

Wet Weather Team Project

Meeting Materials

Summer 2007–Spring 2008

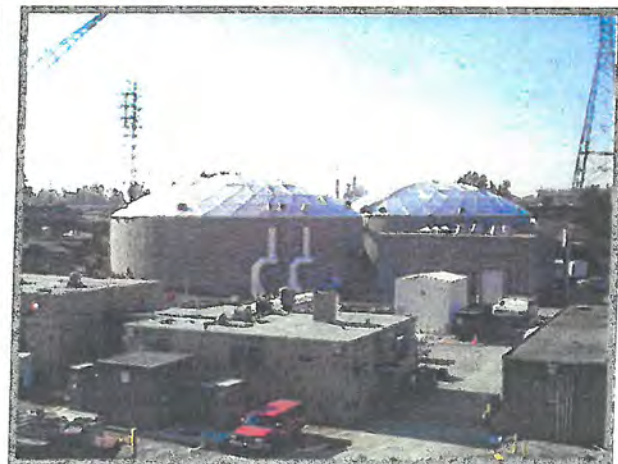
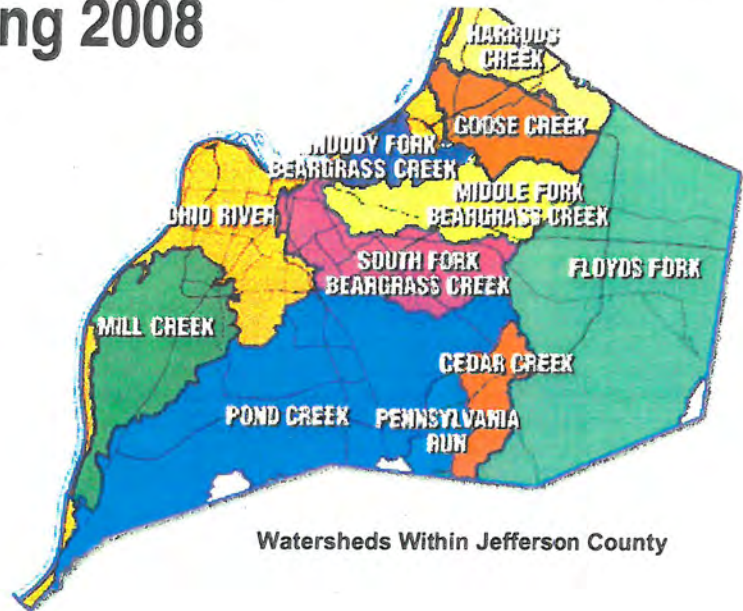
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WWT Stakeholders Meeting # 22 12/4/2008



MSD

Louisville and Jefferson County
Metropolitan Sewer District



Agenda

Revised Draft Agenda
Louisville and Jefferson County Metropolitan Sewer District (MSD)
Wet Weather Team Meeting #22

Thursday, December 4, 2008, 4:20-7:15 PM
MSD Main Office, Board Room
700 West Liberty St., Louisville

Meeting Objectives:

- Presentation on MSD's amended consent decree (released for public comment on December 1).
- Review and discuss public comments received during the public period for MSD's Draft Integrated Overflow Abatement Plan (IOAP) and comments planned by WWT stakeholders.
- Discuss revisions to the Wet Weather Team Stakeholder Support Memo and the IOAP Vision.
- Review draft timeline for the finalization of the IOAP and identify other next steps.

4:20 PM Participants Arrive and Get Settled

4:30 PM Introductions, Review Agenda and Ground Rules (10 minutes)

- Review meeting objectives and ground rules.
- WWT stakeholder updates and announcements.

4:40 PM Wet Weather Project Updates and Observations (10 minutes)

- Updates on issues related to the Wet Weather Team Project and follow-up items from the last Wet Weather Team meeting.
- WWT stakeholder updates and announcements.

4:50 PM Amended Consent Decree Presentation (20 minutes)

- Presentation on MSD's amended consent decree, which was released for public comment on December 1, and any implications for changes to the IOAP.

5:10 PM IOAP Public Comment Discussion (40 minutes)

- MSD presentation and Q&A session on comments received on the Draft IOAP.
- WWT stakeholder oral summaries of planned comments.

5:50 PM WWT Stakeholder Support Memo and IOAP Vision (40 minutes)

- Discuss revisions to the Wet Weather Team Stakeholder Support Memo and the IOAP Vision.

6:30 PM Dinner Break (20 minutes)

Dinner will be provided for Wet Weather Team members.

6:50 PM Opportunity for Observer Comments (10 minutes)

12/4/08 Wet Weather Team Meeting Agenda, Continued

7:00 PM **Wrap Up and Next Steps (15 minutes)**

- Review the overall process and timeline for finalizing the IOAP.
- Discuss next steps for engaging the Wet Weather Team if any additional comments received by December 5, 2008 imply significant potential changes to the IOAP.

