Wet Weather Team Project Meeting Materials

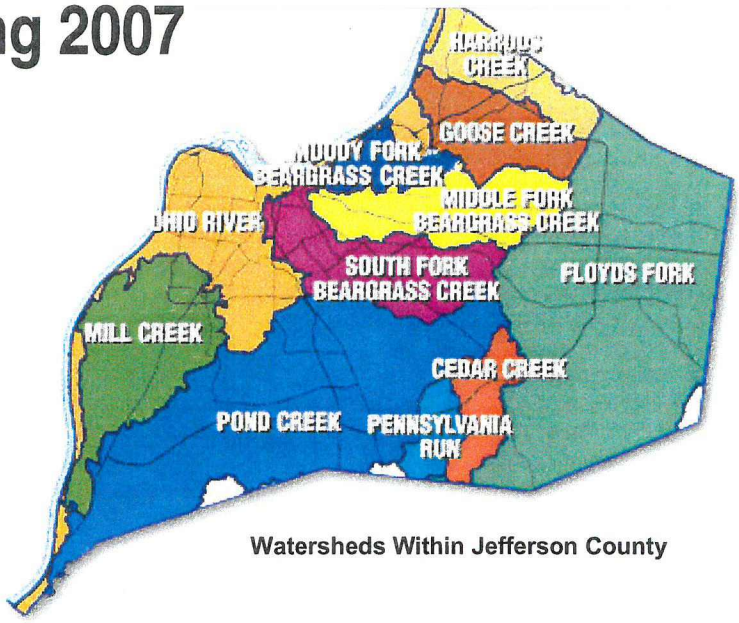
Summer 2006–Spring 2007

01.05.0205.07

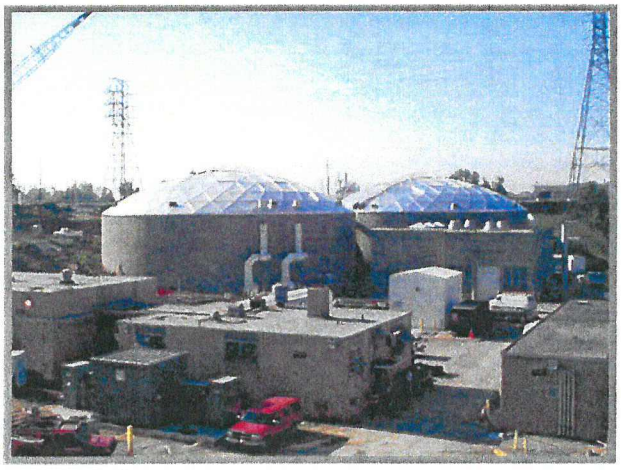
WWT Stakeholders Meeting # 5 1/18/2007

MSD

Louisville and Jefferson County
Metropolitan Sewer District



Watersheds Within Jefferson County



Agenda

Final Agenda
Louisville and Jefferson County Metropolitan Sewer District (MSD)
Wet Weather Team Meeting #5
Thursday, January 18, 2007, 4:20-8:30 PM
MSD Central Maintenance Facility, Training Room
A Commerce Center, 3401 Cane Run Road, Louisville

Meeting Objectives:

- Preview examples of how project alternatives will be evaluated based on the community values the Wet Weather Team has identified.
- Learn about the current or "baseline" conditions for the financial community values, and discuss objectives or focus areas for the financial values. (Non-financial values were discussed at the December 5, 2006 meeting.)
- Review and discuss initial plans for public involvement during the Wet Weather Team process.
- 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 **Introductions and Agenda Review (15 minutes)**

- Review meeting objectives and ground rules.

4:45 PM **Wet Weather Project Updates (15 minutes)**

- Updates on MSD wet weather activities and follow-up items from the last Wet Weather Team meeting.

5:00 PM **Preview of the Values-Based Analysis of Project Alternatives (60 minutes)**

- Demonstration of how the community values will be used in the cost-benefit analysis of project alternatives, using specific examples and draft performance scales for a selection of non-financial values.

6:00 PM **Dinner Break (20 minutes)**

Dinner will be provided for Wet Weather Team members.

6:20 PM **Discussion of Baseline Conditions and Objectives for Financial Values (90 minutes)**

- For each non-financial value (Economic Vitality, Financial Equity, and Fiscal Stewardship):
  - Review the components of the value identified by Wet Weather Team members.
  - Presentation and Q&A on the current or baseline conditions of the value.
  - Discuss possible objectives or focus areas for the value.

7:50 PM **Update on Public Involvement Plans (20 minutes)**

- Review and discuss MSD's initial plans for public involvement during the WWT process. (Public involvement activities will also be discussed at future meetings.)

8:10 PM **Opportunity for Observer Comments (10 minutes)**

8:20 PM **Wrap Up and Next Steps (10 minutes)**

- Review plans and expectations for the February 13, 2007 Wet Weather Team meeting.

8:30 PM **Adjourn**

Final Meeting Summary
Wet Weather Team Meeting #5
Thursday, January 18, 2007
MSD Central Maintenance Facility, Louisville

The Wet Weather Team (WWT), chartered by the Louisville and Jefferson County Metropolitan Sewer District (MSD), met on January 18, 2007 at MSD's Central Maintenance Facility. The objectives of the meeting were to:

- Preview an example of how project alternatives may be evaluated based on the community values that WWT stakeholders have identified;
- Learn about the current or "baseline" conditions for the financial community values identified by WWT stakeholders, and discuss potential objectives or focus areas for the financial values;
- Review and discuss initial plans for public participation efforts during the WWT process; and
- Identify next steps and expectations for the next meeting of the Wet Weather Team.

Wet Weather Project Updates

Jennifer Tice of Ross & Associates summarized the feedback that she and Rob Greenwood heard during one-on-one calls with Wet Weather Team stakeholders following the December 5, 2006 WWT meeting. The calls focused on two topics: (1) follow-up on the non-financial values discussion and (2) feedback on the WWT process. In terms of values, WWT stakeholders generally supported the set of non-financial community values discussed at the December meeting, including the addition of an "education" value. A few people suggested additional considerations for the values that will be factored into the development of performance evaluation scales.

Most participants were okay with how the process and meetings have been going overall, although almost everyone suggested some improvements. The facilitation team will be working with MSD and the technical team to respond to the suggestions. Specific changes planned include the following:

- Shortening the length of meetings so they end by 8:00 or 8:30 PM;
- Moving to a downtown meeting location (starting with the February 13th meeting);
- Streamlining and simplifying the meeting presentations;
- Allowing more time for WWT stakeholder discussions;
- Discussing potential solutions earlier in the process;
- Distributing presentations and other meeting materials to participants in advance to allow for review time; and
- Posting WWT meeting materials on MSD's website (MSD is in the process of doing this).

At the meeting, a WWT stakeholder requested hearing more "real time" information on wet weather events, including the challenges MSD faces and its responses. MSD participants responded by saying that MSD generates a regular email that updates elected officials and other interested parties on MSD's activities, and would also work to bring a summary of that information into the "Wet Weather Project Updates" portion of WWT meetings. MSD described a recent rainy period that resulted in very few overflows, because of MSD's response to the potential for sanitary sewer overflows (SSOs) at known trouble spots. In addition, MSD reported that the U.S. Environmental Protection Agency (EPA) had recently conducted an inspection of MSD and would be approving two documents MSD submitted in 2006 for the Consent Decree.

Values-Based Decision Making Presentation

Gary Swanson of CH2M HILL gave a presentation outlining an example of how the value-based decision-making process will be used to evaluate the trade-offs between project alternatives. In the example, the problem was defined to be a discharge into the Ohio River, and the example assumed that treatment had been selected as an overall response strategy, after maximizing in-line storage in the sewer systems. Accordingly, the three project alternatives in the example focused on different potential levels of treatment of overflows. Mr. Swanson described how the hypothetical alternatives could be evaluated using performance evaluation scales for two non-financial values—environmental enhancement and regulatory compliance—as compared to the total present worth cost of the alternatives. The draft evaluation framework for each value included a 1-to-5 scale measuring the probability or frequency of an overflow occurring and a 1-to-5 scale measuring the severity of a potential impact on a value. The severity scales in the example illustrated one aspect of each value (e.g., amount of untreated overflow volume for the regulatory compliance value), not the full range of potential impacts.

After illustrating the scoring process in the simplified example, Mr. Swanson summarized the steps in the value-based decision-making process:

- WWT stakeholders define values and relative weights for the values;
- The technical team develops draft performance measures and scales based on the "focus areas" or objectives WWT stakeholders have identified for the values;
- Stakeholders review and help refine the performance scales;
- The technical team uses the performance scales to evaluate alternatives; and
- Stakeholders review the results and can review and refine scoring considerations.

WWT participants had a variety of questions and comments about both the proposed methodology for evaluating project alternatives, as outlined in the example, and the draft performance measurement scales presented for the regulatory compliance and environmental enhancement values. Highlights of this discussion are as follows.

- Process for Developing Alternatives: In response to a question, Mr. Swanson explained that the technical team would be developing lists of project alternatives based on specific problems (e.g., SSO and CSO locations) and a range of high-level response strategies that WWT stakeholders will discuss. WWT stakeholders will be able to review and provide feedback on the problems, strategies, and alternatives identified by the technical team.
- Weighting and Sensitivity Analyses: A few WWT members commented on how important the performance scales and the comparative weighting of values will be in the cost-benefit analysis of alternatives. The technical team indicated it can do sensitivity analyses to show WWT members how different comparative weights for values affect the results of the cost-benefit analysis.
- Requests for Documentation: Mr. Swanson said that although the technical team will be conducting the analysis of alternatives "thousands of times," the goal is for the WWT to make decisions in a systematic, transparent way. Participants may request to see the data behind any summary cost-benefit analysis presented by the technical team.
- Language Describing Compliance: Several WWT members commented on the use of language such as "probably acceptable" to describe different levels of severity for the regulatory compliance value. Participants suggested that it could be helpful to clarify the meaning of "acceptable" in a note along with the table (e.g., that the likely acceptability of an alternative is based on EPA's CSO policy, or other information). Participants also discussed the challenges of working towards compliance when there aren't always clear "bright lines."

- Mold as an Indirect Effect of Wet Weather Events: A WWT member asked how issues such as mold and people's allergic reactions to it might be considered in the decision making process. A participant suggested that perhaps the "Asset Protection" value would address that, since reducing basement backups and property flooding could reduce the occurrence of mold in people's homes.
- Unquantifiable Items: A few participants expressed concern that things that are not quantifiable in the decision-making model may, in fact, be the most important items to consider. Suggestions to address this concern included: keeping a list of the non-measurable aspects of values that do not get reflected in the performance scales and developing different performance scales for different types of problems (e.g., using different performance scales for the Ohio River and tributary streams when looking at biochemical oxygen demand and dissolved oxygen).

Financial Values Baseline Conditions Presentation and Discussion

As an introduction, Rob Greenwood of Ross & Associates explained that while some WWT values will be considered at the level of individual projects (i.e., through the cost-benefit analysis of alternatives), other values (such as Economic Vitality and Financial Equity) relate to the full set of activities included in MSD's future Wet Weather Program (including watershed and community-wide efforts). The three financial values identified by the Wet Weather Team consist of Financial Stewardship (focusing on how to decide between alternatives), Economic Vitality (focusing on how much can the community afford to pay), and Financial Equity (focusing on who pays and how to recover the community's costs).

