liked it but said for sure it should go to Brain [Bingham] and Diane [Secor at MSD].

Ms. Darst has developed an initial one page overview of the program. It is attached, this is a draft, and it can be amended to include or focus on areas of importance to any sponsor.

As you know, I approach my work on the Wet Weather Team with an environmental education focus. I do believe that we can change people's behavior and that change of behavior can have significant impact on how we as citizens treat storm water and how much we as a community support cleaning up our streams. I think that this exhibit could play a significant role in that work.

If there is the interest, I could certainly arrange a meeting with Ms. Darst.

Comment #7 (Received 2/8/07)

1. I think a short, 5 minute, hard hitting, direct DVD that could be shown to the audience at these meetings would be a great way to get a conversation going. Highlight the central issues and indicate the short and long-term consequences. You may remember the 1970's environmental short spot with the Indian chief and tear running down his cheek as he surveys all of the hideous pollution around him. That 1 minute spot had more impact than most any other slick Madison Ave. commercial. I think some very polluted stream local pictures with dead fish, warning signs, etc., and then some scenes of improved water quality as a result of the hard work MSD has been doing would be very effective. Again, it would serve as a good ice breaker.

2. I think an insert similar to what LG&E, the local electric utility, puts in their monthly billing statements, is the most powerful way to go. They provide helpful hints on how to conserve energy, actions they are taking to conserve energy and clean up their air emissions, their tree trimming program, and other things they are doing in the community including help with bill paying for low income folks. I mentioned several ideas that I think MSD could run right now that would make an immediate improvement.

Comments from the WWT's Public Participation "Homework Assignment" for the 2/13/07 Meeting

[Additional comments from a previous conservation: MSD distributed information on CSOs, SSOs, and flood mitigation by mail for the first time this fall. MSD should be doing that constantly. For example, MSD could send out information (e.g., simple facts and tips) to get the average person aware of the issues and involved in the solution.]

3. I think it would be very important to do some kind of follow-up survey research to a selected random sample of customers to see if the education program is working and what folks are learning. I will share one from [Santa Barbara] California and their water conservation program. We need to find out constantly if the message is getting through. Too often I find myself preaching to the choir. If we are going to mitigate climate change, improve our water quality and make the air we breathe safe for future generations, we will have to get to everyone, not just the choir.

I probably have more things I can mention and I have brought examples with me to all of the meetings and would be glad to share them with the group.

.....
Comment #8 (Received 2/8/07)

1. Rather than one meeting (presumably downtown) for each of the four targeted periods, I would suggest ~3 or 4 regional sessions for each period (4/07, 11/07, 3/08, 10/08). They need not be in the same 3-4 venues each time. The logical venues, which I'm sure MSD could ID far better than I, would include a downtown site, a west Louisville site (possibly the Nia Center), a southwest site (possibly the SW Government Center), a south site (somewhere between the Beechmont and Okolona areas), a southeast site (somewhere between Fern Creek and Jeffersontown), and an east/northeast site (somewhere between Middletown and Prospect).

I would recommend having some hard displays at all meeting sites (mainly posters, but some hardware like Bud's backflow preventer would help). Prior to the meeting, these displays should be located where people feel comfortable walking up and looking at/handling them. If they are needed for the presentation, move them to the front of the room just prior to beginning the meeting. Consultants presenting is OK, but MSD should present some of the content too. If possible, get Bud to talk for at least 5-10 minutes on the "big picture" aspects of each issue at each meeting.

Begin on time. If needed, do a one-minute recap of what several late arrivers may have missed later in the presentation. Only plan to present ~1/2 hour at the most, leaving the rest of the meeting for Q&A.

I will have to leave "getting the word out" input to others.

2. Though I deal with the public in my job, I am not a PR professional. I would defer to others for best advice to you on these matters.

3. Only this, for what it's worth. I have been to a couple MSD public meetings. It's not unusual for some people to come in with a very specific concerns or problems. The concern(s) may involve MSD but may or may not be closely related to the topics of the meeting. I have seen Bud [Schardein] very effectively draw that concern out, repeat it back to the person to confirm understanding, and then tell the person what has been done, what will be done and, if appropriate, get contact info for the individual and commit to follow up by so many days.

**ANNOTATED INVENTORY LIST
OF EDUCATIONAL PUBLIC OUTREACH MATERIALS
RELATED TO THE CONSENT DECREE AND PROJECT WIN.**

MSD CONSENT DECREE

Commonwealth of KY vs MSD - Consent Decree incl. Exhibit A - Supplemental Environmental Projects – available to the general public to download from the MSD Project Win website at www.msdlouky.org/projectwin

NEWSPAPER ARTICLES

The Courier-Journal

December 17, 2006, - A day in the sewers, Workers who keep the city's underground in order have seen everything - Describes his tour going inside a combined sewer pipe, the history of Louisville's sewer system, dangers associated, to avoid wading in streams after a rain and MSD under federal mandate through Clean Water Act to reduce the amount of untreated sewage from being dumped into waterways.

December 2, 2006 - Can suburban man plow under the lawn and live by garden alone? - Article encouraging the use of rain gardens and their benefits.

November 25, 2006 – Routing rain from sewers – Article that encourages the use of both rain gardens and rain barrels to keep excess water out of the combined sewers to reduce sewer overflows from occurring.

November 17, 2006 - Workshops on garden entrance begin – Article announcing three workshops to generate designs for an entrance garden at the St. Peter Claver Community Garden. (Consent Decree SEP \$ support)

September 29, 2006 – Watchdog Earth: Flood of sewage –

September 19, 2006 – MSD plans overflow warnings, Residents would get calls during storms - MSD's sewer overflow notification plan, Consent Decree fines, estimated cost to ratepayers, and what we have accomplished so far to address the overflows.

September 15, 2006 – Weekend repairs to close parts of Frankfort Ave. – Sewer system repairs to reduce sewer overflows in the area.

September 8, 2006 – Health checks delayed -

August 14, 2006 - When it rains, it's Porous - Describes the installation of the test strip of pervious concrete to reduce the amount of stormwater that flows into the combined sewer when it rains to reduce CSO's.

June 15, 2006 – A cleaner Ohio River is worth the extra MSD expense –

June 9, 2006 – Cost soars for fixing Louisville's sewers –

May 26, 2006 – Water quality plan for Ohio River opposed at hearing – Agency proposes relaxing standards -

May 12, 2006 – Council approves sewer, drainage bonds- Upgrades can now move forward –

May 11, 2006 – MSD requesting \$50 million more for improvements –

April 13, 2006 – River users could face water-quality dangers, relaxed standards would be tied to current speed –

April 12, 2006 – Sewer project on Old Cannons Lane completed – Describes the completion of a MSD project to eliminate a chronic sanitary sewer overflow (SSO) from occurring along Old Cannons Lane, which lead to a small tributary of nearby Beargrass Creek.

August 24, 2005 – MSD drops park plan at dump-

August 3, 2005 – Tree study may lead to savings -

May 30, 2005 – A Lee's Lane Park? Good idea, if it's safe –

May 24, 2005 – Group assails MSD agreement on waste-

May 11, 2005 – MSD promotes sewer plan

April 28, 2005 – Sewer settlement –

April 28, 2005 – Health testing full of promise –

April 26, 2005 – MSD programs include checkups-

April 25, 2005 - MSD plans \$500 million upgrade describes the Press Conference announcing Louisville's signed Consent Decree.

April 25, 2005 – Deal targets sewage runoff in waterways –

January 5, 2004 – Sewer overhaul might cost customers \$1 Billion –

Voice Tribune Newspaper

July 21, 2005 – MSD improvements to alleviate sewage overflows -

BROCHURES

Rain Barrels – Provides information on how to install a rain barrel, benefits, where to purchase, and why and how to disconnect downspouts from the combined sewer system. Currently in revision.

Rain Garden (one page information handout) - Information related to the Harvard Street Rain Garden/ Rain Barrel MSD project.

2007 Rain Garden Manual – In development

Fat-Free Sewers - How to prevent Fats, Oils, and Greases from Damaging Your Home and the Environment. – Recently MSD staff has begun to send an informational letter and fat-free sewers brochure to customers upstream of sewers with grease blockages to help educate our community on how they can help prevent sewer backups from occurring.

Streams, Sewers and CSOs – What MSD is doing...and how you can help. Provides the history of Louisville's sewers system, CSO locations, how they work, why they are allowed, what MSD is doing about them, how you can help, and information on MSD's Backflow Prevention Program. – Brochure is mailed out with the Plumbing Modification Program packet to every customer who requests a free backwater valve installation from MSD.

Controlling Combined Sewer Overflows in Louisville – Provides the history, challenges, definitions, ways to reduce CSO's, MSD's long-term control plan, Project WIN information and website address, and what residents of Louisville Metro can do to help.