7:15 PM **Adjourn**

**Final Draft Meeting Summary
Wet Weather Team Meeting #22
Thursday, December 4, 2008
MSD Main Office, Louisville**

The Wet Weather Team (WWT), chartered by the Louisville and Jefferson County Metropolitan Sewer District (MSD), met on December 4, 2008, at MSD's main office. The objectives of the meeting were to:

- Learn about MSD's amended consent decree, which was released for public comment on December 1, 2008.
- Review and discuss comments received during the public comment period for MSD's Draft Integrated Overflow Abatement Plan (IOAP) and comments planned by WWT stakeholders.
- Discuss revisions to the WWT Stakeholder Support Memo and the IOAP Vision.

Wet Weather Project Updates and Announcements

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

- EPA Green Infrastructure Workshop: EPA hosted a national workshop on green infrastructure in Louisville in November 2008. Brian Bingham of MSD presented on Louisville's Long Term Control Plan for combined sewer overflows (CSOs) at the workshop. Other presenters included EPA headquarters, EPA Region 4, the Commonwealth of Kentucky, and several other CSO communities.
- Project WIN Public Meetings: In addition to the formal public hearing on the Draft IOAP, MSD hosted three informational meetings about Project WIN and the IOAP on November 10, 12, and 20, 2008. The first meeting in Southwest Jefferson County had the greatest attendance.
- MSD Sustainability Report: MSD distributed copies of MSD's 2007 Sustainability Report. The 2007 report mentions the role of the Wet Weather Team stakeholder group in advising MSD.
- Acknowledgment of WWT Stakeholder Input: MSD Executive Director Bud Schardein thanked WWT stakeholders for their valuable input and participation in the 2.5-year process to develop the IOAP. He stated that the WWT stakeholders have been very helpful to MSD in developing a plan that meets consent decree and regulatory requirements, makes essential improvements to water quality, and uses the community's resources wisely. Mr. Schardein further noted that EPA has seen the value of the community engagement process through the Wet Weather Team's work.

Amended Consent Decree Presentation

Angela Akridge of MSD gave a presentation on MSD's amended wet weather consent decree, which was released for public comment on December 1, 2008 (the comment period will close on December 31, 2008). Due to a confidentiality agreement, MSD could not disclose information about the amended consent decree before it was made available for public comment; however, MSD and the technical team nevertheless integrated considerations related to the amended consent decree into the IOAP. The claims for relief in the complaint fell into three categories: (1) resolution of "blending" at the Jeffersontown (J-Town) Wastewater Treatment Plant (WWTP); (2) Kentucky Pollutant Discharge Elimination System (KPDES) permit exceedances; and (3) operational record-keeping and reporting.

The specific changes to MSD's consent decree include the following.

- Interim milestones have been established for the expansion, enhancement, and/or elimination of several WWTPs by December 2015 (including eliminating blending at J-Town WWTP, eliminating five Prospect WWTPs, and upgrading other WWTPs).
- By March 31, 2010, MSD must make a decision about how to eliminate blending at the J-Town WWTP; three options are currently being considered (see additional info below).
- A series of operational enhancements at WWTPs have been included that are designed to improve performance, monitoring, record-keeping, reporting, and permit compliance.
- MSD is required to pay a \$230,000 civil penalty and complete a \$400,000 Supplemental Environmental Project (SEP) that focuses on stream restoration.

WWT members asked several clarifying questions in response to the presentation and also provided the following comments.

- A few WWT stakeholders commented that it is good for the community that MSD has identified different strategies to solve problems with the J-Town WWTP while also making economic development possible in Southeast Jefferson County.
- In response to questions, MSD explained that “blending” is a term of art related to mixing wastewater flows that receive different levels of treatment. In a typical blending scenario, during wet weather conditions wastewater flows are separated into two streams. One wastewater stream receives preliminary treatment, primary treatment (settling), and secondary treatment (biological treatment) before disinfection. The other stream (flows that exceed secondary treatment capacity) receives preliminary and primary treatment only before being mixed with the other stream for disinfection.
- WWT participants asked about the process that MSD would use for making decisions about the J-Town members, and noted that it could be useful to involve other jurisdictions, especially if the legislature were to consider developing a regional wastewater treatment plant. MSD stated that there would be a public process associated with the J-Town decision, but the details have not been decided.

Integrated Overflow Abatement Plan Public Comment Presentation

Gary Swanson of CH2M HILL summarized the public comments MSD had received in writing and at the public hearing during the public comment period for the IOAP, as of the WWT stakeholder meeting. Several comments were not related to overflow abatement; other comments addressed topics such as the elimination of the J-Town WWTP, desired features or questions about specific projects, MSD spending and rates, and provisions for local jobs and labor agreements. None of these comments affect the IOAP Vision. During this presentation, Mr. Swanson elaborated on a few elements of the IOAP, as follows.