Gary Swanson of CH2M HILL and Marion Gee of MSD gave presentations on baseline conditions for the financial values. Each presentation was followed by a short, facilitated discussion to solicit WWT ideas about what aspects of the community value to focus on when evaluating potential components of MSD's Wet Weather Program. Highlights of these presentation/discussion sessions are summarized below.

1. Financial Stewardship

- Summary of Baseline Conditions: The WWT process is designed to be a systematic way to evaluate the costs and benefits of alternatives. Benefits are defined based on the WWT's community values, while costs incorporate life-cycle considerations (construction, operation, and maintenance costs). The WWT will discuss the appropriate total level of investment for the community based on a "knee of the curve" analysis of the point of diminishing returns, when additional spending provides little additional benefit.

- Preliminary Focus Areas: WWT members were comfortable with the proposal that this value would be addressed through the values-based analysis of benefits and costs of project alternatives.

2. Economic Vitality

- Summary of Baseline Conditions: Current residential wastewater rates in Jefferson County are lower than the national average, and industrial wastewater rates are also less than those in other communities. Some of the communities with higher rates are also under consent decrees. EPA has guidelines for what rates are considered "affordable" for a community; however, those guidelines are not likely to constrain rate increases due to Consent Decree compliance. MSD has several ways that it recovers costs for new development.

- Requests for Additional Data: Participants requested information on how MSD's development fees compare to development fees in other places, and asked what Cincinnati's rates were before the community started respond to its consent decree. Marion Gee said that MSD would try to find out that information for the Wet Weather Team.

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

- Other Comments: Several people commented on the graph showing what the peak average residential wastewater rates could be at different levels of bonding capacity. It was noted that any increases in rates due to Consent Decree activities would be phased in, potentially over a 20-year period. Participants noted that it will likely be a challenge to communicate to people that their wastewater rates could double over the next 20 years, and that people probably won't pay attention to educational materials about the Consent Decree until it's translated into dollar impacts. WWT stakeholders said that it would be helpful for MSD to have an ongoing public relations and education program.

3. Financial Equity

- Summary of Baseline Conditions: MSD has an established methodology for setting rates based on service costs. All residential customers currently pay for wastewater service based on the same rates. Residential service accounts for about 51 percent of MSD's wastewater revenues. There are a variety of potential ways to change MSD's rate structure and/or to provide assistance or subsidies to certain ratepayers. WWT stakeholders will provide input to MSD on rate structure and assistance options for the Wet Weather Program.

- 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).

- Other Comments: WWT members commented on some of the challenges with setting rates and recovering costs, including the fact that the combined sewer area is also where lower income people live, that a certain portion of the community is "off the grid" and not paying for wastewater and stormwater services, and that MSD cannot measure people's water use in relation to wet weather events. Some suggestions for recovering costs included: charging residences differently depending on the area of impervious surfaces on properties (and therefore the amount of stormwater runoff that would be generated), and whether there could be lower development fees for areas that already have sewer capacity (e.g., urban areas in need of re-investment).

Rob Greenwood encouraged WWT members to e-mail the facilitation team if they had additional thoughts about potential focus areas for the values, or other comments about the WWT's value-based decision-making process.

Public Participation During the Wet Weather Team Process

Jennifer Tice of Ross & Associates gave a short presentation on MSD's plans for public participation during the Wet Weather Team stakeholder process. These plans include four public informational meetings designed to accomplish two objectives: (1) provide information to the community on MSD's Consent Decree activities and the Wet Weather Team process and (2) listen to comments and feedback from the public. Other public outreach and education efforts include: establishing the Project WIN website (www.msdlouky.org/projectwin), developing and distributing written materials (e.g., billing inserts), posting CSO warning signs, media communications about wet-weather events, and continuing MSD's Speaker's Bureau and volunteer events such as annual "River Sweeps."

MSD is interested in receiving feedback from the WWT stakeholders about these public participation plans, and will be working with the facilitation team on a "homework assignment" for WWT stakeholders to solicit specific suggestions. Comments discussed at the meeting included the following:

- Participants noted that there are significant challenges in educating the public about wet-weather wastewater and stormwater management issues, as well as what MSD is doing in response to the wet weather Consent Decree.
- A WWT member noted that the CSO warning signs, the river sweeps, and other elements of MSD's public outreach activities send a negative message about the community's water resources. He suggested the need for development of positive educational messages to supplement those already developed.
- WWT stakeholders had different opinions as to the extent to which MSD and Wet Weather Team members should be engaging in major public outreach activities, such as hosting media "groundbreaking" events and making radio announcements, at this early stage in the development of the Wet Weather Program. There was some concern about starting major outreach efforts before MSD had a clear message and strategy for public relations efforts.
- Several participants suggested that MSD hire a public relations/media coordinator and develop a pro-active strategy for public outreach and education activities related to MSD's wet-weather wastewater and stormwater management efforts.

Observer Comments

An observer noted in response to the public participation discussion that sometimes people complain about educational materials they receive in the mail, saying that those mailings are not a good use of the agency's funds. MSD received a number of customer complaint calls after distributing the recent direct mail piece about MSD's Project WIN (Waterway Improvements Now) initiative.

Wrap Up and Next Steps

- The facilitation team will work with MSD to prepare an e-mail "homework assignment" asking WWT stakeholders for specific suggestions on two topics: (1) the format, content, and timing of public informational meetings about MSD's Consent Decree and the Wet Weather Team stakeholder process; and (2) other public outreach and education activities to occur during the WWT process.
- The technical team will continue developing draft performance evaluation scales for evaluating the benefits of potential project alternatives. These draft performance scales will be based on the "focus areas" identified for the non-financial values at the December 5, 2006 WWT meeting, as well as additional feedback provided by WWT stakeholders since that meeting.
- The next WWT meeting will be on Tuesday, February 13, 2007, and will likely be held at MSD's main office in downtown Louisville. The facilitation team will distribute the agenda and presentation materials for the meeting approximately one week in advance. Potential meeting topics include:
    - Update on MSD's public participation plans and feedback provided by WWT stakeholders since the January WWT meeting;
    - Discussion of current conditions and high-level strategies to respond to wet-weather wastewater and stormwater management challenges in a particular locality or segment of a watershed;
    - Review of draft performance evaluation scales for 2-3 of the non-financial values; and
    - Initial discussion about potential comparative weights for the community values.

Meeting Participants

Wet Weather Team Stakeholders

Michael Ballard (alternate for Judy Nielsen), Louisville Metro Health Department
Susan Barto, Mayor of Lyndon
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
Arnita Gadson, West Jefferson County Community Task Force
Mike Heitz, City of Louisville, Metro Parks
Tom Herman, Zeon Chemicals
Bob Marrett, CMB Development Company
Kurt Mason, Jefferson County Soil and Water Conservation District
Suzy Post, Metropolitan Housing Coalition
Lisa Santos, Irish Hill Neighborhood Association
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
Derek Guthrie, MSD Director of Engineering/Operations & Chief Engineer

Facilitation and Technical Support

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

Meeting Observers

Henry Cubero, The Cubero Group
David Hackworth, CH2M HILL
Tim Kraus, O'Brien & Gere
Marion Gee, MSD

Meeting Materials

- 1/18/07 Meeting Agenda
- Wet Weather Team Meeting Schedule for 2006–07
- Wet Weather Team Membership and Contact Information (January 2007 version)
- Summary of the 12/5/06 Wet Weather Team Meeting
- Charts and Graphs from the 12/5/06 Non-Financial Values Baseline Conditions Presentation
- Water Quality Use Support Map for the Salt River Basin (supplement to the 12/5/06 Non-Financial Values Baseline Conditions Presentation)
- Value-Based Decision Making Presentation
- Financial Values Baseline Conditions Presentation
- Public Participation During the Wet Weather Team Process Presentation

Handouts

Charts and Graphs
Extracted from the Non-Financial Values Baseline Conditions Presentation
Wet Weather Team Meeting, 12/5/06

1. Water Quality Data

A) Total Suspended Solids

Figure A-11a. Summary of In-Stream Water Quality Data for TSS (Cedar Creek, Floyds Fork, Goose Creek and Harrods Creek)