MSD Attacking sewer backups, Countywide inflow and infiltration elimination program brochure –

Project WIN Frequently Asked Questions Brochure -

DOOR HANGERS

Caution Sewer Backup - Used when we think there is possibility of basement backups in an area related to a problem with or MSD facility failure.

Play it Safe with Sewer Overflows - Used for localized sewer overflows outside of the house (more than likely places where we pump during wet weather events or in dry weather overflow areas)

Sewer Overflow Warning – Used as a general warning in neighborhoods that is more susceptible to overflows (CSO area, or pumped SSO areas, etc.). Not an event-based notification but more for educational purposes.

MAILERS

Metro wide mailing announcing Project WIN –Mailed to all MSD billing accounts totaling 222,309 pieces on 9/28/06 as required by the Consent Decree.

Mailing to all properties within 500' of the south shore of the Ohio River from the mouth of Beargrass Creek to the Portland canal and both sides of three forks of Beargrass Creek – totaling 13,799 properties on 9/27/06 as required in the Consent Decree.

MSD PUBLICATIONS AND NEWSLETTERS

MSD educational materials reach almost every household in Louisville Metro via newsletters, press releases, email listservs, door hangers, water bill inserts, correspondence mailings, brochures, and distribution at public meetings and events.

MSD Annual Report – Published annually and mailed to elected officials, neighborhood leaders, civic leaders, and customers (approximately 500 copies mailed yearly), and available to the public to download from the MSD website at www.msdlouky.org. We also distribute copies at public meetings and community special events and festivals.

50 years of Service – A History of the first half-century of the Louisville and Jefferson County Metropolitan Sewer District. Distributed at public meetings, workshops, and community special events and festivals

2000 Water Quality Report – Summarizes the water quality of each of the watersheds within Louisville Metro. Copies distributed at public meetings, workshops, clean sweeps, and community special events and festivals

2003 Beargrass Creek Watershed Impervious Surface Report – Linking non-point pollution and impervious surface areas to water quality. Copies distributed at public meetings, workshops, clean sweeps, and community special events and festivals

2005 Beargrass Creek Watershed State of the Streams Water Quality Report – Developed with the intent to help guide individuals address their personal impact on the watershed. Report includes environmental indicators of the watershed's overall health, and how individuals can help improve conditions or continue to allow deterioration. We distribute copies at public meetings, workshops, clean sweeps, and community special events and festivals

Crosscurrents – Published twice a year, once in the spring and once in the fall. Sent to customers who have open service requests over the past 3 years. (8,000 customers)

- **Fall 2006** – p.2 – **Buechel, Hikes Point and Highgate Springs** – Rehabilitation of our aging sewer system and water quality improvements will be completed as part of the Sanitary Sewer Overflow Mitigation plan.
- **Spring 2006** – p. 1 – **Work on overflow plan underway.** Ongoing projects MSD is performing to comply with the Consent Decree and the Clean Water Act.
- **Fall 2005** – p. 1 – **Message to our customer – Bud Schardein** delivers message of MSD streamlining its business processes to more efficient and effectively deliver services to our customers.
- **Spring 2005** – p. 1 – **Preventive maintenance reduces potential for problems.** Preventive maintenance requirements as outlined in Louisville’s Consent Decree with EPA and Division of Water.

Update - Monthly MSD newsletter available for download from the MSD website at www.msdlouky.org. Also distributed at public meetings/presentations and community special events and festivals throughout the year.

- **February 2007** - p.4 - **Project WIN prompt response to sewer overflows** - Explains new procedures in place as required under the terms in the Consent Decree to develop and implement the Sewer Overflow Response Protocol (SORP). The SORP provides the framework for systematic process of notification, documentation, and cleanup processes for sewer overflows.
- **January 2007** - p. 4 - **Project WIN, Keep storm drains clear of clippings and leaves** - Emphasizes the importance of keeping storm drains clear of leaves, yard clippings and debris to prevent flooding and overflows from occurring.
- **December 2006** - p. 2 - **Regulatory Management** - Engineering firms selected to assist MSD with sewer modeling and flow monitoring of sewer system. Accurate data collection and modeling aid in determining locations, sewer design and capacity improvements needed to reduce / eliminate overflows.

p. 4 - **Project WIN, Keep fats, oils and greases out of the sewer system** - Covers prevention tips for homeowners and businesses on steps they can take to reduce sewers from backing up by keeping grease from foods out of the sewer system.
- **November 2006** - p.1,2 - **Project WIN, Community leaders guide Project WIN** approach - MSD assembled a 25-member wet weather team consisting of community representatives, civic leaders, elected officials, and MSD staff to provide feedback

and help guide MSD with decisions relating to consent decree project design, policy, and performance measures best suited to meet the needs of the community.

p. 2, **Area Team news Project WIN:** MSD purchased three 3,500-gallon tanker trucks to help reduce sewers overflows from occurring. During heavy rains, the trucks are dispatched to sites where flows have exceeded the sewers capacity to collect and haul the excess wastewater to other facilities for treatment.

- **October 2006 – p.1, Consent Decree Spotlight, MSD announces new stream water quality initiative** – Describes goal of Project WIN to improve water quality throughout Louisville Metro by reducing CSO's and eliminating SSO's as outlined in the Consent Decree. Alerts customers that they will be receiving increased communications in the form of public signs, doorhangers, emails and updated on MSD's website @ <http://www.msdlouky.org/projectwin> , about potential risks associated with wet weather sewer overflows and how MSD plans to address them.
 - **September 2006 – p.1, Consent Decree Spotlight – Expanded Public Notification Relative to Use of Our Waterways** – describes new notification and education efforts to include additional signs in areas of SSO and CSO and along impacted streams, letter mailed to all MSD rate-payers and updates to website with information about associated risks of sewage overflows during and after a heavy rain and MSD's plan to address them.
- p.4, **Concrete test aims to reduce sewer overflows** – MSD installed a two-foot strip of porous concrete along the curb of Liberty Street outside their Main Office in an effort to reduce the amount of stormwater that enters the combined sewer system and determine benefits of installing porous concrete in other areas to reduce sewer overflows from occurring.
- **August 2006 – p.1, Flood protection initiatives receive \$5 million in federal support** – Congresswoman Northup, Army Corp of Engineer David Dale, MSD Executive Director Bud Schardein held a press conference at the Bashford Manor Flood Storage Basin to announce Louisville to receive \$5 million in federal funding towards new projects in the Beargrass Creek and Pond Creek areas that will help to prevent homes from flooding and decrease the amount of sewer overflows.
 - **July 2006 – p.1, Customer rates still below national average** – Announcing stormwater and wastewater service rates will increase 6.9 percent.
 - **May 2006 - p.1 – DiverseWorks program informs businesses of upcoming opportunities** - Minority and Women owned businesses were invited to attend DiverseWorks from the Top workshops to learn about MSD from a strategic business perspective and share how their company can help MSD provide services to our customers. Also gave overview new contract opportunity for Diverse Works-certified businesses projected over the next 20 years to reduce CSO's and eliminate SSO's under the signed Consent Decree.

p.3, **Capturing rainwater is easy and beneficial** – Describes the benefits of using rainbarrels and rain gardens: keeping excess rainwater out of the combined sewer helps to reduce sewer overflows; replenishes groundwater; saves money by reducing water consumption use on lawn and garden; and improves water quality by absorbing stormwater runoff pollutants before they reach neighboring creeks and streams.

- **January 2006** - p.2, **Area Team News, Beargrass Creek: New sewer line installed to divert 80% of flow from existing line to eliminate a frequent sewer overflow site along Old Cannons Lane has been completed.**
- **November 2005** – p.2, **Area Team News, Regulatory Management Services** – Describes projects to reduce sewer overflows underway by MSD and several engineering firms to meet the milestone deadline date of February 12, 2006 as outlined in the consent decree.
- **October 2005** – p.1, 4, **Facility honors former employee's dedication** - Press conference announcing the completion of \$8 million project to rehabilitate MSD's oldest Flood Pumping Station and dedication ceremony to rename the Buchanan Street Pump Station to the Robert J. Starkey Pumping Plant (in honor of recently deceased MSD employee). Speakers included Congresswomen Northup, Mayor Abramson, U.S. Army COE District Commander Colonel Midkiff, MSD Board Chair Beverly Wheatley, and MSD Executive Director Bud Schardein. Upgrades will reduce approximately 70 million gallons per year of CSO's discharged to the Ohio River.
- **August 2005** – p.2 – **Area Team News** – 34th Street and Buchanan Street Pumping Station – high volume pumps installed to reduce CSO's as part of MSD's action plan under the Consent Decree Agreement.
- **July 2005** – p.3, **Conversion save money and improves service** – MSD Fleet personnel came up with idea to transform a wrecked vector truck into a 'super flusher' truck equipped with a superior pumping system (greater water pressure) and cutters to keep sewer lines free of blockages and to cut tree roots that grow into sewers. Investment saved MSD approx. \$80,000 compared to the cost of new flusher truck and equipment out performs other flushers.
- **June 2005** – p.2, **Area Team News, Regulatory Management Services** – Water-quality assessments will be performed in section of Harrods Creek and all three Forks of Beargrass Creek to evaluate recent upgrades to wastewater collection system and data will help determine future improvements needed to develop long-term control plan for combined sewer overflows.