- MSD has considered several alternatives to eliminate blending at J-Town. Of these alternatives, the following three remain viable:
 - Upgrade and expand the J-Town WWTP on its current site. (This requires the Kentucky Department for Environmental Protection [DEP] to make a decision about waste load allocation.)
 - Eliminate the J-Town WWTP and divert flows to a new regional WWTP. (This requires the State Legislature to form a new regional sewer district.)
 - Eliminate the J-Town WWTP and divert flows to the Morris Forman WWTP and the West County WWTP, which is now named the Derek R. Guthrie Water Quality Treatment Center. (This is the option included in the IOAP, since it can be implemented in the time available and does not require State government action.)
- Eliminating sanitary sewer overflows (SSOs) increases wet weather flows in the sewer system. Dry weather sanitary sewage will be routed to the Morris Forman WWTP, while diluted wet weather flows from the sanitary sewer system will be routed to West County WWTP, as originally intended.

- The proposed expansion of West County WWTP only affects wet weather flows.
- Wet weather flows do not affect dry weather capacity for continued economic growth in Southwest Jefferson County.

Comments and questions from WWT members about this presentation included the following.

- In response to a question, Gary Swanson noted that the expansion of the West County WWTP would occur within the existing site boundaries, so would not affect residential areas.
- Several WWT members commented on the idea of the State Legislature setting up an independent regional sewer district to develop and operate a regional wastewater treatment plant for the Salt River. It was noted that the Legislature would need to act in this session in order to affect MSD's decision about the J-Town WWTP.
- A few WWT stakeholders noted that MSD did a good job of diffusing public concerns and correcting misperceptions about the IOAP after the Project WIN public meeting in Southwest Jefferson County.
- With regard to the public comment about closing a package plant, MSD noted in response to a question that there are several package plants that MSD does not own, so closing those plants would be outside the scope of what MSD can commit to in the IOAP.

WWT Stakeholder Comment Summaries

Several WWT stakeholders summarized the comments that they and/or their affiliated organizations were submitting on the Draft IOAP. Highlights of these comments included the following.

General Comments

- Several WWT members indicated their appreciation for participating in the Wet Weather Team and MSD's willingness to incorporate WWT suggestions into the IOAP.
- A few WWT members noted that many of the WWT's ideas identified during the IOAP development process were deemed to be out of scope of the IOAP and were deferred to the Municipal Separate Storm Sewer System (MS4) program. They also expressed concern that the stormwater program might not necessarily have the funding to support all the needed actions.
- Some WWT participants noted that the consent decree was the driver for MSD's actions in the IOAP, and indicated that there may be a need for legislation, along with education, to make people do things.

Green Solutions

- Several WWT stakeholders suggested that MSD should expand plans for green infrastructure, site restoration, and related "green" efforts. Specific suggestions included:
 - Consider site restoration at all IOAP sites with disturbance.
 - Concentrate green infrastructure projects in high-visibility areas to better evaluate and demonstrate their effectiveness. For example, model one area of the community that has significant amounts of rain barrels in order to evaluate their effectiveness.
 - Be aggressive and "aim high" with green infrastructure efforts, while also measuring the effectiveness of green infrastructure projects over time and communicating the results.
 - Consider aerating soils and other ways that soils management practices can supplement stormwater runoff reduction efforts to address CSOs.
 - Increase the number and square footage of rain gardens to better show their results. (Note that MSD has already committed to increasing the number of green infrastructure demonstration projects in the IOAP beyond the 18 demonstration projects identified in the IOAP Vision.)

- Provide technical assistance to support the green infrastructure programs involving the community (e.g., assistance for rain garden design).
- Consider partnerships with other organizations to promote and offer technical assistance for low-impact development, green homes, and other non-sewer factors that affect water quality.

Education and Outreach Program

- Most of the WWT’s discussion at the meeting focused on the public education, outreach, and involvement program included in the IOAP. WWT stakeholder comments included the following.
 - Several WWT members noted that the scope and scale of the public education and outreach program defined in the Draft IOAP could use additional fleshing out.
 - The chapter about the public program in the Draft IOAP frequently describes the future public education and outreach plans by stating that MSD will “continue” its current efforts. This could imply that there will be no real changes in MSD’s level of investment in these activities, and it remains a question as to whether the current level of investment is sufficient to change public opinions and behaviors.
 - The public education and outreach effort should have an office with its own funding and staff. This wouldn’t necessarily need to be housed at MSD; a separate entity could also provide this function in the community.
 - Several WWT participants noted that the education effort should be broad enough to address stormwater runoff and non-point source pollution issues, along with sewer overflow control. It could also be useful to link these water quality education efforts to climate change efforts in the community, as a way of reaching a broader audience.
 - A few WWT members urged MSD to make specific, long-term commitments to the education program in the IOAP, as a way of creating “teeth” for educational infrastructure and advancing systemic changes in public awareness and behaviors. It was suggested that the education program should have the same level of detail as gray infrastructure projects in the IOAP.
 - The performance measurement and evaluation approach for the public education and outreach program appears weak. It is not clear whether the performance measures identified (e.g., number of rain barrels distributed) will be sufficient and robust enough to evaluate the effectiveness of behavior change efforts as compared to the engineering predictions. In addition, measuring active participation in green infrastructure programs such as the rain barrel program may not be a good proxy for evaluating overall changes in public awareness.
 - Some WWT members suggested that it could be useful to have a center at the University of Louisville or another entity for measuring and evaluating the effectiveness of education efforts.
 - A few WWT stakeholders suggested turning the Letterley Pump Station, which has one of the oldest CSOs in the county, into an interpretive center.