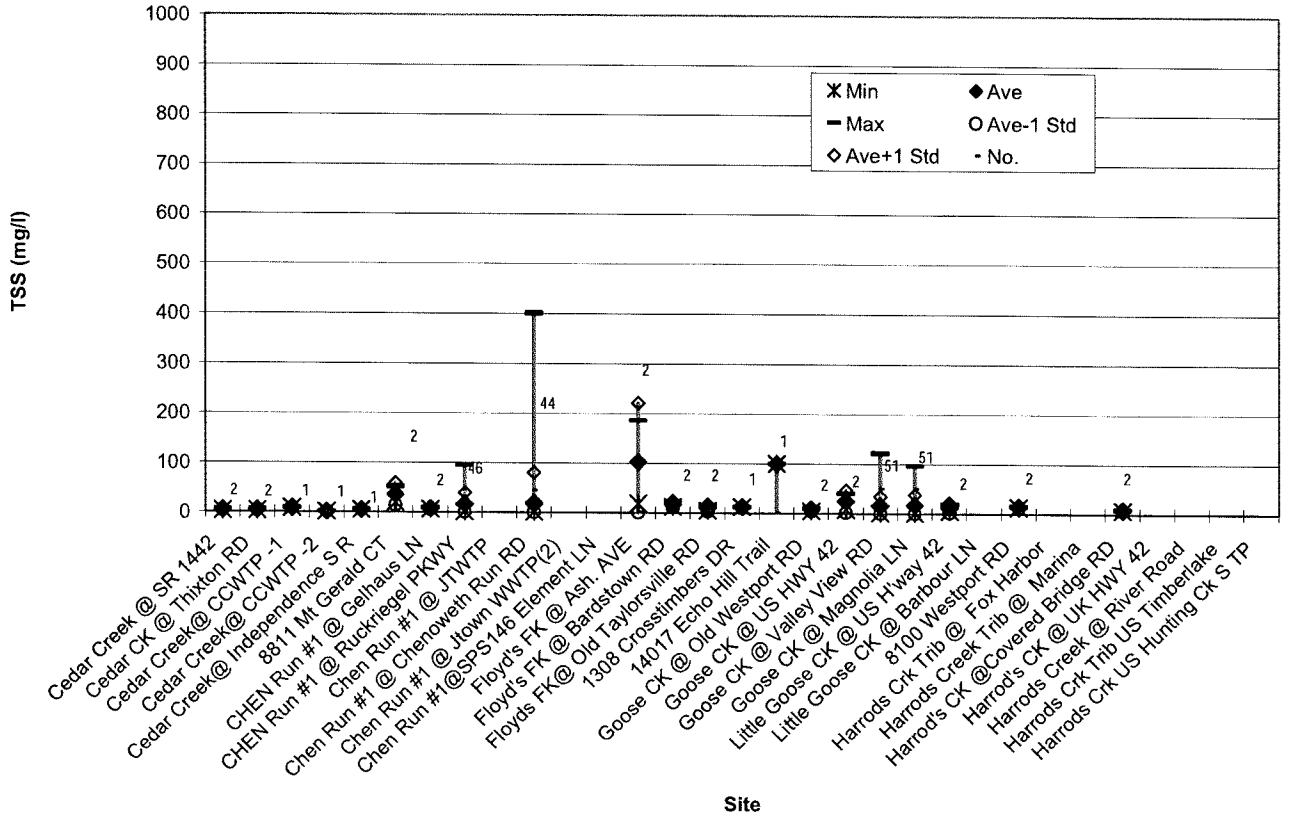
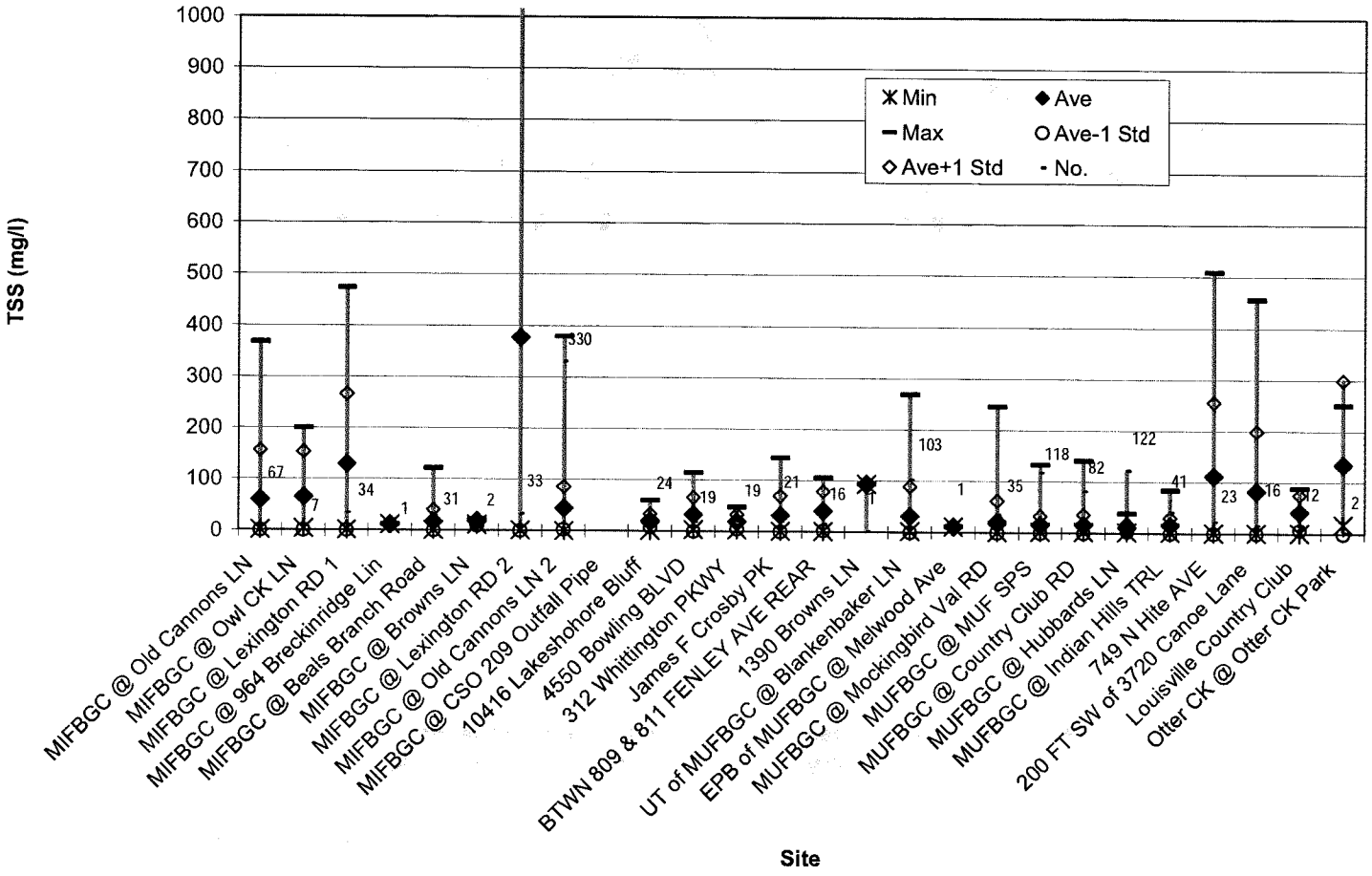


Figure A-11c. Summary of In-Stream Water Quality Data for TSS (Middle Fork, Muddy Creek, and Otter Creek)



B) Biochemical Oxygen Demand

Figure A-12a. Summary of In-Stream Water Quality Data for BOD (Cedar Creek, Floyds Fork, Goose Creek and Harrods Creek)

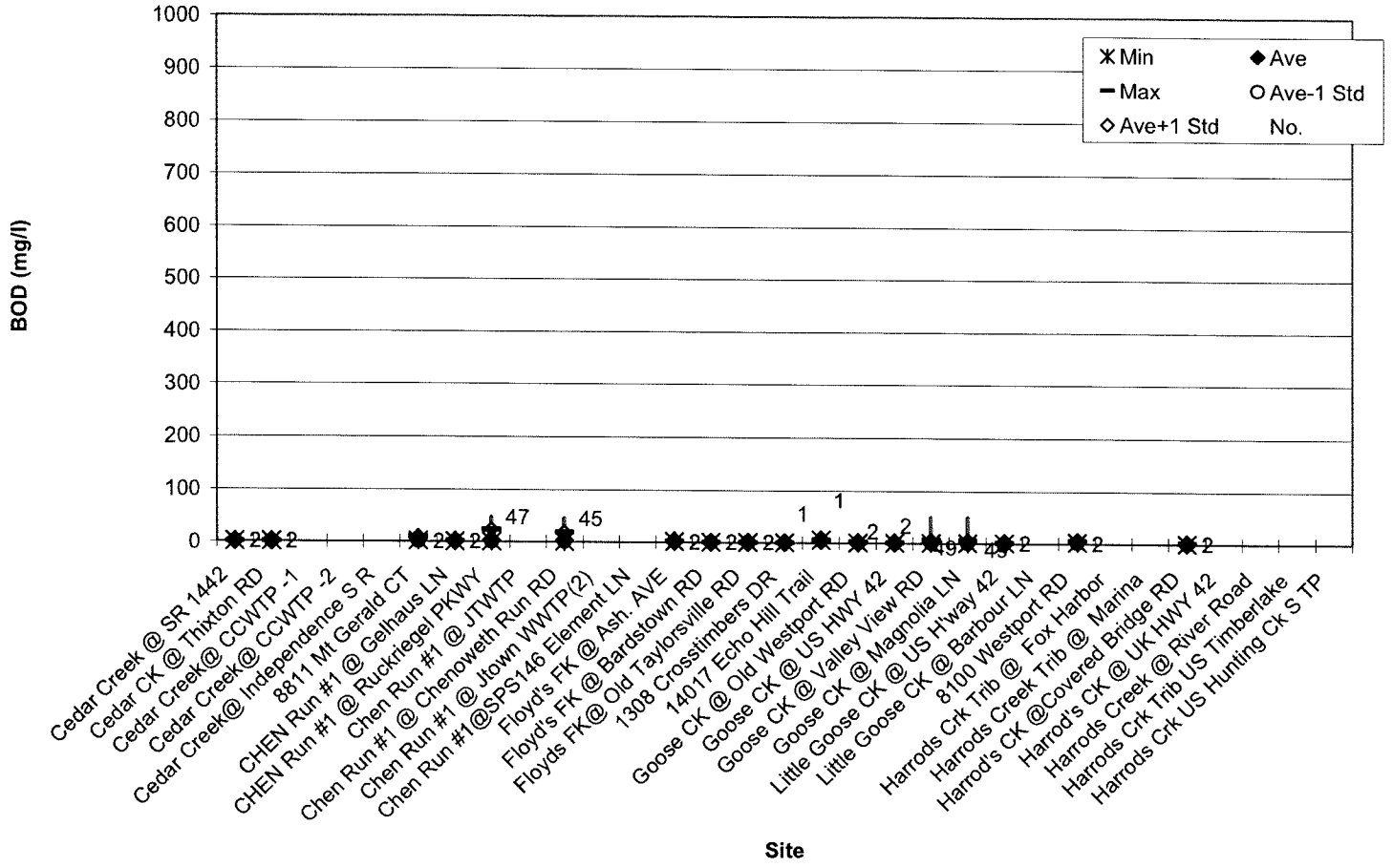
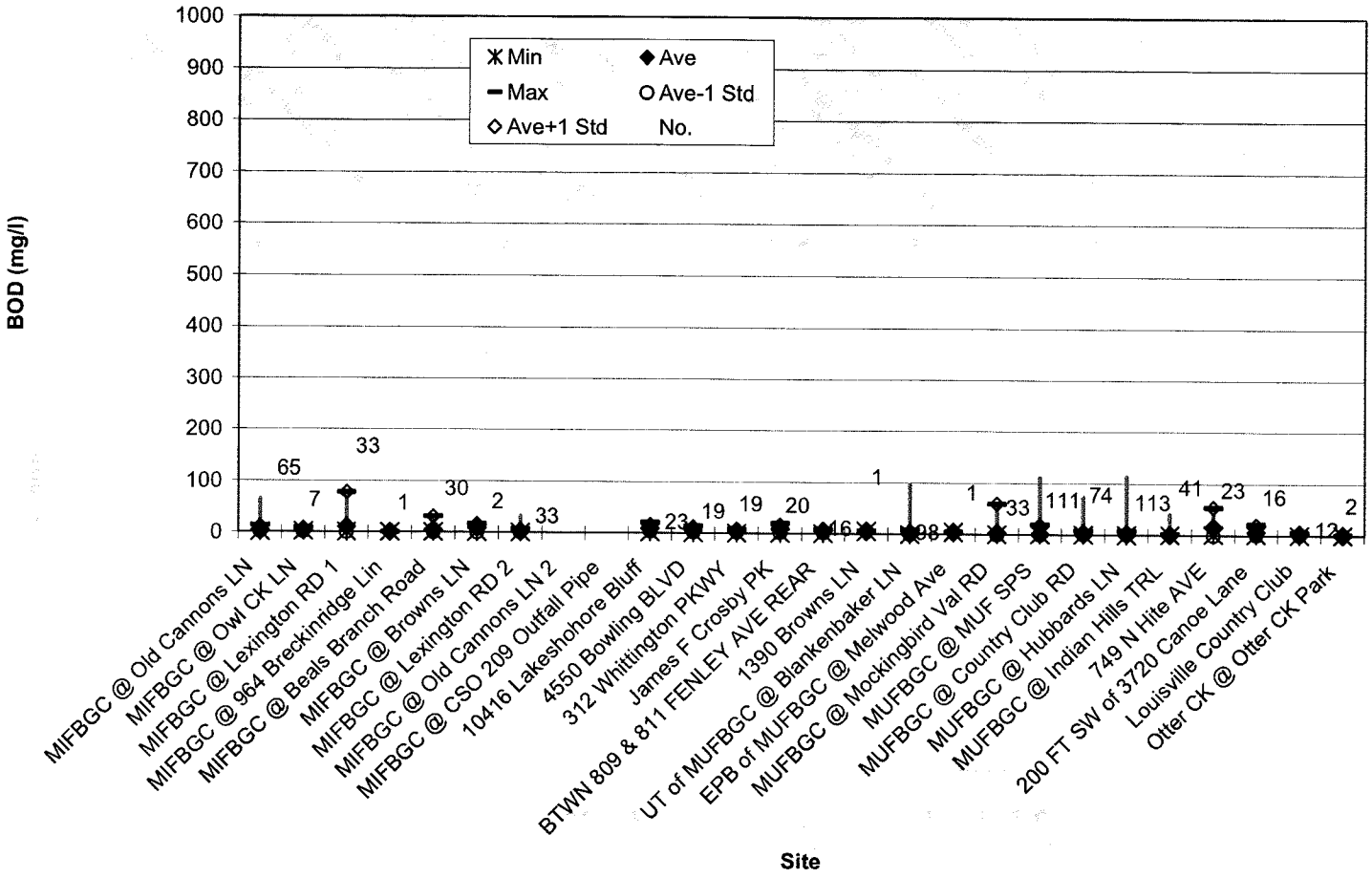