Update Extra – Changing the trend – article covers 6.9% rate increase and next five year budget and key initiatives to include \$121.3 million to address the rehabilitation and improvements of sewer system to reduce CSO's and eliminate SSO's as outlined in the Consent Decree.

- **May 2005 - p.1, 3 - MSD and regulators agree on overflow plans** - Story covers the press conference to announce the Consent Decree agreement between the Commonwealth of Kentucky, Federal EPA officials, and MSD. Speakers included Congresswoman Anne Northup, Governor Ernie Fletcher, Mayor Jerry Abramson, and MSD Executive Director Bud Schardein.
- **April 2005 - p.1, 3 - Challenges for the community** - Discusses the need to rehabilitate Louisville's aging sewer system and the requirement under the Clean Water Act to eliminate sewer overflows.
p.2 - Regulatory Management Services - An update on the second phase of Real Time Control project. The controls help to control wet-weather overflows in the combined sewer system by diverting flows to the Wheeler Basin and SW Main Diversion structure to store the excess flows until flow can be released to the MFWTP for treatment.

MAGAZINES, PUBLICATIONS, NEIGHBORHOOD NEWSLETTERS AND LWC BILL INSERTS

Louisville Magazine – Full page, color ads promoting MSD's environmental education, wastewater, flood control, stormwater, biosolids fertilizer, and Project WIN programs. Published 11 times annually. (129,000 readers)

Today's Woman – Full page, color ads promoting MSD's environmental education, wastewater, flood control, stormwater, biosolids fertilizer, and Project WIN programs. MSD Advertisement page published six times annually. (100,500 readers).

Business First – MSD Advertisement page published three times annually. Informational ads promoting MSD's wastewater, stormwater, Louisville Green fertilizer, and Project WIN programs. (60,000 readers).

Courier-Journal – Full page FEMA floodplain ads published annually. An informational ad required by FEMA designed to educate the general public on all aspects of the Floodplain Ordinance, requirements, and services provided by MSD for properties located within the floodplain. Ad includes a map showing areas located within the FEMA floodplain within the Louisville Metro area. Provides customers with MSD staff contact information to answer any questions concerning the floodplain, and references MSD's website address for additional information. \$17,000.

Eighth District Bugle – A message from Councilman Tom Owen – Summer/Fall 2006 – Belknap Neighborhood Thanks MSD for contribution to neighborhood – article

describes downspout disconnection rain garden / rain barrel installation project at 1850 Harvard Dr, to alleviate the problem of sewer overflows.

NEWS RELEASES

News Release (4/25/05) – Statement by Bud Schardein – Comprehensive Settlement Related to Clean Water Act and Sewer Overflows

News Release (4/05) - Governor Ernie Fletcher Announces Settlement on Sewage Overflows in Louisville

News Release (4/23/06) – Rain Garden and Rain Barrel Installation

News Release (9/15/06) – CSO / SSO Warning Sign Installation

News Release (9/23/06) – September 22, 2006 Classified as a Flood event and advises community to avoid contact with the Ohio River, streams and ditches until 48 hours after the rain has stopped to avoid coming in contact with sewage overflows.

PROJECTS

Rain Garden/Rain Barrel Project - 1850 Harvard Drive

MSD installed a Rain Garden and Rain Barrels in the adjoining front yards of two volunteer homeowners at 1852 and 1850 Harvard Drive in the Belknap Neighborhood as a participatory public event during the community's celebration of Earth Day on April 15, 2006. A description of the week-long installation project work and photos of the Saturday public event are posted on the web at

<http://www.msdlouky.org/photo/photo.asp?flg=SHOW&pk=9>

MSD is targeting critical neighborhoods to lessen the burden on combined sewer system, thus reducing Combined Sewer Overflows

Pervious Concrete Demonstration Project - 700 block of West Liberty Street

MSD Executive Director Bud Schardein and staff members attended the KRMCA workshop at the Girl Scout Program and Learning Center MSD, as well as a followup demonstration of the pervious pavement installation. We immediately discerned the potential for use of porous concrete in reducing stormwater runoff from streets during rain events and decided to test the material in a curb-and-gutter location. MSD installed a test strip of pervious concrete along the 700 block of West Liberty Street in downtown Louisville on August 11, 2006. The porosity of the concrete has since been observed to allow street runoff to infiltrate before reaching the catch basins, even during heavy rain. The Louisville Courier-Journal newspaper wrote an article about the MSD project titled "When it rains, it's porous" that describes the installation of the test strip of pervious concrete.

PRESENTATIONS, WORKSHOPS AND COMMUNITY EVENTS

Position Paper and PowerPoint presentation handout – Challenges for the Community... An MSD perspective, by Bud Schardein - MSD Executive Director Bud Schardein attended approximately 150 community and neighborhood meetings to discuss the water quality improvement challenges of the Wet Weather Consent Decree; educate our rate payers as to why rates will be rising and to inform them how their dollars are spent. The presentation covers the rehabilitation of our aging sewer system, on-going stormwater drainage improvements (Project DRI) and how our flood protection system works and the need to keep it updated.

Position Paper - MSD...New Focus, by Bud Schardein – MSD core business responsibilities, and combined and sanitary sewer overflow issues, - Presented to over 300 customers and elected officials at three community meetings held during November /December 2002 to report on completed projects and new initiatives and to get feedback from customers on issues they would like to see addressed.

1999 – 2005 Landscape Design & Stormwater Management Using Native Plants for Your Own Backyard – Provided maps for individual property. Distributed handouts regarding CSOs, stormwater management, non-point source pollution and watershed management.

1991 – 2007 - Annual Beargrass Creek Clean Sweeps

2005 – 2006 Professional Development Days for Jefferson County Public Schools Teachers and staff

2003- 2005 – Project EXCEL program at Veteran's Park on Chenoweth Run

2007 Volunteer woodland clean up days partnering with Olmsted Conservancy, Metro Parks,

2007 Living Landscapes and Waters Butchertown Greenway invasive plant removal

2006 – 2 workshops on Riparian Buffer systems for Living Lands and Waters

2006 – Rain Barrel and Rain Garden Workshops/Rain Barrel Painting Event

2006 - Natural Solutions Workshop – 75 attendees on Best Management Practices, porous paving

2006 RESTORE Program. Committed to Outdoor Classroom restoration at Farnsley Moreman & Kennedy Montessori schools

2006 Tree Thanksplanting Day with Foster , Kennedy, Shawnee Elementary schools

2005 – Earthsave Health Fair Community Event

Annual Big Rock Jazz Fest, along Beargrass Creek – MSD sponsors a booth to display maps, water quality reports, Project WIN informational brochures to address water quality of creek and educate the public on CSO's; and demonstrated with the Enviroscape model on ways to prevent non-point-source pollution to address water quality of creek.

Earth Day at the Louisville Zoo

Gaslight Festival -

2005 – Beargrass Creek Clean Sweep Rain Barrel Demonstration

Wastewater Treatment Plant tours –

Individual classroom presentations

"Mayors Community Conversations" – MSD staff attends the Mayors community meeting held throughout Louisville Metro each month.

WEBSITE

MSD Project WIN web site -Project WIN will involve a substantial investment from MSD customers over the next 19 years. The public has begun to receive increased communications about the potential risks of wet weather overflows and MSD's efforts to reduce them to safe levels. MSD installed signs near affected waterways, presented information at public meetings, placed brochures and other information in public places and updated its web site at <http://www.msdlouky.org/projectwin/>.

CSO Warning Signs

Permanent Overflow Warning Sign -2006 Signs placed along the Ohio River, Beargrass Creek and known SSO locations. In 2005 – First set of CSO/SSO warning signs were printed and installed.

Temporary Discharge Warning Sign –Signs placed in impacted areas

Temporary Discharge Warning Sign (En Español) - Signs placed in impacted areas

Draft Wet Weather Team Community Values

Overarching Statement about the Outcomes of the Wet Weather Team Process

The Wet Weather Team (WWT) is assisting the Louisville and Jefferson County Metropolitan Sewer District (MSD) with the development of an integrated Wet Weather Program to address the community's problems with combined sewer overflows, sanitary sewer overflows, and stormwater runoff. The Program will:

- aim to incorporate a long-term perspective;
- reflect a commitment to environmental and economic stewardship;
- enhance the quality and sustainability of life in the Louisville / Jefferson County community;
- reflect a commitment to using management practices that avoid creating future problems;
- explore the role of a comprehensive set of legal regulations; and
- use an open and transparent decision-making process.