Project-Specific Suggestions

- Project-specific suggestions included:
 - Incorporate erosion-control measures at the outlet of the CSO 140 sewer separation project.
 - Consider other locations for siting the facility at Lexington Road and Payne Street that would avoid building a storage basin in an area planned for floodplain compensation.
 - Avoid siting the I-64 and Grinstead storage basin and the August Moon storage basin in the historical locations of Beargrass Creek meanders, so that those sites could remain available for future restoration efforts.
 - Incorporate additional site restoration at the Nightingale Pump Station and near the Beechwood Village pumped SSO locations near the Middle Fork of Beargrass Creek.

MSD's reactions and responses to the WWT's suggestions included the following.

- MSD thanked WWT stakeholders for their comments and indicated that many of the suggestions would be considered for incorporation in the IOAP or during individual project implementation (e.g., the project-specific suggestions).
- Several MSD staff noted that education is critical to the success of the IOAP, and indicated that MSD shares the same overall goal for public education and outreach as the WWT stakeholder group.
- MSD and technical team members explained that funding for the education program comes out of MSD's operating budget, which the MSD Board approves annually. While capital expenditures are included in the IOAP, MSD has not included operating budgets in what will become a federally enforceable document.
- MSD staff expressed concern about the inflexibility of committing to *how* it will run the education program (versus *what* MSD aims to accomplish with it) in the consent decree response. MSD would prefer to have the ability to adapt its approaches over time based on what MSD learns through monitoring and evaluation efforts. This flexibility will help MSD ensure that the education program is cost-effective and efficient. MSD supports the concept of a central "clearing house" for comprehensive environmental education in the community, recognizing that the environmental education challenges and opportunities extend beyond the narrow objectives of the IOAP. MSD would be interested being one of many agencies that support this environmental education center.
- The Post Construction Compliance Monitoring chapter of the IOAP describes monitoring and evaluation plans associated with the public education and green infrastructure programs; these plans include flow monitoring as well as customer surveys.
- MSD will be undertaking a public process associated with the MS4 (stormwater) permit renewal. MSD invited WWT stakeholders to participate if they would be interested. Outreach and education will be a large part of the MS4 efforts.

In response to the WWT's suggestions, MSD agreed to work with WWT members next year to further develop plans for the education and outreach program.

WWT Stakeholder Support Memo and IOAP Vision

In light of the WWT's discussion about the IOAP, Rob Greenwood of Ross & Associates proposed three additions to the WWT Stakeholder Support Memo and IOAP Vision, as follows.

- Note that there is the expectation that WWT stakeholders will continue to work with MSD to better define the desired scope and scale of the Project WIN public education and outreach program.
- Indicate that WWT stakeholders will also work with MSD to improve the approach for measuring and evaluating the effectiveness of the public education and behavior-change efforts.
- Include a statement about the importance of a broad, community-wide education effort focused on water quality, even though the IOAP has relatively narrow objectives.

Each WWT stakeholder member present at the meeting individually approved the WWT Stakeholder Support Memo and the IOAP provided that these additions would be made. The facilitation team will make the proposed changes to the documents and then send the materials to the WWT for a final review.

Observer Comments

There were no observer comments at this meeting.

Wrap Up and Next Steps

- The facilitation team will revise the WWT Stakeholder Support Memo and IOAP Vision based on the meeting's discussions, and will circulate revised drafts to WWT members for review the week of December 8, 2008. Once finalized, the documents will be included in the Final IOAP.
 - MSD and the facilitation team will provide an e-mail update to the WWT on additional comments received on December 5, 2008 (the comment deadline) and will identify whether any additional changes are needed to the IOAP Vision in response.
 - MSD will prepare a responsiveness summary for the public comments received on the Draft IOAP.
 - MSD will prepare the Final IOAP, seek MSD Board approval on the plan, and then submit the Final IOAP to EPA and Kentucky DEP by December 31, 2008.
 - After MSD submits the IOAP to EPA and Kentucky DEP, the following activities are anticipated.
 - MSD will meet with EPA and Kentucky DEP reviewers in January 2009 to discuss the IOAP.
 - Comments from the regulatory agencies are due March 1, 2009.
 - MSD may invite WWT stakeholders to a meeting to discuss potential changes to the IOAP to respond to the comments (potentially in April 2009).
 - MSD will resubmit the IOAP sixty days after receiving comments from EPA and Kentucky DEP.
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Meeting Participants