Figure A-12c. Summary of In-Stream Water Quality Data for BOD (Middle Fork, Muddy Creek, and Otter Creek)



C) Fecal Coliform

Figure A-13a. Summary of In-Stream Water Quality Data for Fecal Coliform (Cedar Creek, Floyds Fork, Goose Creek and Harrods Creek)

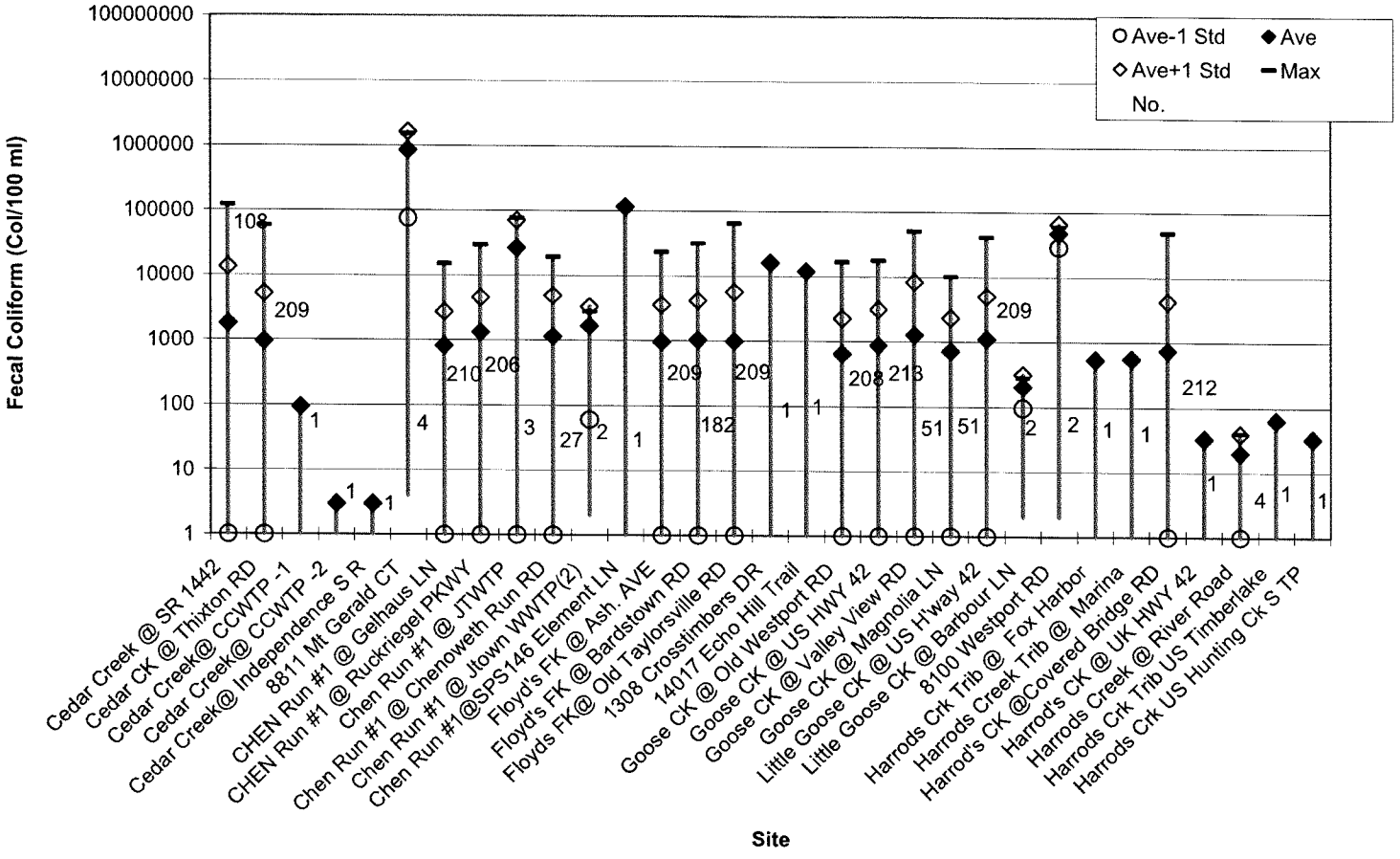


Figure A-13c. Summary of In-Stream Water Quality Data for Fecal Coliform (Middle Fork, Muddy Creek, and Otter Creek)

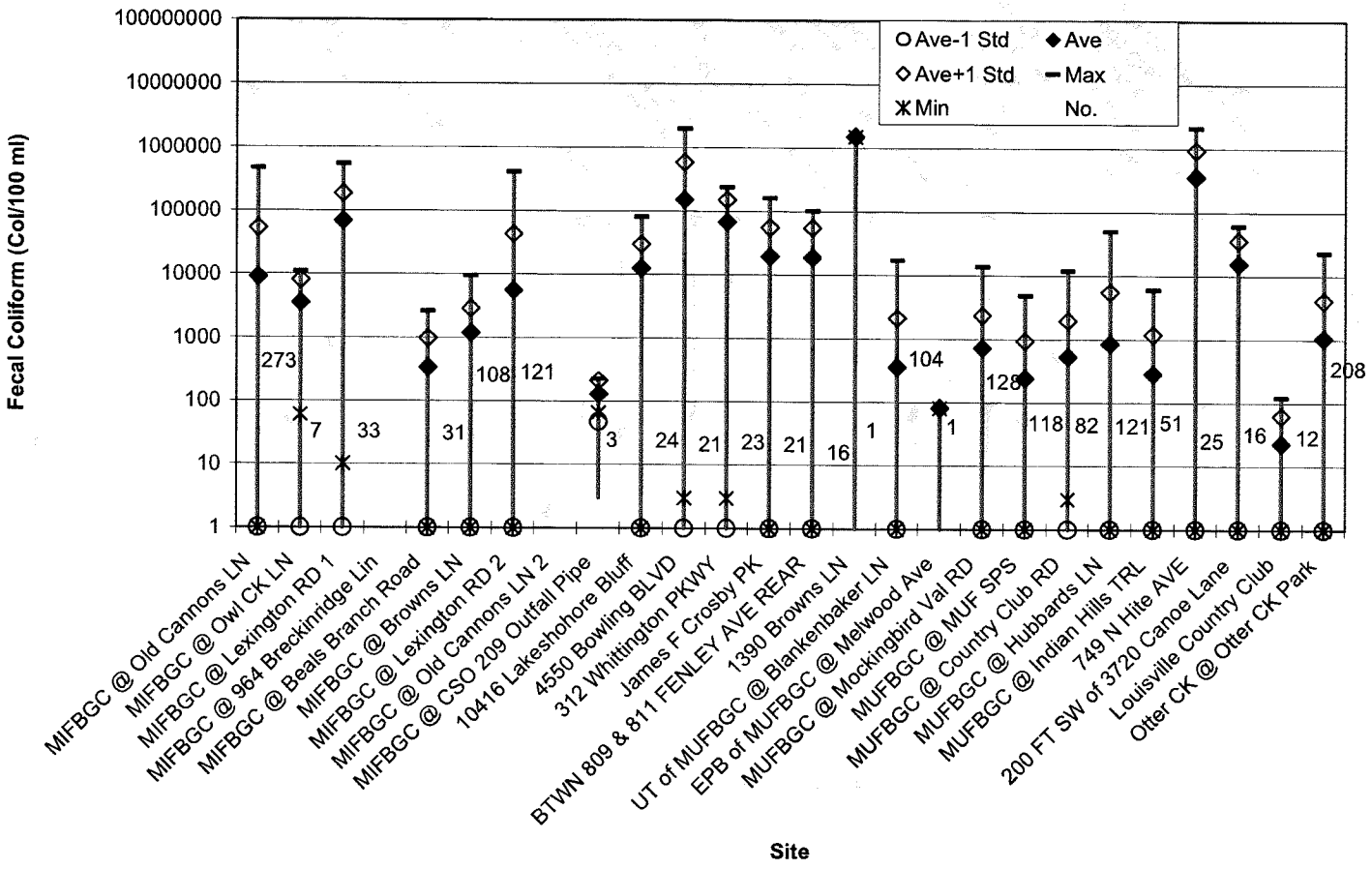
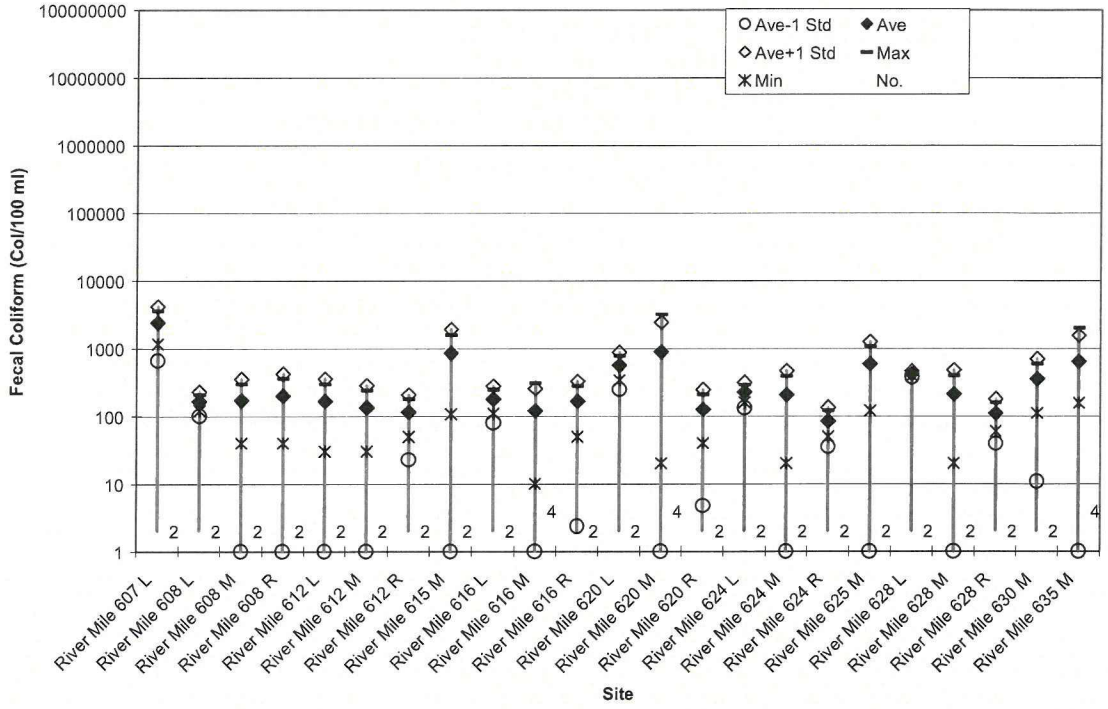
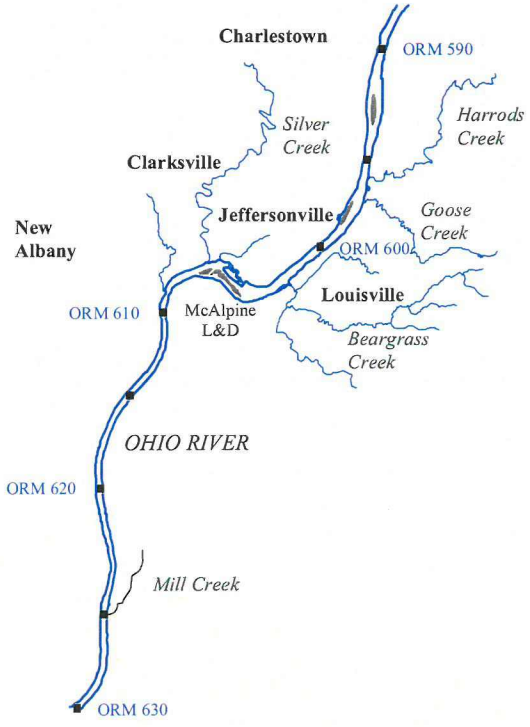