To achieve these cross-cutting outcomes in the design of the Wet Weather Program, the Wet Weather Team will explicitly consider the impacts of potential alternatives on a set of community values. This evaluation process will require Wet Weather Team members to tackle difficult decisions, take responsibility for those decisions, and be open to change.

Introduction to the Community Values Identified by the Wet Weather Team

The values WWT stakeholders have identified are listed below. Each value description includes two parts: (1) a list of brainstormed value components, and (2) preliminary focus areas for the value. The value components include the ideas identified by WWT stakeholders in a brainstorming exercise at the September 12, 2006 WWT meeting, along with input from WWT stakeholders who were not present at that meeting and refinements suggested by MSD, the technical team, and/or the facilitation team. The preliminary focus areas for the values emerged based on presentations and WWT discussions about the baseline conditions for the values. The preliminary focus areas indicate which of the brainstormed value components are most appropriate to focus on in the benefit-cost analysis of project alternatives.

The values are divided into two categories—financial and non-financial—and are ordered alphabetically. The WWT reviewed and discussed the baseline conditions and focus areas for the non-financial values at the December 5, 2006 WWT meeting, and discussed baseline conditions and focus areas for the financial values at the January 18, 2007 WWT meeting. Input from WWT members who missed the baseline conditions presentations and discussions has also been incorporated into these value descriptions.

I. Non-Financial Values

A. Asset Protection

Brainstormed Value Components:

- Protect/improve property
- Improve drainage
- Reduce basement back-ups
- Protect historic and archaeological resources *[from EPA Long Term Control Plan guidance]*
- Protect floodplains *[from EPA Long Term Control Plan guidance]*

Preliminary Focus Areas: Reduce the number of basement backups that occur and/or the dollar value of property damage resulting from sewer backups.

B. Customer Satisfaction

Brainstormed Value Components:

- Don't interfere with quality of life
- Facilities that are accessible and user friendly *[added at the 12/5/06 WWT meeting]*
- Traffic and site access *[from EPA Long Term Control Plan guidance]*
- Utilities relocation *[from EPA Long Term Control Plan guidance]*
- Reliability of service *[from EPA Long Term Control Plan guidance]*
- Noise and vibration *[from EPA Long Term Control Plan guidance]*

Preliminary Focus Areas: Three dimensions of customer service/satisfaction are potentially relevant to evaluate: (1) the degree of disruption from construction, (2) the extent of impacts to property, and (3) the response time for addressing customer concerns. Other parameters relating to "quality of life" may also be relevant.

C. Eco-Friendly Solutions

Brainstormed Value Components:

- Incorporates climate change considerations
- Working with nature/what is in place
- Solutions are environmentally friendly (real pond, wetland)
- Natural landscape with many trees
- Sustainability: development, how to manage development
- Proper infrastructure leads development
- Preference for natural, low energy, low maintenance solutions
- Solutions that provide multiple benefits for the community *[added at the 12/5/06 WWT meeting]*

Preliminary Focus Areas: Characteristics of eco-friendly solutions include: (1) projects that provide multiple-use benefits, (2) methods of source control that mimic and/or use natural systems, (3) use of non-obtrusive construction techniques.

D. Education *[Value category added at the 12/5/06 WWT meeting; topics moved from "Environmental Justice and Equity" value below.]*

Brainstormed Value Components:

- Educated populace – learning can change behavior
- Let public know about sump pump program
- Empowering people
- Self improvement (start in own backyard, responsibility)
- Funding public service announcements
- Government should be a role model (e.g., schools could be model facilities in terms of controlling stormwater runoff) *[added by WWT stakeholders following the 12/5/06 WWT meeting]*

Preliminary Focus Areas: WWT stakeholders have not yet discussed focus areas for this value.

E. Environmental Enhancement

Brainstormed Value Components:

- Improve threatened waterways – beneficial side effects

- Improve Beargrass Creek water quality/quantity
- Protect/improve environment
- Improve recreational opportunities: fish, boat, wade
- Reduce downstream water-quality impacts on other communities/areas (e.g., Gulf of Mexico)
- Reduce/improve odors and air emissions
- Protect/improve aquatic habitat for diverse species
- Aesthetics – control of odors and floatables
- Protect wetlands *[from EPA Long Term Control Plan guidance]*
- Protect threatened and endangered species *[from EPA Long Term Control Plan guidance]*
- Create multiple-use facilities to enhance public benefit *[from EPA Long Term Control Plan guidance]*

Preliminary Focus Areas: Dimensions of the environmental enhancement value to focus on include: aquatic habitat restoration, improving dissolved oxygen levels in surface waters, aesthetics (e.g., reducing odors, trash, etc.), defining and improving “sensitive” areas for human contact, and reducing downstream impacts on biological oxygen demand.

F. Environmental Justice and Equity *[Note: cost considerations are covered under “Financial Equity” below.]*

Brainstormed Value Components:

- Equitable distribution of resources/benefits
- Equitable quality of life improvement (help challenged areas) – environmental justice
- Equitable responsibility for problem solving
- Equitable service and equitable siting of facilities (don’t locate all facilities in minority or low-income neighborhoods)
- Minimize household relocations
- Consider existing or planned land use of construction sites *[from EPA Long Term Control Plan guidance]*

Preliminary Focus Areas: With environmental justice and equity, it is important to pay attention to the balance in the distribution of (1) capital investments, (2) facility construction and siting, and (3) service provision to different segments of the community.

G. Public Health Enhancement

Brainstormed Value Components:

- Protect/improve health
- Safety of neighbors
- Minimize potential for encountering hazardous materials at construction sites *[from EPA Long Term Control Plan guidance]*

Preliminary Focus Areas: A key focus area for the public health value is on water-borne bacteria (pathogens).

H. Regulatory Compliance

Brainstormed Value Components:

- Compliance – Clean Water Act
- Compliance – Clean Air Act
- Compliance – Consent Decree (specifics)

Preliminary Focus Areas: Dimensions of compliance include wastewater treatment plant permit discharge and reporting violations, the frequency and volume of CSOs, the number and volume of avoidable SSOs, and attaining water quality standards.

II. Financial Values

A. Economic Vitality

Brainstormed Value Components:

- Affordability of rates and fees
- Affordability – housing
- Maintain competitive industrial rates – keep costs down
- Avoid excessive charges and connection fees for new development (don't push more development outside Jefferson County)
- Fiscal transparency – communicate costs and the impacts on rates
- Make sure that any rate and fee increases are predictable and transparent
- Adequacy for development – supports smart growth
- Revitalize urban core

Preliminary Focus Areas: Focus areas for this value include: (1) average residential rates, (2) average commercial/industrial rates, and (2) development fees.

B. Financial Equity

Brainstormed Value Components:

- Equitable assignment of costs
- Natural state of cause and effect: ownership of impacts, assigns costs
- Impact-weighted cost structure
- Consider the burden on fixed income and low-income populations
- All neighborhoods have the same value

Preliminary Focus Areas: There are two main focus areas for this value: (1) the net cost to low-income populations (based on rates and any assistance) and (2) rates and fees that are linked to the cost to serve (i.e., the level of impact).

C. Financial Stewardship

Brainstormed Value Components:

Cost-Benefit Considerations

- Financial common sense
- Maximize use of rate \$ [“biggest bang for the buck”]
- Cost-effective in-stream results – don't spend money without discernable benefits
- Reasonableness: be cost conscious; be reasonable regarding how and when people use streams
- Consider the cost-benefit ratio: make certain that benefits are worth the money invested

Other Considerations

- Consider cost – achieve through volunteers
- Incentives for “preferred” behaviors
- Market incentives [observer comment]
- Take advantage of corporate sponsorship [observer comment]

- Operability *[from EPA Long Term Control Plan guidance]*
- Constructability *[from EPA Long Term Control Plan guidance]*
- Institutional constraints *[from EPA Long Term Control Plan guidance]*
- Adaptability to phased implementation *[from EPA Long Term Control Plan guidance]*

Preliminary Focus Areas: This value will be addressed through the values-based analysis of the benefit-cost ratio of project alternatives.

Values Weighting Straw Poll

WWT Meeting #6—February 2007

Instructions: Please distribute 55 points across the values. The weighting of the values will inform the selection of Wet Weather Program alternatives reflective of the Wet Weather Team's priorities and key interests.

- ★ Assign points to the values based on their use for selecting alternatives, not necessarily based on your general feelings about the values overall.
- ★ You may weight each value equally (i.e., 5 points per value).
- ★ You may not give more than 20 points to any one value.
- ★ Use positive, whole numbers only.
- ★ Please do not consult your peers on the WWT while preparing your ballot.
- ★ Relax and have fun with this!