Wet Weather Team Stakeholders

Susan Barto, Mayor of Lyndon

Stuart Benson, Louisville Metro Council, District 20

Charles Cash, Louisville Metro Planning & Design Services

Allan Dittmer, University of Louisville

Faye Ellerkamp, City of Windy Hills

Arnita Gadson, West Jefferson County Community Task Force / Kentucky Environmental Quality Commission

Tom Herman, Zeon Chemicals

Rick Johnstone, Deputy Mayor, Louisville Metro Mayor's Office

Bob Marrett, CMB Development Company

Kurt Mason, Jefferson County Soil and Water Conservation District

Judy Nielsen, Louisville Metro Department of Public Health and Wellness

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, Louisville Metro Council, District 9

David Wicks, Jefferson County Public Schools

MSD Personnel

Angela Akridge, MSD Regulatory Policy Manager

Brian Bingham, MSD Regulatory Management Services Director

Mark Johnson, MSD Director of Engineering/Operations and Chief Engineer

Bud Schardein, MSD Executive Director

Facilitation and Technical Support

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

Meeting Observers

Jim Bruggers, Courier-Journal
Phyllis Croce, MSD
Kristen Crumpton, Tetra Tech
Jerry Ferguson, MSD
Kandris Goodwin, MSD
Justin Gray, MSD
Sue Green, MSD
Jim Huiting, Tetra Tech
Clay Kelly, Strand Associates
Kevin Kennoy, Tetra Tech
Tim Kraus, O'Brien & Gere
John Lyons, Strand Associates
Phil Scott, O'Brien & Gere
Ram Vliddagiri, The Corradino Group
Joy Walker, MSD

Meeting Materials

- Agenda for the 12/4/08 WWT Meeting
- Summary of the 9/23/08 WWT Meeting
- MSD's Amended Consent Decree Presentation
- Project WIN Public Comment Update Presentation
- WWT Stakeholder Support Memo (12/4/08 Draft)
- Integrated Overflow Abatement Plan Vision (12/4/08 Draft)

Draft Wet Weather Team Stakeholder Support Memo for Discussion on 12/4/08
[Proposed Changes Highlighted]

MEMORANDUM

TO: Louisville and Jefferson County Metropolitan Sewer District Board

FROM: Stakeholder Members of the Wet Weather Team

DATE: December 5, 2008

SUBJECT: Draft Integrated Overflow Abatement Plan

As stakeholder members of MSD's Wet Weather Team (WWT), we wish to indicate our support for the Final Integrated Overflow Abatement Plan (IOAP) as MSD transmits the plan to the U.S. Environmental Protection Agency (EPA) and the Kentucky Environmental and Public Protection Cabinet. The attached document, "Vision for MSD's Integrated Overflow Abatement Plan," summarizes the Wet Weather Team's common understanding of the high-level architecture and components of the IOAP. As stakeholder members of the WWT, we played an active role in developing the IOAP Vision. Our support for the IOAP is based on the expectation that the complete plan is fully reflective of and consistent with the IOAP Vision. We support this vision for improving wet weather sewer overflow management in our community. In this memorandum, we review the composition and charge of the Wet Weather Team, describe the results of the stakeholder subgroup's deliberations, and outline our support for the IOAP.

Wet Weather Team Composition and Charge

The Wet Weather Team consists of community representatives, elected officials, MSD personnel, and technical consultants. The nineteen stakeholders on the Wet Weather Team include individuals recognized as community opinion leaders associated with environmental advocacy, business and industry, elected officials, local government, community neighborhood, recreation, public health, environmental justice, and organized labor interests. WWT stakeholders have not formally represented their specific affiliated organizations as part of the team, but rather have provided input reflective of the broad interest areas in which they lead.

MSD chartered the stakeholder subgroup of the Wet Weather Team to "provide guidance on the development of an integrated Wet Weather Program that will comply with applicable regulatory requirements and will minimize the impacts of wet weather discharges on water quality, aquatic biota, and human health." Through MSD's consent decree with EPA and the Kentucky Environmental and Public Protection Cabinet, the WWT was charged with two primary tasks: (1) preparing a plan for funding MSD's overflow abatement program and (2) developing a program for public information, education, and involvement. In addition to these tasks, MSD sought guidance from WWT stakeholders on MSD's overall investment, policy, and performance choices in the development of the IOAP.

Results of the Wet Weather Team's Deliberations

The Wet Weather Team met 22 times from July 2006 through December 2008 and provided input on all major components of the IOAP, as well as the analytic framework and the public involvement process MSD used to develop the IOAP. The WWT also met to review the public comments submitted on the

Draft IOAP and discuss the changes proposed in the Final IOAP. There are four areas of the WWT stakeholder subgroup's deliberations that we would like to highlight, as follows.