Figure A-13d. Summary of In-Stream Water Quality Data for Fecal Coliform (Ohio River 1 of 2)



Map of the Ohio River (Ohio River 2 of 2)



ORM = Ohio River Mile

2. KPDES Compliance Record by Plant

	Months with Effluent Violations				
	2001	2002	2003	2004	2005
Regional Plants					
Cedar Creek	1	1	1	0	1
Floyds Fork	3	0	0	2	0
Hite Creek	2	1	3	3	2
Jeffersontown	5	2	2	2	2
Morris Forman	12	11	5	3	0
West County	0	0	0	4	4
Package Plants					
Bancroft	0	0	0	0	0
Lake Forest	5	2	2	0	12
Berrytown	2	0	1	0	0
Chenoweth Hills	1	2	0	1	2
Glenview Acres	1	1	0	3	0
Glenview Bluff	0	0	0	0	0
Hunting Creek South	0	0	0	2	3
Ken Carla	0	1	1	0	0
KY Corr Inst for Women	5	1	2	3	5
Lake of the Woods	1	1	1	0	0
McNeeley Lake	0	1	0	0	0
North Hunting Creek	1	0	3	2	0
Polo Fields	2	1	0	1	8
Shadow Woods	4	5	5	5	1
Silver Heights	0	1	0	0	1
Starview Estates	0	0	0	0	1
Timberlake	4	2	0	2	1
Watterson Woods	2	2	1	1	2
Yorktown	2	3	1	3	2
Total	**53**	**38**	**28**	**37**	**47**

Construction Activity

3. Peak Daily Flow by Plant

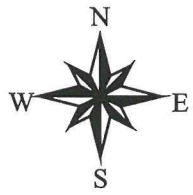
WWTP	ADF Permit (mgd)	Peak Design (mgd)	Peak Daily Flow (mgd) 2001	2002	2003	2004	2005
Cedar Creek	7.5	26.0	13.8	13.2	12.4	12.6	13.8
Floyds Fork	3.25	10.4	2.0	2.5	2.5	5.3	2.0
Hite Creek	4.4	16.0	9.2	9.1	9.4	9.0	9.2
Jeffersontown	4	7.5	12.2	15.3	13.8	12.8	12.2
Morris Forman	120	350.0			228.1	233.6	227.4
West County	30	96.0	52.1	70.5	60.9	131.3	52.1
Bancroft	0.08	0.18	0.08	0.26	0.09	0.08	0.06
Beckley Station	0.47	1.03	NA	NA	NA	NA	1.08
Berrytown	0.075	0.28	0.38	0.36	0.41	0.41	0.41
Chenoweth Hills	0.2	0.58	0.82	0.67	0.80	0.75	0.84
Glenview Acres	0.012	0.03	0.02	0.03	0.06	0.03	0.03
Glenview Bluff	0.01	0.03	0.01	0.03	0.01	0.02	0.02
Hunting Creek South	0.251	0.63	0.56	0.54	0.55	0.54	0.85
Ken Carla	0.01	0.05	0.01	0.05	0.01	0.02	0.01
KY Corr for Women	0.125	0.42	0.50	0.23	0.24	0.19	0.40
Lake of the Woods	0.044	0.16	0.13	0.17	0.10	0.17	0.23
McNeely Lake	0.205	0.28	0.56	0.55	0.55	0.45	0.36
North Hunting Creek	0.353	0.79	0.65	1.00	0.90	0.80	0.86
Polo Fields	0.125	0.45	0.27	0.54	0.36	0.23	0.31
Shadow Wood	0.085	0.16	NA	NA	NA	NA	0.14
Silver Heights	0.5	0.89	1.69	1.57	1.61	1.36	1.36
Starview	0.1	0.29	0.37	0.33	0.41	0.45	0.63
Timberlake	0.15	0.65	0.21	0.24	0.23	0.60	0.72
Watterson Woods	0.343	0.66	2.11	2.80	1.93	3.49	3.74
Yorktown	0.15	0.43	0.65	0.56	0.49	0.54	0.51

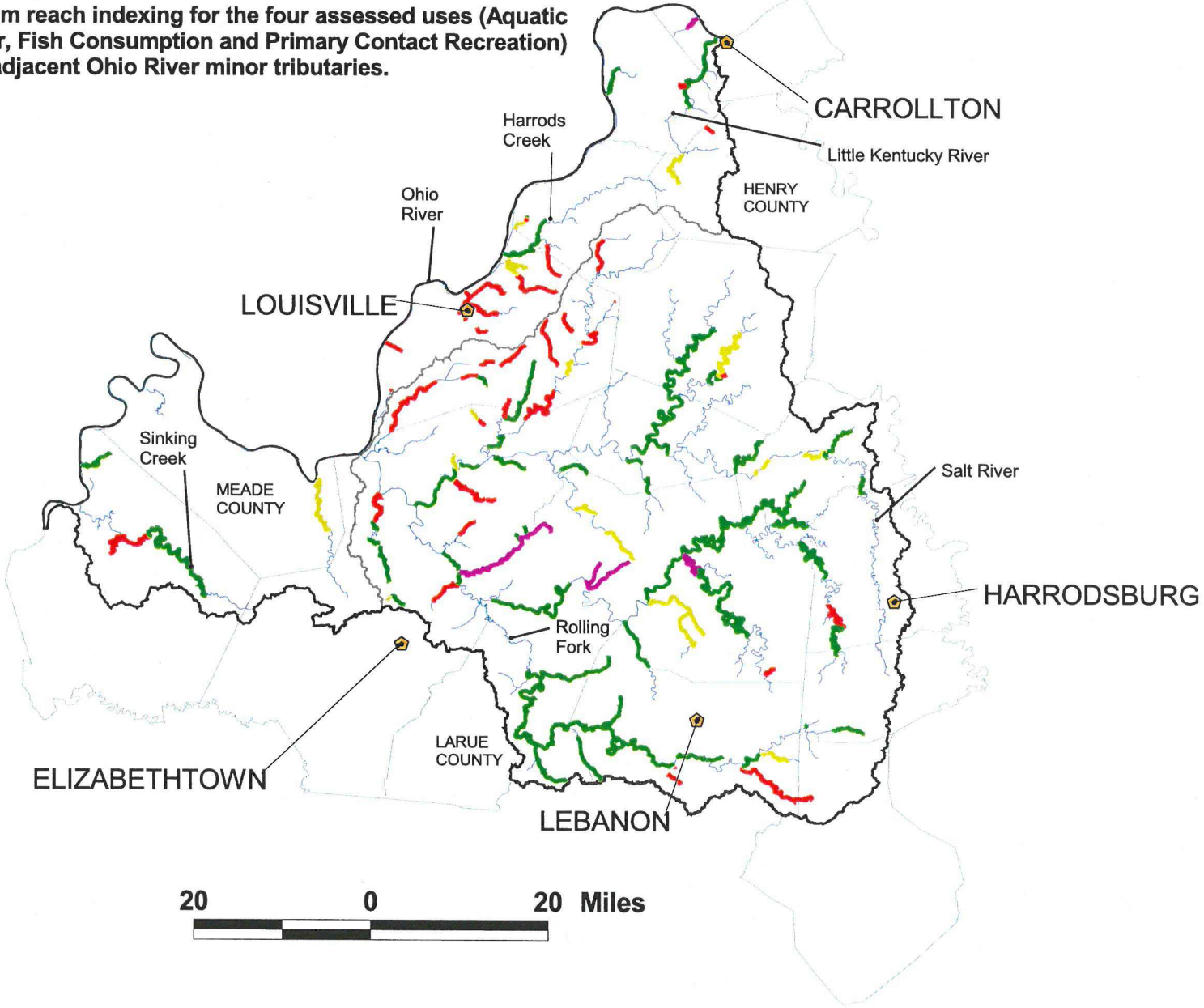
Actual Peak Flow Exceeds Design Peak Capacity

Water Quality Use Support Map for the Salt River Basin, Including Jefferson County

Available at: http://www.water.ky.gov/sw/swmonitor/305b/Use+Support+Maps.htm

Combined overview of stream reach indexing for the four assessed uses (Aquatic Life Support, Drinking Water, Fish Consumption and Primary Contact Recreation) in the Salt River Basin and adjacent Ohio River minor tributaries.





City
Overall
Fully
Not supporting
Partial
Threatened
>/= 4th Order Streams
County Boundaries
Salt River Watershed
Ohio River Tributaries

Source 2002 305(b) Report

Value-Based Decision Making

How will this really work?

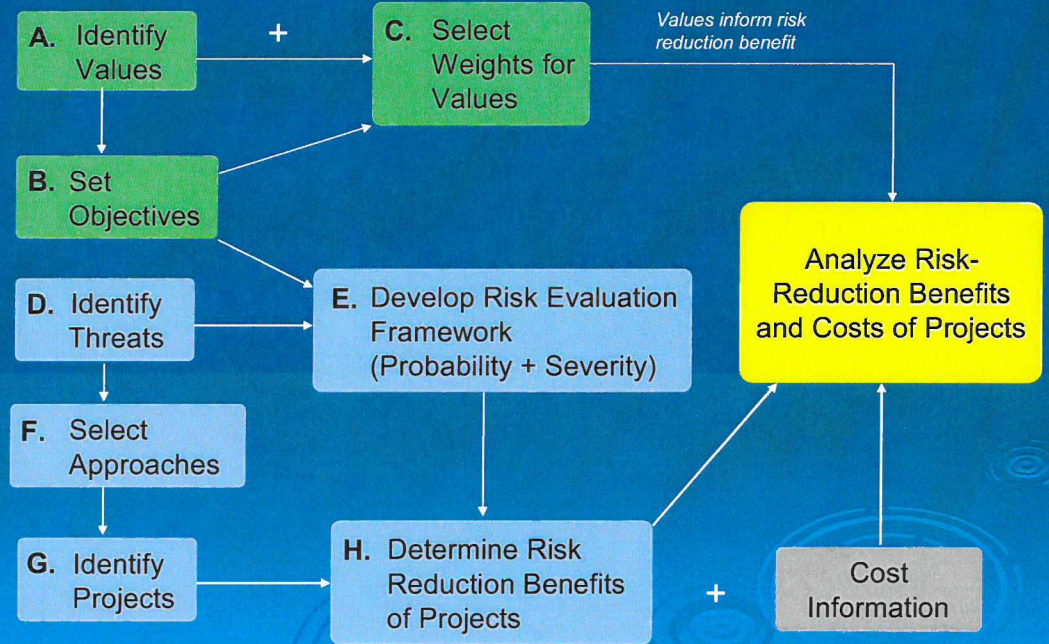
Wet Weather Team
Stakeholder Group Meeting #5
January 18, 2007

MSD

Objectives

- Review decision process and stakeholder input points
- Present examples of performance measure evaluation scales
- Illustrate process with example project alternative evaluation

Values-Based Risk Management Planning Process



Why Are We Here?