Non-Financial Values:

Asset Protection _____

Customer Satisfaction _____

Eco-Friendly Solutions _____

Education _____

Environmental Enhancement _____

Environmental Justice and Equity _____

Public Health Enhancement _____

Regulatory Compliance _____

Financial Values:

Economic Vitality _____

Financial Equity _____

Financial Stewardship _____



TOTAL:
(should add up to 55) _____

Thanks!

Value:	Regulatory Compliance		Performance Measure		Impact					Rationale	Measurement Method		
	WWTP Peak Flows		BGC CSOs		Peak flow delivered to WWTP versus rated peak hour capacity of plant	Peak flow exceeds rated capacity by more than 50%	Peak flow exceeds rated capacity by 20 - 50%	Peak flow exceeds rated capacity by 10 - 20%	Peak flow exceeds rated capacity by less than 10%			Peak flow is within rated capacity	
			CSOs in Ohio River		Discharge flow rate % of receiving stream flow	Discharge > 5%	Discharge 1 - 5%	Discharge 1 - 0.2%	Discharge 0.1 - 0.2%	Discharge <0.1%	WWTPs have ability to handle small short term peaks without exceeding discharge standards, but significant peaks may result in process washout and associated failure of discharge permit limits.	Measurement will be from analyzing plant influent flows against pre-determined plant stress-test results and operating criteria.	
					Average Annual Overflow Volume (AAOV)	100 MG+ AAOV	20 - 100 MG AAOV	2 - 20 MG AAOV	1 - 2 MG AAOV	<1.0 MG AAOV	CSO Event Mean Concentration for Fecal Coliform in overflows estimated at 250,000/ 100 ml. Dilution factor 0.08% required to not exceed 200 FC/100 ml Water Quality Standard.	Measurement method will be via hydraulic model to quantify the CSO. Spreadsheet calculation to determine mix concentration.	
Performance Measure	WWTP Peak Flows	CSOs	SSOs	Release Point	< 1 year recurrence interval	1-2 yr recurrence interval	2-5 yr recurrence interval	5-10 yr recurrence interval	>10 yr storm return	100 MG AAOV (10 events) dilution factor in average Ohio River flow is 0.04%. 1.0 MG AAOV (1 event) dilution factor is 0.06%. Cumulative impact of multiple overflow locations may become significant for WQS exceedance.	Measurement methods will be via hydraulic models to quantify the CSO discharge. Spreadsheet calculation to mix concentration.		
	Exceedance Frequency	Frequency per location	Frequency per location	↘	Most Severe Impact					Least Impact	Regulations do not distinguish between potential impact of SSOs, therefore frequency and impact are the same for Regulatory Compliance value.	Measurement methods will be via hydraulic models to quantify the SSO discharge.	
					5	4	3	2	1				
Frequency	6-10 per year	>10 per year	< 1 year recurrence interval	Most Likely	5	25	20	15	10	5			
	1-6 per year	4-10 per year	1-2 yr recurrence interval		4	20	16	12	8	4			
	1-2 year recurrence interval	1-4 per year	2-5 yr recurrence interval		3	15	12	9	6	3			
	2-5 year recurrence interval	1-2 year recurrence interval	5-10 yr recurrence interval		2	10	8	6	4	2			
	>5 year recurrence interval	>2 year recurrence interval	>10 yr storm return	Least Likely	1	5	4	3	2	1			

Acronyms
 AAOV = Average annual overflow volume SSO = Sanitary sewer overflow
 BGC = Beargrass Creek WQS = Water quality standards
 CSO = Combined sewer overflow WWTP = Wastewater treatment plant
 MG = million gallons

Value:	Public Health Enhancement		Performance Measures			Impact					Rationale	Measurement Method
	WWTP Peak Flows		Peak flow delivered to WWTP versus rated peak hour capacity of disinfection system	Peak flow exceeds rated capacity by more than 50%	Peak flow exceeds rated capacity by 20 - 50%	Peak flow exceeds rated capacity by 10 - 20%	Peak flow exceeds rated capacity by less than 10%	Peak flow is within rated capacity	WWTPs have ability to handle small short term peaks without exceeding discharge standards, but significant peaks may result in process washout and associated failure of discharge permit limits.	Measurement will be from analyzing plant influent flows against pre-determined plant stress-test results and operating criteria.		
Performance Measures	WWTP Peak Flows		CSOs and SSOs		Release point	Discharge where volume is > 0.04% of stream's flow	Discharge to water or ground in high public use or access area	Discharge to water in low public use or access area. Basement back-up	Discharge to ground in low public use or access area, discharge contained and cleaned up.	No discharge or de minimus quantity	Not all discharges violate the Clean Water Act. Discharges vary in the impact to public health and the environment. Therefore, EPA developed guidance on how to set priorities based on the risk to the public's health and the environment under their Enforcement Management System in Chapter X, titled "Setting Priorities for Addressing Discharges from Separate Sanitary Sewers." The assigned consequences follow the intent of the principles and priorities presented in the chapter. SSO Event Mean Concentration for Fecal Coliform estimated at 500,000/100ml. Dilution factor 0.04% required to not exceed 200 FC/100 ml Water Quality Standard.	Measurement methods will be via hydraulic models to quantify the SSO discharge and the GIS to establish relative distance from designated locations or objects.
	Exceedance Frequency	Frequency per location	Frequency per location		Most Severe Impact				Least Impact			
Frequency	6-10 per year	>10 per year	< 1 year recurrence interval	Most Likely	5	25	20	15	10	5		
	1-6 per year	4-10 per year	1-2 yr recurrence interval		4	20	16	12	8	4		
	1-2 year recurrence interval	1-4 per year	2-5 yr recurrence interval		3	15	12	9	6	3		
	2-5 year recurrence interval	1-2 year recurrence interval	5-10 yr recurrence interval		2	10	8	6	4	2		
	>5 year recurrence interval	>2 year recurrence interval	>10 yr storm return	Least Likely	1	5	4	3	2	1		

Acronyms
 CSO = Combined sewer overflow SSO = Sanitary sewer overflow
 FC = Fecal coliform WWTP = Wastewater treatment plant
 GIS = Geographic information system

Pumped SSO Abatement for Beechwood Village

Wet Weather Team
Stakeholder Group Meeting No. 6
February 13, 2007

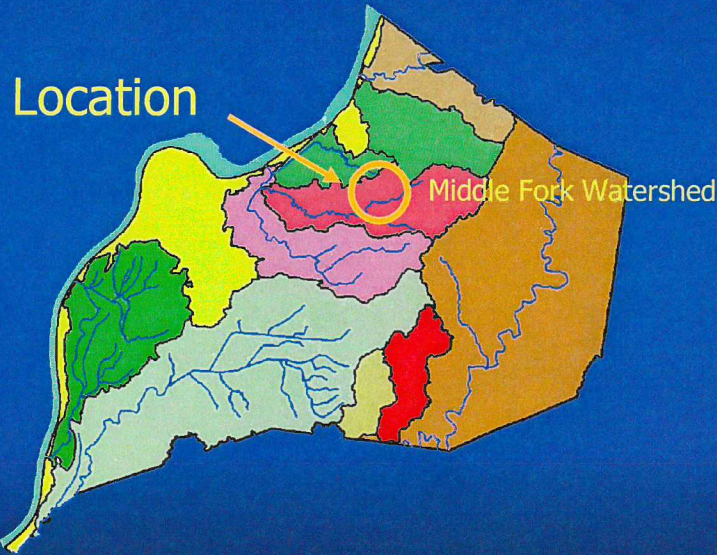
Louisville & Jefferson County
Metropolitan Sewer District

Presentation Outline

Beechwood Village Case Study – Representative of
Future Projects

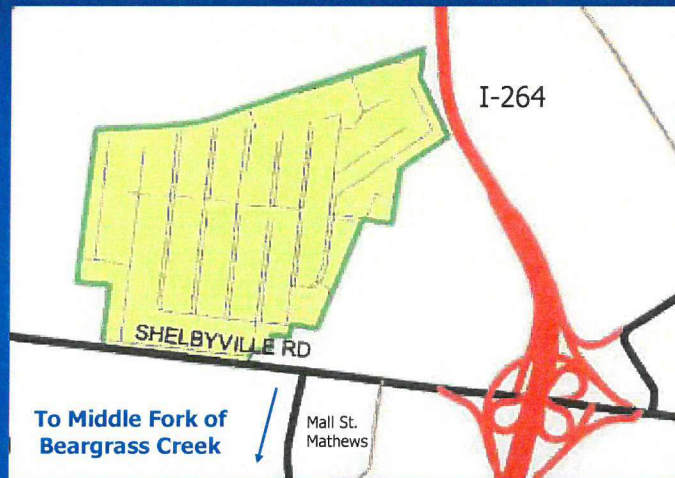
- Problem Definition
- Problem Causes
- Past Remediation Efforts
- Remediation Results
- Current Status
- Strategy Discussion

Beechwood Village Pumped SSOs



3

Beechwood Village



Approx. 187 Acres
665 homes
Age of system: 40 years +
Problem duration: 40 years +

4

Problem Definition

Beechwood Village (BWV) has a long history of sanitary sewer overflows and basement back-ups. During wet weather, portable pumps are set at 5 critical manholes. Dilute sewage is pumped from the manholes, via adjacent storm sewers, to the Middle Fork of Beargrass Creek behind the Mall St. Mathews. Pumping is needed to prevent basement back-ups and SSOs in streets.