1. **Development of the Analytic Framework:** The WWT stakeholders, along with other WWT members, identified and agreed upon a set of community values to use in the development of MSD's IOAP. We also advised MSD's technical team on a performance evaluation framework for using those values to evaluate project alternatives for MSD's IOAP. The performance evaluation framework includes both a benefit-cost scoring methodology for selecting the best alternatives at the project level and a systematic process for considering values that relate to the program as a whole. (This analytic framework is further described in the attached Vision.) We believe that this analytic framework is rigorous, transparent, and replicable, and that it provides an effective way to understand and balance tradeoffs among potentially conflicting community interests.
2. **Application of the Analytic Framework:** The WWT stakeholder subgroup has reviewed examples of how MSD's technical team has used the values-based performance evaluation framework to evaluate project alternatives to address combined sewer overflow (CSO) and sanitary sewer overflow (SSO) problems in our community. Moreover, we have also reviewed and provided input on how the technical team has evaluated the IOAP according to the WWT's programmatic community values—customer satisfaction, economic vitality, education, environmental justice and equity, financial equity, and financial stewardship. We believe that the analytic framework has been applied consistent with the WWT's expectations in the development of the IOAP and has produced a robust, replicable, and transparent analysis.
3. **IOAP Vision:** We helped develop the attached "Vision for MSD's Integrated Overflow Abatement Plan" along with the MSD personnel and technical consultants who are on the Wet Weather Team. **The IOAP Vision** summarizes the WWT's common understanding of the high-level architecture and components of the IOAP, and it documents the WWT's consensus about several crucial aspects of the IOAP. The Vision outlines and provides highlights of the expected water quality benefits of the IOAP; the levels of control for CSOs and SSOs in our community; the range of control options in the IOAP; the analytic framework and process used to select control options; the public information, education, and involvement program (known as "Project WIN"); the monitoring, evaluation, and adaptive management plan; future development considerations relevant to the IOAP; and the IOAP funding plan. As stakeholder members of the WWT, we support this vision for improving wet weather sewer overflow management in our community.
4. **Summary of IOAP Projects:** We believe the project mix and outcomes that form the backbone of the IOAP (as captured in the attached IOAP Vision) reflect responsiveness to MSD's consent decree and provide for a critical, first increment of water quality improvement for our community, while ensuring wise and effective use of our community's resources. The IOAP Vision draws on front end consideration of and investment in green infrastructure and other source control approaches, including "private side" inflow and infiltration (I&I) control. These early investments will act to test and demonstrate the effectiveness of these approaches, creating the prospect, based on demonstrated performance, for expanding their role and lowering community costs as MSD implements the IOAP. We understand that MSD, consistent with the Post-Construction Compliance Monitoring Plan, will closely monitor and report on the efforts for both regulatory and public education purposes.

As MSD moves forward in coming years with IOAP implementation, we do anticipate the program will face, as all programs of this type do, project-specific challenges related to local community understanding and acceptance. In this context, we understand MSD is committed to using focused and sustained neighborhood education and outreach efforts to support project-specific and overall program implementation and will strive to address localized needs consistent with overall IOAP requirements. At the same time, we believe all localities throughout the MSD system must keep in mind that individual IOAP project locations and types have emerged from a rigorous and consistently applied technical analysis. The IOAP projects exist as critical building blocks for an overall community program framed by federal and state regulatory requirements, community water quality and public health improvement objectives, and overall rate payer capacity.