Wet Weather Team Inputs to Decision Process

- Community Values – drafted and refined by WWT
- Performance Objectives – developed based on baseline discussions with WWT (underway now)
- Performance Measures – to be drafted by Technical Team, reviewed and modified by WWT (by May 2007)
- Value Prioritization – to be developed by WWT (by May)

Why Are We Here?

Wet Weather Team Inputs to Decision Process (cont.)

- Review control strategies and approaches (by May)
- Alternative Evaluations – cost/benefit analysis developed by Technical Team, reviewed with WWT (May – December 2007)
- Project Ranking – additional considerations by Technical Team and WWT, value-based ranking developed by Technical Team, reviewed with WWT (January – June 2008)

Value-Based Decision Example

- Problem Statement – Explore and Articulate Trade-Offs of Treatment Levels for Ohio River Discharge. Assumptions are:
  - In-line storage maximized
  - After in-line storage implemented, overflow predicted to be:
    - 25 events per year
    - Average Annual Overflow Volume (AAOV) = 150 MG
    - Annual Average Overflow Peak Flow = 30 MGD
  - Satellite treatment facility required

Example Considers 3 Possible Alternative Approaches

- Alternative 1 – Treat flow only for aesthetics and pathogens
- Alternative 2 – Provide primary treatment and disinfection per CSO Policy
- Alternative 3 – Provide secondary treatment

Alternative 1 – Treatment Only for Aesthetics and Pathogens (Cincinnati example)

- Treat 85% of AAOV, 4 events per year have peaks that exceed treatment capacity
- Screening and grit removal for solids and floatable control
- No significant BOD or TSS removal
- Disinfection to 200 Fecal Coliforms/100 ml
- Example present worth cost $13 million

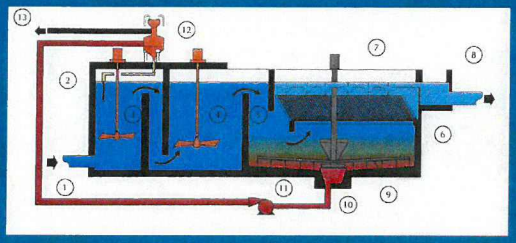
BOD = Biochemical Oxygen Demand
TSS = Total Suspended Solids

Alternative 2 – Primary Treatment plus Disinfection (per CSO Policy)

- Treat 85% of AAOV, 4 events per year have peaks that exceed treatment capacity
- Screening and grit removal for solids and floatable control
- Primary treatment removes 60% TSS and 25% BOD
- Disinfection to 200 FC/100 ml
- Example present worth cost $ 19 million

Alternative 3 – Secondary Treatment ("overflow" elimination)

- Treat 85% of AAOV, 4 events per year have peaks that exceed treatment capacity
- Screening and grit removal for solids and floatable control
- Secondary Treatment reduces TSS and BOD 85%
- Disinfection to 200 FC/100ml
- Example present worth cost $ 27 million



Example Performance Measures Regulatory Compliance

Probability			Untreated overflow volume greater than 100 MG AAOV	Untreated overflow volume 50 – 100 MG AAOV	Untreated overflow volume 5 – 50 MG AAOV	Untreated overflow volume 1 – 5 MG AAOV	Untreated overflow volume less than 1 MG AAOV
			Probably Unacceptable	Questionable Acceptability	Probably Acceptable	Clearly Acceptable	Exceeds Expectations
			5	4	3	2	1
Overflow Frequency greater than 10 times per year	Probably Unacceptable	5	25	20	15	10	5
Overflow frequency between 4 and 10 times per year	Questionable Acceptability	4	20	16	12	8	4
Overflow frequency between 1 and 4 times per year	Probably Acceptable	3	15	12	9	6	3
Overflow frequency between 1 and 2 year recurrence	Clearly Acceptable	2	10	8	6	4	2
Overflow frequency less than 2 year recurrence	Exceeds Expectations	1	5	4	3	2	1

Note: for the purpose of this example, only one possible aspect of regulatory compliance is shown. Actual performance measure scales will consider several aspects of regulatory compliance (solids and floatables, TMDL loads, etc.)

Scoring Example Regulatory Compliance

Probability			Untreated overflow volume greater than 100 MG AAOV	Untreated overflow volume 50 – 100 MG AAOV	Untreated overflow volume 5 – 50 MG AAOV	Untreated overflow volume 1 – 5 MG AAOV	Untreated overflow volume less than 1 MG AAOV
			Probably Unacceptable	Questionable Acceptability	Probably Acceptable	Clearly Acceptable	Exceeds Expectations
			5	4	3	2	1
Overflow Frequency greater than 10 times per year	Probably Unacceptable	5	B 25 1	20	15	10	5
Overflow frequency between 4 and 10 times per year	Questionable Acceptability	4	20	16	12	8	4
Overflow frequency between 1 and 4 times per year	Probably Acceptable	3	15	12	9	2 6 3	3
Overflow frequency between 1 and 2 year recurrence	Clearly Acceptable	2	10	8	6	4	2
Overflow frequency less than 2 year recurrence	Exceeds Expectations	1	5	4	3	2	1

B = Base Condition

2 = Alternative Number

Alt 1 0 points
Alt 2 25 – 6 = 19 points
Alt 3 25 – 6 = 19 points

Example Performance Measures Environmental Enhancement

		Greater than 50 tons per year BOD in overflow	Between 25 and 50 tons per year BOD in overflow	Between 12.5 and 25 tons per year BOD in overflow	Between 5 and 12.5 tons per year BOD in overflow	Less than 5 tons per year BOD in overflow
		5	4	3	2	1
Overflow Frequency greater than 10 times per year	5	25	20	15	10	5
Overflow frequency between 4 and 10 times per year	4	20	16	12	8	4
Overflow frequency between 1 and 4 times per year	3	15	12	9	6	3
Overflow frequency between 1 and 2 year recurrence	2	10	8	6	4	2
Overflow frequency less than 2 year recurrence	1	5	4	3	2	1

Note: for the purpose of this example, only one possible aspect of environmental enhancement is shown. Actual performance measure scales will consider several aspects of environmental enhancement (aesthetics, dissolved oxygen, habitat enhancement, odor, etc.)

Scoring Example Environmental Enhancement

		Greater than 50 tons per year BOD in overflow	Between 25 and 50 tons per year BOD in overflow	Between 12.5 and 25 tons per year BOD in overflow	Between 5 and 12.5 tons per year BOD in overflow	Less than 5 tons per year BOD in overflow
		5	4	3	2	1
Overflow Frequency greater than 10 times per year	5	B 25 → 1	20	15	10	5
Overflow frequency between 4 and 10 times per year	4	20	16	12	8	4
Overflow frequency between 1 and 4 times per year	3	15	2 12	9	3 6	3
Overflow frequency between 1 and 2 year recurrence	2	10	8	6	4	2
Overflow frequency less than 2 year recurrence	1	5	4	3	2	1

B = Base Condition

2 = Alternative Number

Alt 1 0 points
Alt 2 25 – 12 = 13 points
Alt 3 25 – 6 = 19 points

Example Scoring Summary

Alternative	Regulatory Compliance	Environmental Enhancement	Total Benefit Score (unweighted)	Total Present Worth (millions)	Example Benefit/Cost Ratio (unweighted)
1	0	0	0	$13	0.00
2	19	13	32	$19	1.68
3	19	19	38	$27	1.41

Alt 1 – lowest cost
Alt 3 – highest benefits
Alt 2 – best benefit/cost ratio

Summary

- Stakeholders define values, objectives, & relative weights
- Technical team develops draft performance measures
- Stakeholders review and help refine performance measures
- Technical team uses performance measures to evaluate alternatives
- Stakeholders review results, and can review & refine scoring considerations

MSD Financial Values
Baseline Conditions

Wet Weather Team
Stakeholder Group Meeting #5
January 18, 2007

MSD

Presentation Outline

- Review the list of financial values and related stakeholder comments
- Describe how financial values impact decisions required in Wet Weather Plan development
- For each financial value:
  - Provide information about current baseline conditions and describe data gaps
  - Identify potential impacts related to MSD's Consent Decree and overall responsibilities
  - Provide guidance on the aspects of the financial values that we should focus on

Financial Values Identified by Stakeholder Group

- Financial Stewardship – Cost-effective, Real Benefits
- Economic Vitality – Affordable Rates
- Financial Equity – Who Pays

Financial Values Drive Diverse Decisions

- Financial Stewardship – How will we decide between alternatives?
  - Value-based benefit definition
  - Risk management cost/benefit analysis
- Economic Vitality – How much can we afford to pay?
  - Design events
  - Compliance strategy
- Financial Equity – How will we recover our costs?
  - Rate structure
  - Subsidies

Financial Stewardship

Your Definition – What Does Financial Stewardship Mean to the Stakeholder Group?

Cost/Benefit Considerations	Other Considerations
Financial common sense	Consider cost – achieve through volunteers
Maximize use of rate dollars	Incentives for preferred behaviors
Cost-effective in-stream results	Take advantage of corporate sponsorships
Reasonable and cost conscious	
Consider cost/benefit ratio	

Financial Stewardship

- Engineering evaluation considers life-cycle costs of projects
  - Construction cost
  - Non-construction costs
    - engineering and administration
    - land and easements
    - finance charges
  - Operations & maintenance costs
  - Salvage value and reuse of facilities

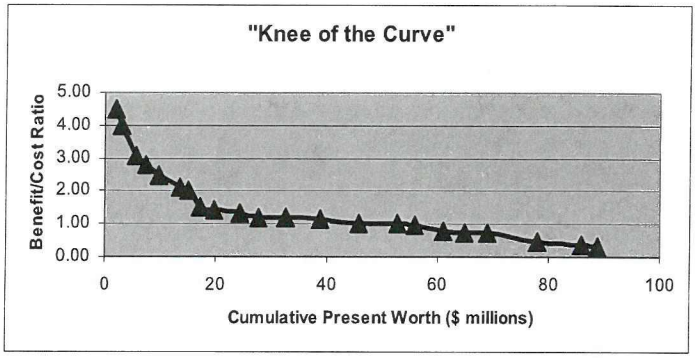
Financial Stewardship
Benefit/Cost Analysis is Basis for Alternative Evaluations

- Benefits based on protection of community values – risk management approach
- Approach with highest benefit/cost ratio will be preferred alternative
- Example previously presented illustrates concept

Alternative	Regulatory Compliance	Environmental Enhancement	Total Benefit Score (unweighted)	Total Present Worth (millions)	Example Benefit/Cost (unweighted)
1	0	0	0	$13	0.00
2	19	13	32	$19	1.68
3	19	19	38	$27	1.41

Financial Stewardship Benefit/Cost Analysis is Basis for Overall Program Identification

- Rank-order preferred alternatives by Benefit/Cost ratio
- Plot Benefit/Cost versus cumulative spending
- "Knee of Curve" defines start of diminishing returns
- Program scope developed after knee of curve consideration