Year	Overflow Events	Volume (MG)
2001	13	19.1
2002	17	28.1
2003	17	23.4
2004	35	39.8
2005	10	21.9

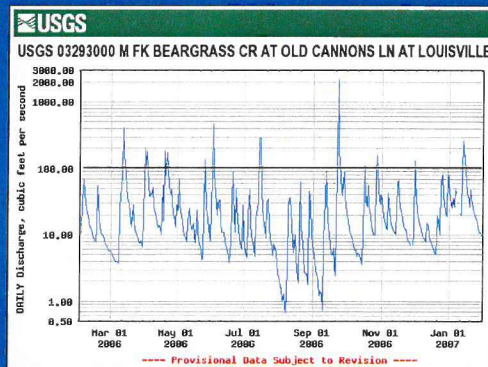
MG = millions of gallons

5

Problem Definition (cont.)

Water Quality and Health Impacts

- Average overflow event 1.4 MG
- Mean flow in Middle Fork 20 MGD – storm flows typically can take flows to 150 MGD and higher
- Estimated fecal coliform concentration in Middle Fork due to BWV SSO discharge would be 2,300 cfu/100 ml (Event Mean Concentration [EMC] = 250,000) at peak flows
- Estimated BOD concentration in Middle Fork due to SSO discharge 0.7 mg/l (EMC = 75 mg/l)



Summary – Beechwood Village pumped SSOs are a significant contributor of fecal coliforms, and a minor contributor to dissolved oxygen (DO) depletion

6

Problem Definition (cont.)

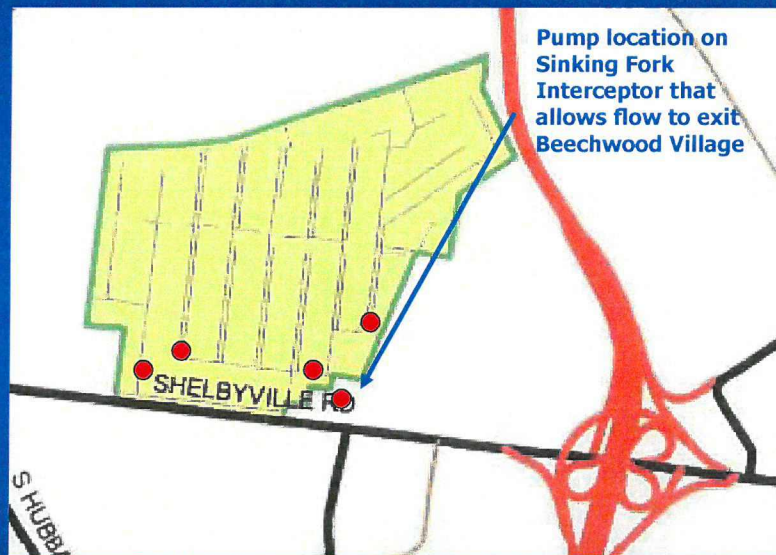
Consent Decree Requirements:

"Eliminate unauthorized discharges, including those resulting from MSD's use of pumps within the Hike's Point and Beechwood Village areas..."

- Interim Sanitary Sewer Discharge Plan dealing with the "Big 4" SSOs due by September 30, 2007
- Big 4 includes Beechwood Village, Hikes Point, Southeast Diversion Structure and Highgate Pump Station
- CD schedule for Big 4 elimination requires aggressive schedule
- Complete construction of remedial measures by December 31, 2011 for Beechwood Village area

7

Problem Definition (cont.)



● Pumped SSO locations

8

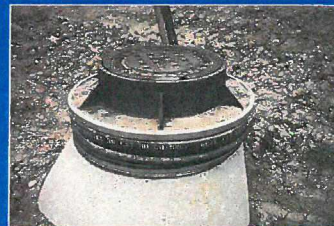
Causes of the Problem

- The sanitary sewer system is in very poor condition (manhole defects, roots, cracks, missing pipe, significant infiltration)
- High groundwater table results in high rates of infiltration through system defects
- Inflow sources on private property (downspouts, sump pumps, and foundation drains illegally connected to the sanitary sewer) are significant flow contributors
- Surface flooding is common and stormwater culverts are too small for additional flow

9

Risk Management Strategies

- Eliminate – no chance of continuing problem
 - Construct new facilities
 - Address high groundwater
 - Address surface flooding
- Prevent – minimize chance of continuing problem
 - Reduce infiltration and inflow (I/I) by lining sewers and sealing manholes
 - Disconnect non-sanitary flow sources
 - Lower groundwater level
- Mitigate – minimize damages caused by continuing problem
 - Plumbing Modification Program (PMP)
- Respond – deal with continuing problem
 - Pumped SSOs
 - Clean up after events
- Share – make problem ownership not just MSD
 - Public Education
 - "Last Call" PMP notification



10

Work Completed to Date

Strategy

Results

➤ Prevent

- Private Property Disconnection Pilot Program
- Sewer Rehabilitation
- Manhole Sealing
- Private Lateral Lining Project



Short term reduction, but little long term I/I reduction

➤ Mitigate

- Plumbing Modification Program



Reduced back-ups due to PMP and pumped SSOs

➤ Share

- Public Meetings
- Mailings



Reduced back-ups due to greater participation in PMP

But pumped SSOs are still needed to avoid widespread back-ups

11

Beechwood Village SSO Elimination Current Status

- BWV customers notified in public meetings (Nov. 2006) that sewer system will be rebuilt
 - New sanitary sewers in public right of way
 - Every street in BWV will be torn up and rebuilt
 - All basement gravity service eliminated – converted to pumps at no cost to customer
 - Ongoing Operations & Maintenance of pumps become customer responsibility
 - Access to every basement will be required
 - Basement access may be contentious
 - Schedule impacts further accelerate schedule pressure

12

Beechwood Village Solution Requires Other Issues to Be Addressed

Surface drainage must be improved to avoid water over manholes

- Part of MSD's core responsibility
- New storm drain system?
 - Pipes or ditches?
 - Convert existing sanitary sewer?

High groundwater will continue to challenge any sewer system

- Groundwater control not previously part of MSD's responsibilities
- High groundwater will eventually find ways into new pipes
- High groundwater has risks of structural damage to homes
- Where will foundation drains discharge to?

13

Beechwood Village Strategy Discussion

- Additional opportunities/options to consider?
- Pros and cons of using the existing sewer as a stormwater management solution?
- Suggestions for public engagement to overcome anticipated resistance to MSD access to basements?

14

Non-Financial Values Performance Measures Vol. 1 – Regulatory Compliance and Public Health Enhancement

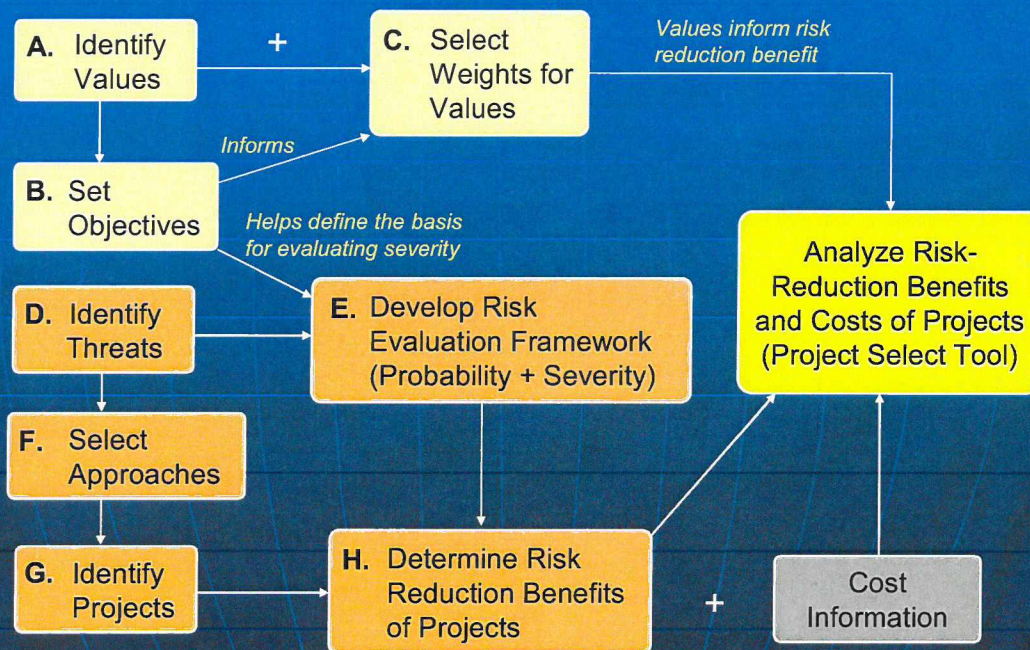
Wet Weather Team
Stakeholder Group Meeting No. 6
February 13, 2007