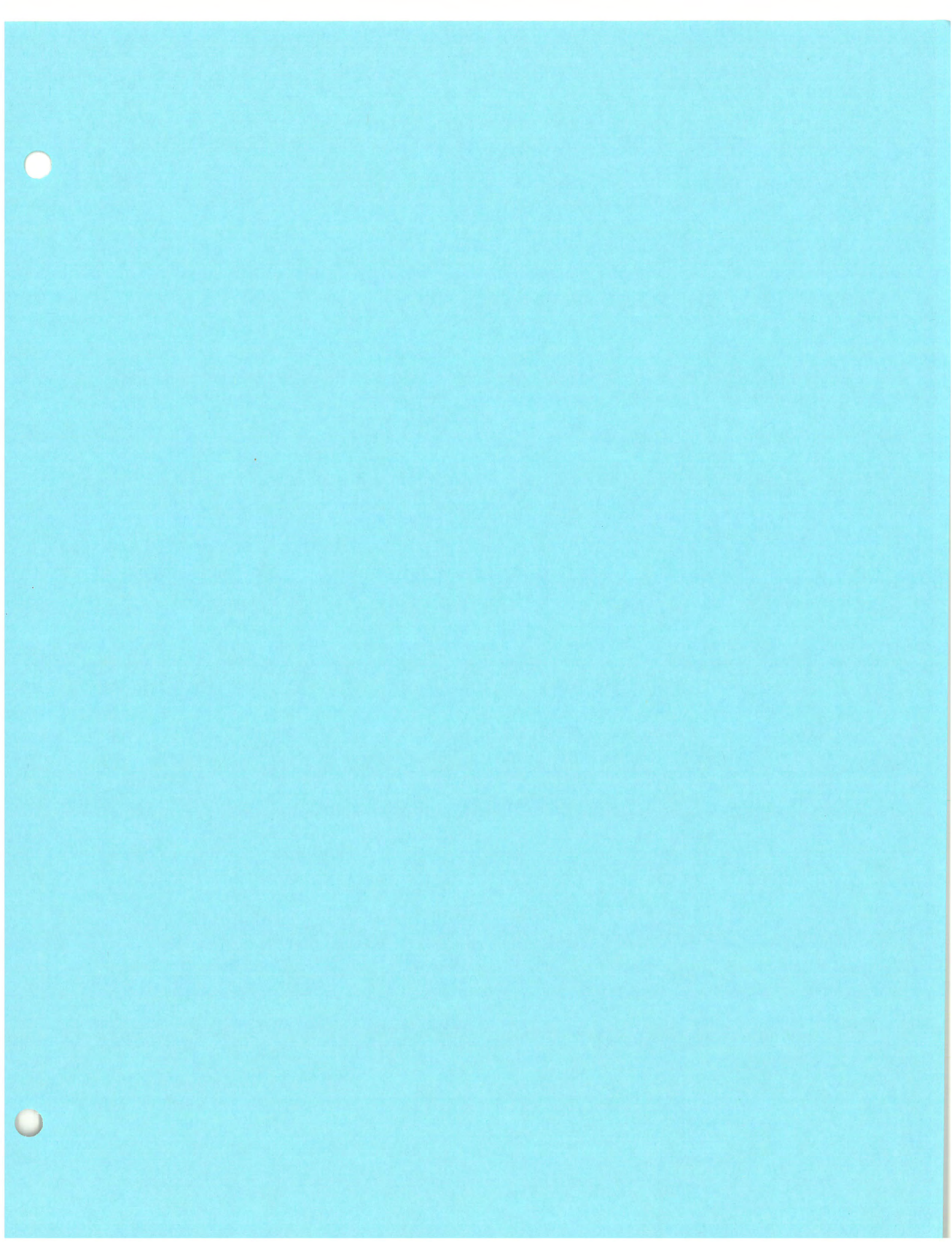
The stakeholder subgroup of the Wet Weather Team appreciates the opportunity to have contributed to MSD's IOAP development efforts. We look forward to the MSD Board's review of the **Final** IOAP and **MSD's submittal** of the Final IOAP to EPA and the State of Kentucky by December 31, 2008.

Thank you for the opportunity to contribute to this critical community improvement initiative. Please feel free to contact us individually or collectively with any questions or perspectives you may have.

Stakeholder Members of the Wet Weather Team

<u>Member</u>	<u>Organization*</u>
Steve Barger	Labor
Susan Barto	Mayor of Lyndon
Stuart Benson	Louisville Metro Council, District 20
Charles Cash	Louisville Metro Planning & Design Services Department
Allan Dittmer	University of Louisville
Laura Douglas	E.ON U.S. LLC
Faye Ellerkamp	City of Windy Hills
Arnita Gadson	West Jefferson County Community Task Force / Kentucky Environmental Quality Commission
Mike Heitz	Louisville Metro Parks Department
Tom Herman	Zeon Chemicals
Rick Johnstone	Deputy Mayor, Louisville Metro Mayor's Office
Bob Marrett	CMB Development Company, LLC
Kurt Mason	Jefferson County Soil and Water Conservation District
Judy Nielsen	Louisville Metro Department of Public Health and Wellness
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	Louisville Metro Council, District 9
David Wicks	Jefferson County Public Schools

*Stakeholders on the Wet Weather Team do not formally represent their specific affiliated organizations, but rather seek to provide input reflective of the broad interest areas in which they lead. Along with the stakeholder subgroup, the Wet Weather Team includes MSD personnel and technical consultants.



Vision for MSD's Integrated Overflow Abatement Plan December 4, 2008 [Proposed Changes Highlighted]

This document summarizes the vision for MSD's Integrated Overflow Abatement Plan (IOAP), as understood and endorsed by the Wet Weather Team (WWT).

Scope of the Integrated Overflow Abatement Plan and Expected Water Quality Benefits

The Louisville and Jefferson County Metropolitan Sewer District's Integrated Overflow Abatement Plan is a long-term plan to control combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs) in the community. The IOAP is expected to improve water quality in both Jefferson County streams and the Ohio River. The expected water quality benefits of the IOAP include: (a) reductions in the peak levels of bacteria in Beargrass Creek and other Jefferson County waterways; and (b) a reduction in the duration of wet weather impairment of local waterways (i.e., the number of days that bacteria levels exceed water quality standards during periods of wet weather). The IOAP—in coordination with other community water quality initiatives (further described below)—will also improve water quality under ambient conditions.