Financial Stewardship – Incentives and Volunteer Opportunities

- Plumbing Modification Program
- Rain Barrels
- River Sweeps

Financial Stewardship Summary

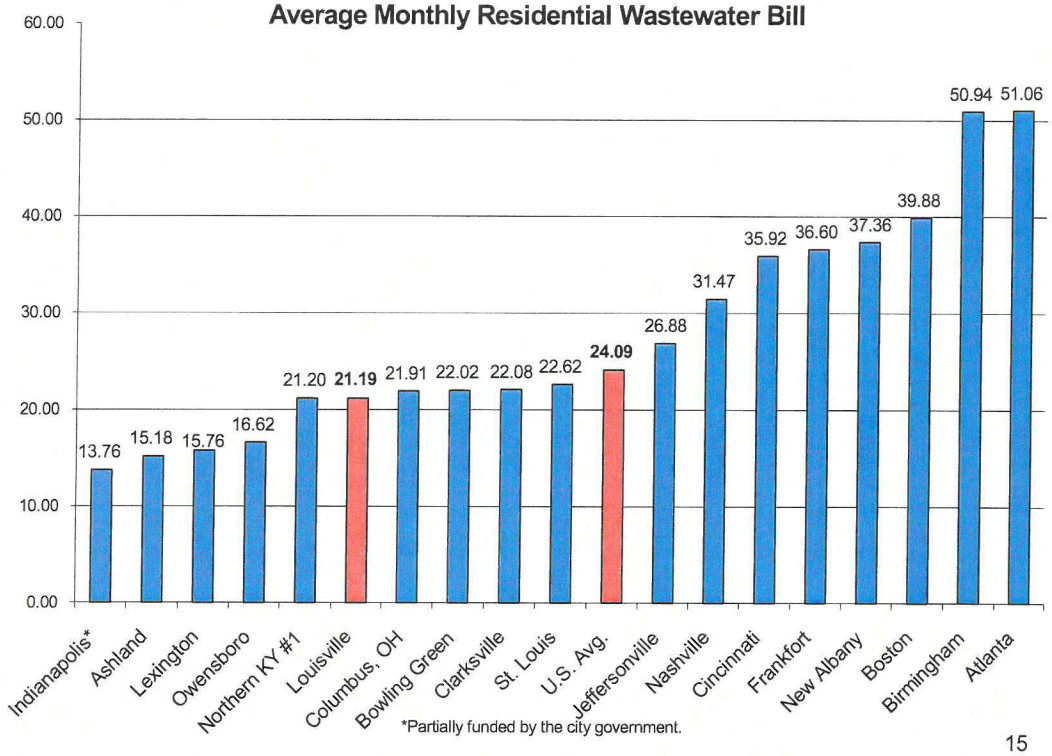
- The Wet Weather Team process is designed to be a systematic way to evaluate the costs and benefits of alternatives
  - Benefits are defined based on community values
  - Costs incorporate life-cycle considerations
- The cost-benefit model is a tool to inform stakeholder discussions about the design and implementation of MSD's Wet Weather Program
  - It is a starting place for discussions about the appropriate level of investment for the community (knee of curve analysis)

Financial Stewardship Discussion

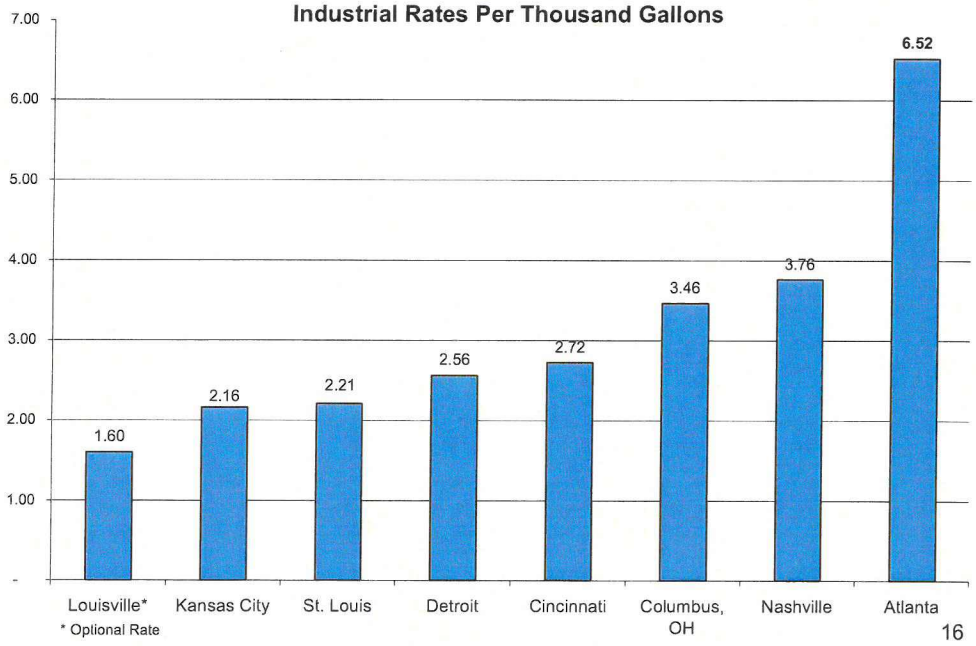
Economic Vitality

What does Economic Vitality Mean to the Stakeholder Group?

- Affordability of rates and fees
- Affordability – housing
- Competitive industrial rates
- Avoid excessive charges and fees for new development (don't push more development outside Jefferson County)
- Fiscal transparency
- Rates and fees predictable and transparent
- Adequacy for development, support smart growth
- Revitalize urban core



Industrial Wastewater Rates



MSD's Development Fees

- Connection Fees – actual cost of the connection + $250 administrative fee
- Capacity Charge - $1,486 per single family equivalent
- Recapture administrative fee – 1% of the amount collected

EPA Affordability Criteria

Consists of two primary criteria:

1. Residential Indicator
2. Financial Capability Indicators

Residential/Financial Indicators

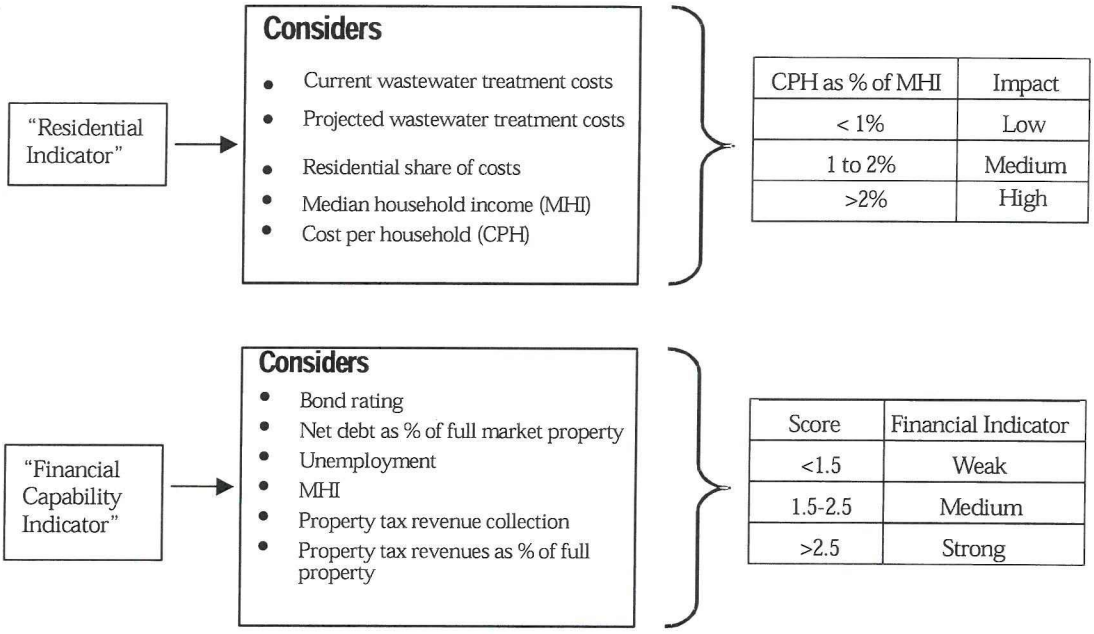


Figure 1
Development and Scoring of Indicators

Evaluation of Louisville/Jefferson County's Financial Capacity

TABLE 6
Summary of Permittee Financial Capability Indicators

	Indicator	Value	Score
1	Bond Rating	A	3
2	Overall Net Debt as a Percent of Full Market Property Value	2.0%	2
3	Unemployment Rate	5.6%	2
4	Median Household Income	$44,453	2
5	Property Tax Revenues as Percent of Full Market Property Value	1.0%	1
6	Property Tax Collection Rate	97.4%	2
7	**Sum of Scores**		**12**
8	**Average Score**		**2**

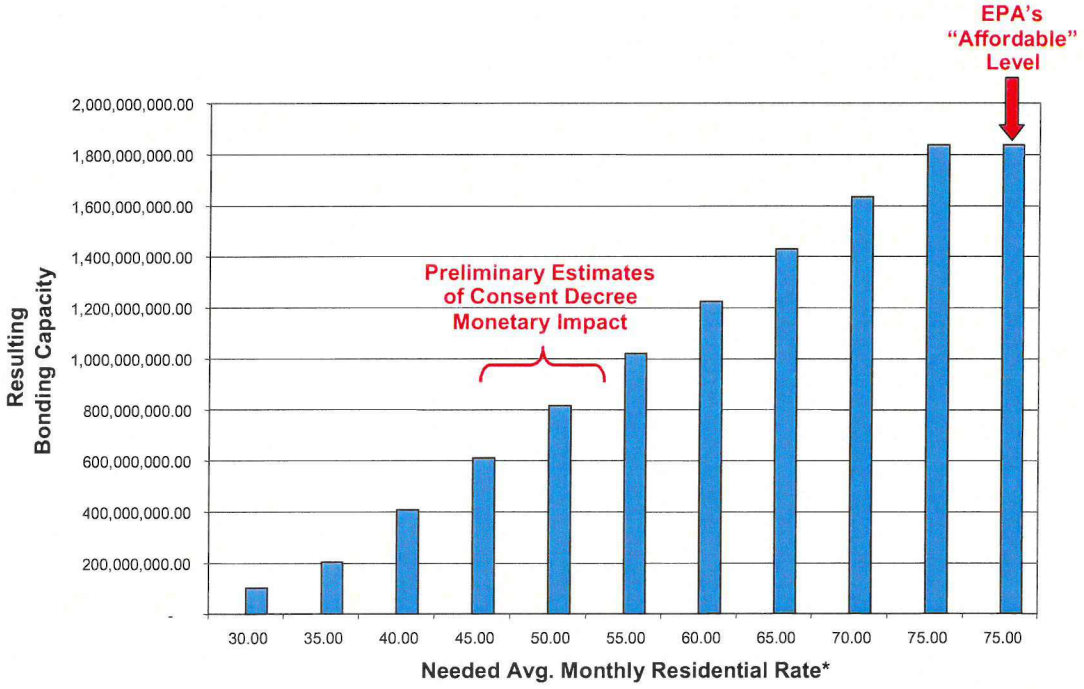
Rankings

Weak	1
Mid-Range	2
Strong	3

MSD Rates at EPA Guidelines

- MSD could charge approximately $50 more per month before our rates would hit EPA guidelines of 2% of median household income (MHI)
- The total MSD bill (drainage & sewer) would be $75 per month at EPA guideline of 2% per MHI
- EPA's definition of "affordable" exceeds preliminary estimates of Consent Decree monetary impact
- Cost effectiveness focus for community investment (Financial Stewardship value)

Bonding Capacity at Various Average Monthly Residential Rates



*Represents the potential peak total rate. Rate increases could occur in stages over a 20-year period.