Louisville & Jefferson County
Metropolitan Sewer District

Presentation Outline

- Review the different uses of non-financial values for decision-making and long-term monitoring
- Review the scope and primary focus areas for Regulatory Compliance and Public Health Enhancement values
- For each of these non-financial values:
 - Review the proposed probability and severity scales
 - Discuss the rationale behind each of the scales
 - Describe how the scores will be developed for each scale
 - Discuss each scale to ensure understanding and receive stakeholder input

Values-Based Risk Management Planning Process



3

Values and Performance Scales Are Used in Many Ways

- Comparing between alternatives for solving specific problems (cost-effectiveness plus some of the non-financial values)
- Prioritizing projects to determine overall program (all financial and non-financial values)
- Sequencing projects to develop schedule (financial and non-financial values, plus other implementation "readiness" factors)
- Monitoring progress through the life of the program implementation (financial and non-financial values, with different performance measures)

4

Performance Measures for Regulatory Compliance



5

Regulatory Compliance

Potential threats to regulatory compliance

- Treatment plant effluent discharge permit violations
 - effluent discharges above limits
 - plants operating outside permitted capacities
- CSO controls fail to reduce overflow volume and frequency to meet regulatory expectations
- SSO controls fail to eliminate "avoidable" SSOs
- Schedule and reporting requirements of Consent Decree are not met
- Air emissions from stationary engines and biosolids dryers (in compliance with air quality permits)

Focus areas are treatment plant effluent discharge permit compliance, CSO volume and frequency reductions, eliminating avoidable SSOs, and water quality regulations relative impacts. Water quality regulations are also focus for program "roll-up."

6

Regulatory Compliance Current Status of Focus Areas

- Treatment plant performance shows 90% compliance record (w/o construction interference)
 - some package plants have performance issues at high flow
 - some regional and package plants have peak flows above capacity
- CSO controls currently do not meet regulatory expectations for volume, frequency, or receiving water quality
- MSD still has numerous SSOs that are being addressed by Capacity, Management, Operation, and Maintenance (CMOM) Program and the Sanitary Sewer Discharge Plan (SSDP)
- All Consent Decree reporting schedules and milestone deadlines have been met to date

Regulatory Compliance – The “Big Picture”

Value:	Regulatory Compliance		Performance Measure		Impact					
	WWTP Peak Flows	BGC CSOs	CSOs in Ohio River	SSOs	Peak flow delivered to WWTP versus rated peak hour capacity of plant	Peak flow exceeds rated capacity by more than 25%	Peak flow exceeds rated capacity by 25 - 50%	Peak flow exceeds rated capacity by 10 - 25%	Peak flow exceeds rated capacity by less than 10%	Peak flow is within rated capacity
Performance Measure	Exceedance Frequency	Frequency per location	Frequency per location	Release point	< 1 year recurrence interval	1-2 yr recurrence interval	2-5 yr recurrence interval	5-10 yr recurrence interval	> 10 yr storm return	
					Most Severe Impact					Least Impact
Frequency	< 10 per year	> 10 per year	< 1 year recurrence interval	5	25	20	15	10	5	
	1-6 per year	< 10 per year	1-2 yr recurrence interval	4	20	16	12	8	4	
	1-2 year recurrence interval	1-4 per year	2-5 yr recurrence interval	3	15	12	9	6	3	
	2-5 year recurrence interval	1-2 year recurrence interval	5-10 yr recurrence interval	2	10	8	6	4	2	
	> 5 year recurrence interval	> 2 year recurrence interval	> 10 yr storm return	1	5	4	3	2	1	

We will deal with each component in this matrix separately.

Regulatory Compliance – Probability Scales Recognize Different Permitting Categories

- Treatment Plants – Peaks over rated capacity often do not result in effluent discharge permit exceedance:
 - Peaks consistently over rated capacity (6–10 times per year) indicate probable compliance problem (5 points)
 - Peaks exceeding rated capacity every 5 years unlikely to cause any permit exceedance (1 point)
- CSOs – Regulations “presume” up to 4 overflows per year will result in compliance:
 - Greater than 10 overflows per year indicate need for additional control (5 points)
 - Two-year recurrence interval clearly beyond regulatory requirements (1 point)
- SSOs – Not allowed under regulations:
 - Overflow more than once per year is unacceptable (5 points)
 - Overflow less often than every 10 years is beyond the accuracy of predictive models

9

Regulatory Compliance – Treatment Plant Impact Scales Relate to Plant Peak Flow Capacities

Peak flow exceeds rated capacity by more than 50%	Peak flow exceeds rated capacity by 20 - 50%	Peak flow exceeds rated capacity by 10 - 20%	Peak flow exceeds rated capacity by less than 10%	Peak flow is within rated capacity
5 points	4 points	3 points	2 points	1 point

Calculation based on typical wastewater treatment plant (WWTP) ability to absorb minor (less than 20%) short term flow peaks and still achieve effluent discharge permit compliance. Flows in excess of 50% of rated peak capacity usually cause at least short-term effluent discharge standard exceedance.

10

Regulatory Compliance – Ohio River Impact Scales Reflect Average Annual Overflow Volume Reduction

100 MG+ AAOV	20 - 100 MG AAOV	2 - 20 MG AAOV	1 - 2 MG AAOV	<1.0 MG AAOV
5 points	4 points	3 points	2 points	1 point

Calculation is based on Ohio River dilution (at average flow) to meet fecal coliform Water Quality Standards (WQS) for a combination of the number of events and volume of the events. For example, 10 events per year with 100 MG AAOV results in dilution required to achieve 400 cfu/100ml. One event of 1 MG is well below dilution required to achieve 200 cfu/100ml.

AAOV = Average annual overflow volume
 cfu = "colony forming unit," roughly translates as number of fecal coliforms in the sample

11

Regulatory Compliance – BGC Impact Scales Reflect CSO Percentage of Stream Flow

Discharge > 5%	Discharge 1 - 5%	Discharge 1 - 0.2%	Discharge 0.1 - 0.2%	Discharge < 0.1%
5 points	4 points	3 points	2 points	1 point

Calculation based on dilution required to achieve contact recreation water quality standards if Event Mean Concentration (EMC) of overflow is 250,000 cfu /100 ml

12

Regulatory Compliance – SSO Impact Equals Frequency

<1 year recurrence interval 5 points	1-2 yr recurrence interval 4 points	2-5 yr recurrence interval 3 points	5-10 yr recurrence interval 2 points	>10 yr recurrence interval 1 point
-----------------------------------------	----------------------------------------	----------------------------------------	-----------------------------------------	---------------------------------------

SSO frequency and impacts are the same, since regulations do not distinguish between volume or locations of unauthorized discharges.

Consent Decree penalties distinguish between "Big Four" SSOs (\$5,000/day) and all other SSOs (\$500/day)

Regulatory Compliance Example

Base case – WWTP peak flows exceed 50% over capacity 6–10 times per year

Case 1 - Alternative increases capacity so that 10 times per year recurrence event is within peak capacity (15 pts)

Case 2 – 2-year recurrence interval peak capacity exceeded by 15% (16 points)

Case 3 – 5-year recurrence interval peak capacity exceeded by 50% (15 points)

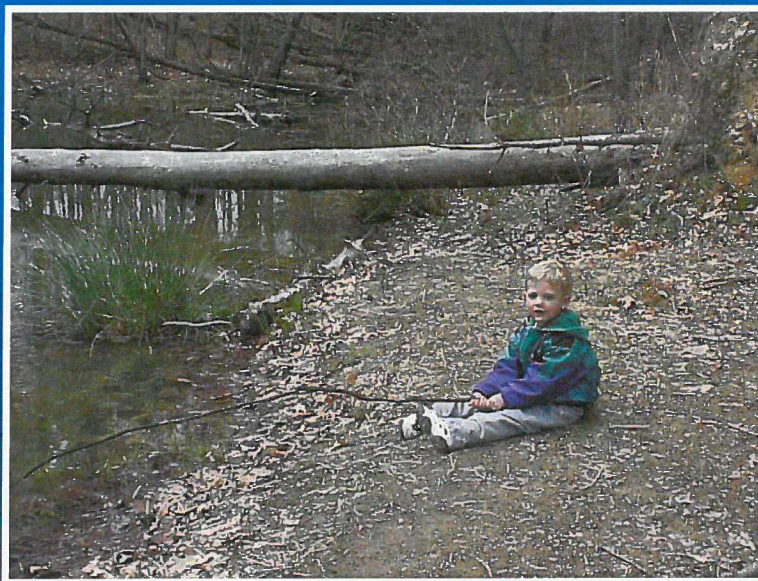
Alternative scores 16 points – the highest of the various ways to evaluate

