

Wet Weather Team Data Request and Monitoring Suggestions List Working Draft – July 7, 2008

The following is a list of data requests and monitoring suggestions made by Wet Weather Team (WWT) members for consideration for MSD's Integrated Overflow Abatement Plan (IOAP). This includes requests for information to support the WWT's deliberations and suggestions for the research, monitoring, and evaluation efforts associated with MSD's IOAP. These ideas were identified both at WWT meetings and through individual communications with WWT members (e.g., via e-mail). This list will remain "live" throughout the remainder of the WWT effort, and WWT members are encouraged to send additional suggestions to the facilitation team. Requests that have been responded to will be kept on this list, but marked as "Addressed." New ideas will be listed under a "What's New" section at the beginning of the document for easy reference, as well as under the appropriate section later in the document.

Note: For monitoring and evaluation suggestions related to the IOAP public education and outreach plan, please see the Wet Weather Team Education and Outreach Idea List.

What's New (July 2008)

1. (I-A-9) – Additional information on the proposed Project WIN Public Information and Outreach program, including plans to develop an educational book (such as the "Kid WIN" book shown in the June 19th WWT presentation) and the details of MSD's plans to expand activities with middle schools.
2. (I-B-8) – Information on the amount of runoff that a mature tree would absorb.
3. (I-C-9) – Use a consistent format to show the results of the benefit-cost analysis of CSO and SSO project alternatives. Using a standard format facilitates the WWT's understanding of the information as well as the credibility of the analysis.
4. (I-C-10) – Create a map that shows the CSO and SSO overflow locations and/or a reference guide to help readers identify the locations of projects and overflow locations.
5. (I-C-11) – Develop a map showing the locations of green infrastructure demonstration project sites.
6. (II-B-4) – Keep track of how the rain barrels distributed to property owners actually work.
7. (II-C-2-b) – Include questions about who watches Metro TV and how people value the community's water resources in surveys about the effectiveness of Project WIN education and outreach efforts.

I. Requests for Information to Support WWT Deliberations

A. Requests for Information on Current Conditions and Current Plans for the IOAP

1. Data on how fecal coliform levels change with flow volumes.
2. Data on where water quality sampling is currently done in relation to recreational areas.
3. Current data MSD has on water quality in stream reaches (as aquatic health is an issue in some, but not all, stream reaches).
4. How MSD's development fees compare to development fees in other places.
5. Specific information on the percentage of backups that are the result of MSD's activities as opposed to private property issues.
6. Cincinnati's rates before the community started to respond to its consent decree.

7. Information on the “root causes” of wet weather CSO and SSO problems (e.g., the CSO volume attributable to residential downspouts) to assist with IOAP decision making. *[Note: This is an ongoing request.]*
8. Information on the differences between what is legal and required in the sanitary sewer system and the combined sewer system (e.g., whether or not it is legal to connect a sump pump to the combined sewer system).
9. Additional information on the proposed Project WIN Public Information and Outreach program, including plans to develop an educational book (such as the “Kid WIN” book shown in the June 19th WWT presentation) and the details of MSD’s plans to expand activities with middle schools.

B. Requests for Information of the Effectiveness and Costs of Potential Solutions

1. Information on the long-term effectiveness of strategies that rely on source prevention (e.g., rain gardens).
2. Quantitative information on the benefits and/or effectiveness of eco-friendly solutions currently used by MSD.
3. Additional information on the benefits and challenges of different control approaches (e.g., why a storage solution might be preferable to a transport solution for a particular area). *[Note: This is an ongoing request.]*
4. Information on the costs and benefits of a regulatory approach to address private I&I as compared to other control strategies.
 - a. Include information showing how the marginal costs of this approach compare to costs of other approaches and overall program costs, as there could be a lot of opposition to a new private I&I reduction program because of costs.
 - b. One potential cost comparison could be comparing the costs of a private I&I reduction program using an ordinance to the costs of building a large underground storage facility to recover a similar amount of I&I.
5. Additional information on the effectiveness of green infrastructure solutions (e.g., websites or other resources).
6. Information on whether other communities have experienced any issues with their green infrastructure efforts (e.g., Chicago’s Green Alley Program).
7. Data on community use of rain barrels over time in communities that have rain barrel programs.
8. Information on the amount of runoff that a mature tree would absorb.