Adequacy for Development and Smart Growth

- Examples of development charges include:
  - Recapture agreements – allows for the expansion of MSD's system at little or no cost to MSD
  - Excess cost policy – MSD pays for the upsizing of planned sewer infrastructure
  - Regional facility fees
  - Optional rate for commercial/industrial customers provides an incentive for growth

Summary – Economic Vitality

- Current residential wastewater rates are lower than the national average
- Industrial wastewater rates are less than those in other communities
- EPA's affordability guidelines are not likely to constrain increases on rates due to Consent Decree compliance
- MSD has several ways to recover costs for new development
- Potential focus areas for the "Economic Vitality" value: average residential and commercial/industrial rates, development fees

Economic Vitality Discussion

Financial Equity

What Does Financial Equity Mean to the Stakeholder Group?

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

Rate Setting Methodology

- Determine Revenue Requirements (operating expenses, debt service requirements, cash-funded capital outlays, and other financial commitments)

- Revenue sources other than rates (i.e. misc. fee charges & interest income) are deducted from total revenue requirements to determine revenues that must be generated by wastewater and drainage rates

Rate Setting Methodology (Cont.)

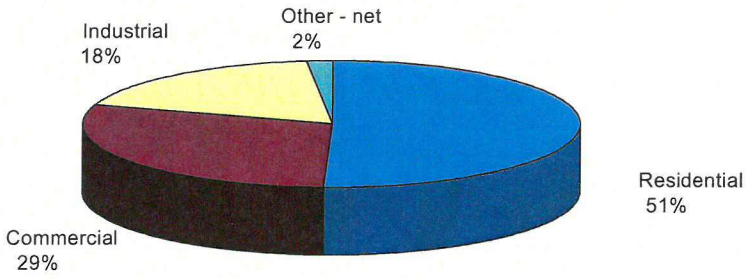
- Allocate rate revenue requirements to specific MSD functions, such as:
  - Wastewater collection and treatment
  - Disposal
  - Drainage
  - Billings and collections services
- Costs allocated to each function are then allocated to service characteristics that measure the services provided
  - Wastewater collection costs are allocated to wastewater flows
  - Treatment costs are allocated between flow, control of biochemical oxygen demand (BOD) and total suspended solids (TSS), etc.

Rate Setting Methodology (Cont.)

- Costs of each service are allocated to customer classes (residential, commercial, and industrial) in proportion to their demand for or discharge of these services

Who is Paying What?

Wastewater Service Charges
FY 2006



Current Assistance/Subsidies Available

- Low interest loans for sewer assessments & connection fees
- Proserve program that allows the deferment of sewer assessments or reduced payments
- Payment plans for sewer/drainage bills
- Waiver of connection fees for low income housing
- Community agencies

Potential Assistance/Subsidies

- Low-income grants
- Shift more of the burden to high water users (i.e., tiered rate structure)
- Set-up donation program similar to L.G.&E's winter assistance program
- Work with LWC to provide extended periods for payment plans

Rate Structure Options

- Lower rates for MFWTP service area
- Set rates based on treatment standards – rates would be higher for those plants with higher standards
- Lower rates for customers served by gravity sewers

Rate Structure Options (Cont.)

- Metered water usage (current structure)
- Metered winter water usage
- Flat rate for residential customer and water usage for commercial & industrial customers
- Plumbing fixtures per household
- Tax rate – bill based on the value of the property being served
- Drainage bill that incorporates qualitative aspects of stormwater management

Financial Equity Summary

- MSD has an established methodology for setting rates based on service costs
- Some forms of assistance and subsidies are available for certain ratepayers
- All residential customers pay approximately equal rates
- About 51% of MSD's wastewater revenues are from residential customers
- WWT stakeholders will provide input to MSD on rate structure options and assistance/subsidies associated with its Wet Weather Program
- Potential focus areas for the "Financial Equity" value: net cost to low-income populations (rates & assistance), rates and fees linked to cost to serve (level of impact)

Financial Equity Discussion

Reference Slides

EPA Affordability Criteria: Residential Indicator

- Measures household affordability or ability to pay
- Most prevalent household cost measure is annual user charges (AUC) as a percentage of median household income (MHI)

$$\frac{\text{Total AUC}}{\text{Annual MHI}} = \text{X percent}$$

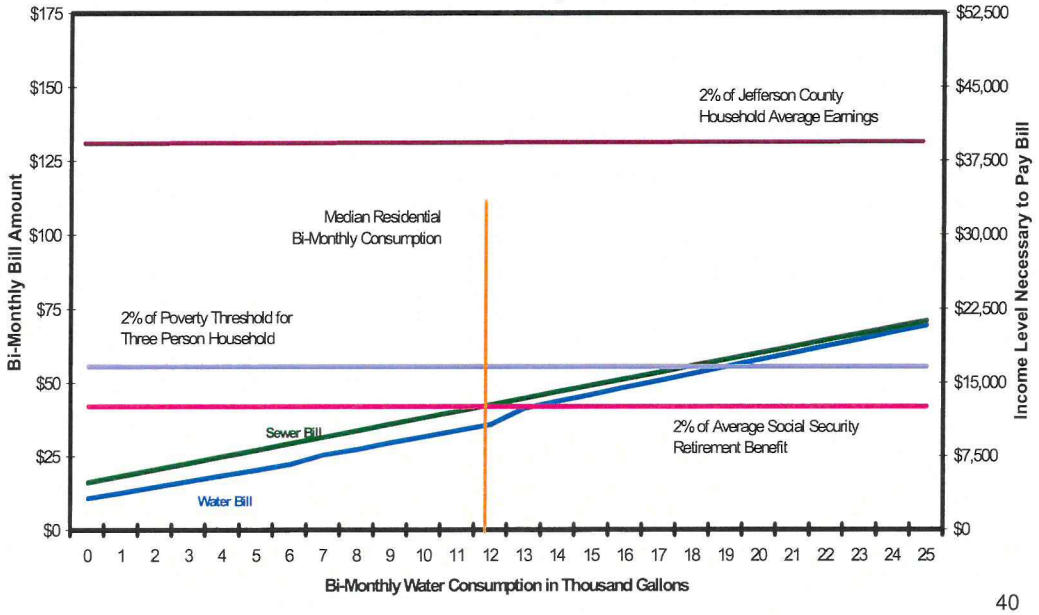
Variations of the formula include:

(1)Inclusion of water and wastewater charges in the numerator

(2)Use of average (mean) household income in the denominator

(3)Weighting of the measures to capture poverty effects

2006
Louisville Median Residential Bi-Monthly Water and Sewer Bill compared to Income Level



EPA Affordability Criteria: Financial Capability Indicators

- Assesses the overall financial health of the community
- Examines bond rating, debt burden, unemployment rate, property tax collection rates, MHI, and other factors to develop a numerical score

Financial Capability Indicator Benchmarks

TABLE 3
EPA Guidance Document Financial Capability Indicator Benchmarks

Indicator	Strong	Mid-Range	Weak
Bond Rating	AAA-A (S&P) or Aaa A (Moody's)	BBb (S&P) Baa (Moody's)	BB-D (S&) Ba-C (Moody's)
Overall Net Debt as a Percent of Full Market Property Value	Below 2%	2%–5%	Above 5%
Unemployment Rate	More than 1 percentage point below the National Average	±1 percentage point of National Average	More than 1 percentage point above the National Average
Median Household Income	More than 25% above Adjusted National MHI	±25% of Adjusted National MHI	More than 25% below Adjusted National MHI
Property Tax Revenues as a % of Full Market Value	Below 2%	2%–4%	Above 4%
Property Tax Collection Rate	Above 98%	94%–98%	Below 94%

Jefferson County Financial Capability Indicator Benchmarks

TABLE 5
Jefferson County Financial Capability Indicator Benchmarks

Indicator	Strong	Mid-Range	Weak
Bond Rating	AAA-A (S&P) or Aaa A (Moody's)	BBb (S&P) Baa (Moody's)	BB-D (S&) Ba-C (Moody's)
Jefferson County	**Aa2/AA**		
MSD	**A/A-**		
Overall Net Debt as a Percent of Full Market Property Value	Below 2%	2% - 5%	Above 5%
Jefferson County		**2.0%**	
Unemployment Rate	More than 1 percentage point below the National Average	± 1 percentage point of National Average	More than 1 percentage point above the National Average
Jefferson County		**Similar to U.S. in 6/06**	
Median Household Income	More than 25% above Adjusted National MHI	+-25% of Adjusted National MHI	More than 25% below Adjusted National MHI
Jefferson County		**6% below US MHI**	
Louisville			**Louisville is 31% below US**
Property Tax Revenues as a % of Full Market Value	Below 2%	2% - 4%	Above 4%
Jefferson County	**1.0%**		
Property Tax Collection Rate	Above 98%	94% - 98%	Below 94%
Jefferson County		97.6%	

Public Participation During the Wet Weather Team Process

Wet Weather Team

Stakeholder Group Meeting

January 18, 2007

Regulatory Requirements for Public Participation

- EPA requires MSD to have a public participation process that involves the affected public in selecting long-term controls for sewer overflows
  - The Wet Weather Team is one part of this process
- Under the Consent Decree, the Wet Weather Team must develop a "program for public information, education, and involvement"
  - This program will be part of the long-term, integrated Wet Weather Program MSD develops based on stakeholder input

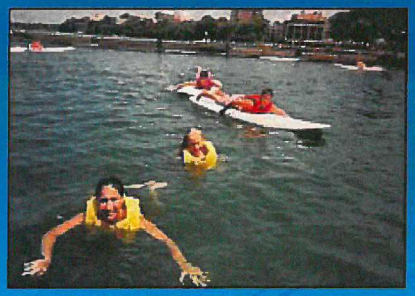
Phases of Public Participation

- During the two-year Wet Weather Team process (July 2006-May 2008)
- Public review and comment period on the draft Wet Weather Plan (late 2008)
- Wet Weather Program implementation (2009 & on)

This presentation focuses on the Wet Weather Team process

Public Participation Components

- Wet Weather Team stakeholder meetings
- Four public informational meetings
- Ongoing public outreach and education



Objectives of Public Informational Meetings

- General update on Consent Decree activities
- Recap issues addressed so far by the Wet Weather Team
- Summarize remaining steps in the Wet Weather Team process
- Act as a forum for receiving public comment

Potential Schedule and Content of Public Informational Meetings

- April 2, 2007
  - Overview of Wet Weather Team stakeholder process and work to date
  - Update on water quality monitoring and modeling
- November 26, 2007
  - Overview of risk characterization process
  - Introduction to alternatives being considered
- March 25, 2008
  - Presentation of preliminary recommendations for the Wet Weather Plan
- October 21, 2008
  - Review the draft Wet Weather Plan

Ongoing Public Outreach and Education Activities

- Project WIN page on MSD's website (www.msdlouky.org/projectwin/)
- Wet weather warning signs
- Written Materials:
  - "Consent Decree Spotlight" feature in MSD's monthly newsletter (at least 6 editions/year)
  - Billing inserts informing customers on issues of importance (3-4 times/year)
  - Updates to the wet weather informational brochure

Ongoing Public Outreach and Education Activities, Continued

- Media Communications:
  - Media warnings of wet weather events
  - Distribution of Public Service Announcements to local media outlets
- Presentations and Events:
  - Continuation of the MSD Speaker's Bureau
  - Continuation of annual "River Sweeps"

River Sweep

Areas of Wet Weather Team Input

- Content and timing of the public informational meetings
- Gaps in public outreach and education during Wet Weather Team process