Value:	Regulatory Compliance		Performance Measure		Impact					
	WWTP Peak Flows	CSDs	SSOs	Release point	<1 yr recurrence interval	1-2 yr recurrence interval	2-5 yr recurrence interval	5-10 yr recurrence interval	>10 yr recurrence interval	Least Impact
Performance Measure	Extension Frequency	Frequency per location	Frequency per location	↓	Peak flow delivered to WWTP exceeds rated capacity by 25-50%	Peak flow exceeds rated capacity by 25-50%	Peak flow exceeds rated capacity by 10-20%	Peak flow exceeds rated capacity by less than 10%	Peak flow is within rated capacity	
					Discharge flow rate % of receiving stream flow	Discharge > 6%	Discharge 1-6%	Discharge 1-3%	Discharge 1.1-4%	Discharge <1%
Frequency	6-10 per year	4-10 per year	1-2 yr recurrence interval	Likely	Annual Average Overflow Volume (AAOV)	100 MG AAOV	20-100 MG AAOV	3-30 MG AAOV	1-2 MG AAOV	<1 MG AAOV
					WWT Peak Flows	5	4	3	2	1
	1-2 yr recurrence interval	1-2 yr recurrence interval	2-5 yr recurrence interval	5-10 yr recurrence interval	>10 yr recurrence interval					
	1-2 yr recurrence interval	1-2 yr recurrence interval	2-5 yr recurrence interval	5-10 yr recurrence interval	>10 yr recurrence interval					
	2-5 yr recurrence interval	2-5 yr recurrence interval	5-10 yr recurrence interval	>10 yr recurrence interval						
	5-10 yr recurrence interval	5-10 yr recurrence interval	>10 yr recurrence interval							
	>10 yr recurrence interval	>10 yr recurrence interval								

Regulatory Compliance Performance Measures Discussion

15

Public Health Enhancement Performance Measures



16

Enhance Public Health

■ Potential Threat

- Air pollution
 - particulates
 - hazardous air pollutants
 - odor
- Land pollution
 - biosolids management
 - hazardous materials
- Water pollution
 - pathogens
 - carcinogens

■ Current Status

- In compliance
 - thermal system permits
 - "minor source" (0.01%)
 - addressed elsewhere
- In compliance
 - "Class A - EQ"
 - hazmat response
- Mixed compliance
 - recreation standards
 - monitor only

Water-borne pathogens are the most significant wet weather issue.

17

Enhance Public Health

Water-borne Pathogens Have Multiple Contact Pathways

- Contact Recreation
 - Primary contact (swimming)
 - Secondary contact (boating, wading)
- Incidental contact
 - Surface discharges (SSOs etc.)
 - Back-ups
 - service connection blockage
 - main sewer surcharge or blockage
- Drinking water ingestion
- Water Quality Standards
 - 200 cfu/100 ml avg, 400 cfu/100 ml max exceeded many rain events
 - 400 cfu/100 ml avg (Nov-April) exceeded major rain events
- No Standards = no data
 - SORP provides for containment and disinfection
 - Clean-up and disinfection
 - majority of back-ups are not MSD caused
 - MSD goal 3 hour response, 24 hour correction
- WQS protect WTP intakes
 - 1000 cfu/100 ml avg usually met
 - Modern WTP practices provide excellent protection

SORP = Sewer Overflow Response Protocol

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Enhance Public Health – The “Big Picture”

Value:	Public Health Enhancement		Performance Measures		Impact					
	WWTP Peak Flows	CSOs	CSOs and SSOs	Release point	Peak flow exceeds rated capacity by more than 50%	Peak flow exceeds rated capacity by 20-50%	Peak flow exceeds rated capacity by 10-20%	Peak flow exceeds rated capacity by less than 10%	Peak flow is within rated capacity	
Performance Measures	Exceedance Frequency	Frequency per location	Frequency per location	Release point	Discharge where volume is > 0.01% of stream's flow	Discharge to water or ground in high public use or access area	Discharge to water in low public use or access area. Basement back-up	Discharge to ground in low public use or access area. discharge contained and cleaned up.	No discharge or de minimus quantity	
				Most Severe Impact					Least Impact	
Frequency	6-10 per year	>10 per year	< 1 year recurrence interval	Most Severe	5	25	20	15	10	5
	1-6 per year	4-10 per year	1-2 yr recurrence interval		4	20	16	12	8	4
	1-2 year recurrence interval	1-4 per year	2-5 yr recurrence interval		3	15	12	9	6	3
	2-5 year recurrence interval	1-2 year recurrence interval	5-10 yr recurrence interval		2	10	8	6	4	2
	>5 year recurrence interval	>2 year recurrence interval	>10 yr storm return	Least Severe	1	5	4	3	2	1

19

Enhance Public Health – Probability Scales Match Regulatory Compliance Scales

- Treatment Plants – Peaks over rated capacity of disinfection system often do not result in discharge permit exceedance:
 - Peaks consistently over rated capacity (6–10 times per year) indicate probable compliance problem (5 points)
 - Peaks exceeding rated capacity every 5 years unlikely to cause any permit exceedance (1 point)
- CSOs – regulations “presume” up to 4 overflows per year will result in compliance:
 - Greater than 10 per year indicate need for additional control (5 points)
 - Two-year recurrence interval clearly beyond regulatory requirements (1 point)
- SSOs – not allowed under regulations:
 - Overflow more than once per year is unacceptable (5 points)
 - Overflow less often than every 10 years is beyond the accuracy of predictive models

20

Enhance Public Health – Treatment Plant Impact Scales Relate to Disinfection System Peak Flow Capacity

Peak flow exceeds rated capacity by more than 50%	Peak flow exceeds rated capacity by 20 - 50%	Peak flow exceeds rated capacity by 10 - 20%	Peak flow exceeds rated capacity by less than 10%	Peak flow is within rated capacity
5 points	4 points	3 points	2 points	1 point

Calculation based on typical WWTP ability to increase dose to correct for short term flow peaks and still achieve effluent discharge permit compliance. Flows in excess of 50% of rated peak capacity usually cause at least short-term effluent discharge standard exceedance.

21

Enhance Public Health – CSO and SSO Impact Scales Reflect Pathogen Load or Potential Public Contact

Discharge where volume is > 0.04% of stream's flow	Discharge to water or ground in high public use or access area	Discharge to water in low public use or access area. Basement back-up	Discharge to ground in low public use or access area, discharge contained and cleaned up.	No discharge or de minimus quantity
5 points	4 points	3 points	2 points	1 point

Impact scales consistent with EPA Guidance "Setting Priorities for Addressing Discharges from Separate Sanitary Sewers." Five points based on stream dilution required to achieve WQS if overflow event mean concentration is 500,000 cfu/100ml.

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Enhance Public Health Example

Base case – SSO that discharges to high public use area several times per year

Case 1 – Alternative results in no significant discharge up to 5-year recurrence interval (17 points)

Case 2 – Predicted discharge at 10-year recurrence interval (12 points)

Alternative scores 17 points

Value:	Public Health Enhancement		Performance Measures		Impact				
	WWTP Peak Flows	CSOs and SSOs	Peak flow delivered to WWTP versus rated peak hour capacity of disinfection system	Release point	Peak flow exceeds rated capacity by more than 50%	Peak flow exceeds rated capacity by 20-50%	Peak flow exceeds rated capacity by 10-20%	Peak flow exceeds rated capacity by less than 10%	Peak flow is within rated capacity
Performance Measures	WWTP Peak Flows	CSOs and SSOs	Release point		Discharge where volume is > 1.0% of urban's flow	Discharge to water or ground in high public use or access area	Discharge to water in low public use or access area, flow must back-up	Discharge to ground in low public use or access area, discharge contained and cleared up	No discharge or de minimus quantity
	Exceedance Frequency	Frequency per location	Frequency per location	↓	Worst Severe Impact				Least Impact
Frequency	5-10 per year	>10 per year	<1 yr recurrence interval	Highly Sensitive	5	25	15	10	5
	1-4 per year	4-10 per year	1-2 yr recurrence interval		4	20	10	5	1
	1-2 year recurrence interval	1-4 per year	2-5 yr recurrence interval		3	15	12	6	1
	2-5 year recurrence interval	1-2 year recurrence interval	5-10 yr recurrence interval		2	10	6	4	2
	10 year recurrence interval	>2 year recurrence interval	>10 yr return	Low Sensitivity	1	5	4	3	2

Public Health Enhancement Performance Measures Discussion