C. Process Suggestions

1. Conduct assessments of different watersheds to find the best opportunities for green infrastructure.
2. Conduct additional analysis of the potential effects of behavior change and green infrastructure strategies at reducing flows into MSD’s sewer systems.
3. Examine how choices about funding sources affect the total wastewater and stormwater rates that residents pay.
4. Provide examples illustrating the implications of different combinations of funding sources (e.g., loans, bonds, pay-as-you-go) for funding the IOAP, in order to better understand the tradeoffs. *[Addressed at the January 15, 2008 Wet Weather Team Meeting]*
5. Ask someone from the Kentucky Resources Council or one of the MSD consultants to look at the current Kentucky Plumbing Code to see if it is as strong as it needs to be as it relates to CSOs and SSOs.

6. Involve experts in making financial decisions, given the relationships among the timing of projects, cash flows, bond rating, and other factors.
7. Include information on the amount of debt remaining to be paid after the Consent Decree implementation period in future funding presentations.
8. Develop a flow diagram or decision tree showing the process for identifying and selecting projects.
9. Use a consistent format to show the results of the benefit-cost analysis of CSO and SSO project alternatives. Using a standard format facilitates the WWT's understanding of the information as well as the credibility of the analysis.
10. Create a map that shows the CSO and SSO overflow locations and/or a reference guide to help readers identify the locations of projects and overflow locations.
11. Develop a map showing the locations of green infrastructure demonstration project sites.

II. Suggestions Related to the IOAP Monitoring, Evaluation, and Research Plan

A. Suggestions Related to Water Quality and Public Health Monitoring

1. Consider monitoring water quality and flow at additional locations, based upon the IOAP's objectives and the performance measures developed for the program. Potential new monitoring locations to consider include:
 - a. Intensely used public access sites within Beargrass Creek
 - b. Stream segments MSD does not monitor currently, such as Buechel Branch and upper South Fork of Beargrass Creek
 - c. Additional locations within the Floyds Fork watershed
2. Collect environmental performance data such as biological indexes of aquatic health (fish counts, macro-invertebrate sampling, etc.), nutrient sampling, downstream pollutant load, and tree cover or other measures of habitat restoration efforts.
3. Look for data on the public health impacts of polluted water (collected by the School of Public Health or the Health Department and included in an annual report).
4. Involve the research community (e.g., students at the University of Louisville's School of Public Health) in water quality monitoring and data analysis.
5. Consider whether to use EPA's quality control protocols for water quality monitoring efforts.
6. Support volunteer monitoring efforts.
 - a. Support efforts such as those practiced by the Salt River Watershed Watch program (<http://kywater.org/watch/salt/>).
 - b. Support a volunteer monitoring program to monitor water quality in streams across the county. [Note: this is also in the Education and Outreach Ideas List.]
7. Display stream monitoring data as part of an interpretive center. The display could be interactive and provide real-time data on the temperature of the water, pH, and other water quality and stream flow conditions that MSD monitors. [Note: this is also in the Education and Outreach Ideas List.]

B. Suggestions Related to the Effectiveness of Green Infrastructure Projects

1. Build monitoring components into green infrastructure projects to help demonstrate the overall effectiveness of green infrastructure solutions.
2. Pick a CSO catchment area and study the effects of rain barrels and rain gardens.

3. In order to gain information on the long-term effectiveness of strategies that rely on source prevention, conduct a demonstration project in a small area, and compare the changes in pollutant loading and stormwater flows to those of other areas.
4. Keep track of how the rain barrels distributed to property owners actually work.

C. Suggestions Related to the Effectiveness of Behavior Change Efforts

1. Conduct separate research and data analysis to supplement any data collected through surveys about people's behavior.
2. Conduct a baseline survey and follow-up surveys of residents to determine whether education and outreach efforts are effective in raising awareness and in changing behavior and perceptions on issues related to the IOAP. [Note: This is also in the Education and Outreach Ideas List.]
 - a. Develop a survey instrument (potentially with a coalition of cities) and use it every year.
 - b. Include questions about who watches Metro TV and how people value the community's water resources in surveys about the effectiveness of Project WIN education and outreach efforts.

D. Suggestions Related to the Presentation of Information in the IOAP

1. Model the water quality benefits of stormwater reduction efforts and present this information to EPA along with the benefits of overflow abatement efforts.
2. Present the results of water quality monitoring so they show the benefits of overflow abatement (e.g., don't focus on bacteria levels only during rain events, as this obscures the fact that streams usually meet the bacteria criteria at other times).

E. Other Suggestions

1. Monitor customer satisfaction data (e.g., number of hits on MSD's website, number of requests for information, customer satisfaction surveys).