The specific benefits anticipated from the IOAP include the following:

- The suite of projects selected for the Long Term Control Plan (LTCP) for CSOs will result in approximately 95 percent capture and treatment of wet weather combined sewage during an average year. (As a point of reference, the “presumptive approach” in EPA’s CSO Control Policy is based on a minimum of 85 percent wet weather capture.)
- Remaining CSO loads (after removing background) will no longer “cause or contribute” (as defined in EPA’s CSO Control Policy) to water quality standard violations in the Ohio River. Peak fecal coliform counts are modeled to be reduced by 54 percent, from 100,000 colony forming units per 100 milliliter (cfu/100mL) to 46,000 cfu/100 mL (downstream from Morris Forman Wastewater Treatment Plant).
- In Beargrass Creek peak fecal coliform counts are modeled to be reduced by 18 percent, from 44,300 cfu/100mL to 37,400 cfu/100 mL (at the mouth of Beargrass Creek). The control level associated with these reductions exceeds the EPA CSO Control Policy “presumptive approach,” 85 percent wet weather capture threshold and reflects a point of significantly diminishing returns under the “knee of the curve” benefit-cost analysis.
- The suite of projects selected for the Sanitary Sewer Discharge Plan (SSDP) for SSOs will result in the elimination of capacity-related SSOs up to the site-specific level of protection (described below).
- The SSO projects are anticipated to eliminate an average of 145 SSO events per year, based on 2005–2007 data.
- In terms of water quality, SSO projects will eliminate an average of 290 million gallons of overflow volume per year (average of 2005–2007 normalized for rainfall), eliminating 100 tons of 5-day biochemical oxygen demand (BOD5) and almost 200 tons of solids annually.

Along with delivering water quality improvements from sewer overflow control, MSD participates in other community water quality improvement efforts. Sewer overflow control is essential to improving water quality, but overflow control alone is not enough to meet water quality standards. In light of this challenge, MSD will continue to leverage its role in supporting broader water quality improvement efforts in the community. The IOAP will be one of the key elements of MSD's participation in those water quality improvement efforts. In particular, the IOAP will be complementary to other wet weather and water quality programs managed by MSD and/or by other community partners. These complementary

efforts include, but are not limited to, the Mayor’s “Go Green Louisville” Initiative, the Partnership for a Green City, Metro Louisville’s Municipal Separate Storm Sewer System (MS4) discharge permit, and initiatives of Jefferson County Public Schools (JCPS), private developers, and other entities.¹

The specific ways in which MSD is collaborating with other entities on community water quality improvement initiatives include the following:

- **Partnership for a Green City:** MSD is actively working with Louisville Metro Government, JCPS, and the University of Louisville to improve water quality through the Partnership for a Green City. The Partnership has established a Stormwater Committee that will be identifying opportunities to improve water quality associated with planned capital projects.
- **Metro Government:** MSD is an active participant in the Mayor’s Go Green Louisville Initiative, which includes in its vision a commitment to focus on financially sustainable measures that improve air and water quality, land use, and energy efficiency. In coordination with this initiative, MSD is partnering with Louisville Metro Government on several green infrastructure demonstration projects in the IOAP.
- **MS4 Program:** MSD will coordinate IOAP implementation with the agencies that share implementation of the MS4 Program—including Metro Louisville government, small cities that handle their own drainage, and the Kentucky Department of Transportation. The MS4 program will draw upon the opportunities identified through the green infrastructure analysis conducted by MSD’s IOAP technical team and the ideas suggested by WWT members during the development of the IOAP. MSD further anticipates implementing demonstration projects, such as rain gardens in the separate sewer area, under the MS4 as part of a coordinated effort with the IOAP to test and evaluate green infrastructure approaches to wet weather management.

The IOAP—as part of MSD’s wet weather consent decree response—will be a federally enforceable action plan for sewer overflow abatement. Although many IOAP projects and programs will provide multiple benefits to the community, the scope of the IOAP is limited to commitments that directly relate to MSD programs and activities to address combined sewer overflow (CSO) and sanitary sewer overflow (SSO) issues. Other community water quality programs, which may be partly or completely out of MSD’s control, can provide synergistic benefits with the IOAP, but they do not fall under the same federal enforcement. These programs may, however, have different mechanisms for ensuring accountability (e.g., the State of Kentucky oversees the MS4 stormwater permit that MSD and several other agencies hold). As noted above, MSD anticipates coordinating IOAP implementation with the water quality improvement initiatives of Louisville Metro Government and other public and private entities, even though these broader initiatives may not explicitly be part of the IOAP.

Values-Based Performance Evaluation Framework Used to Develop the IOAP

MSD developed the IOAP using a values-based performance evaluation framework established by the Wet Weather Team. This analytic framework includes both a robust benefit-cost scoring methodology for evaluating and selecting project alternatives and a systematic process for evaluating the IOAP programmatically. The Wet Weather Team identified and agreed upon the following eleven community values that underpin the analysis and selection of alternatives for the IOAP.

¹ More information about these initiatives is available on the following websites: Go Green Louisville (www.louisvilleky.gov/GoGreen), Partnership for a Green City (www.partnershipforagreencity.org), and MS4 program (www.msdlouky.org/insidemsd/wwwq/ms4).

Project-Specific Values

- Asset protection
- Eco-friendly solutions
- Environmental enhancement
- Public health enhancement
- Regulatory performance

Programmatic Values

- Customer satisfaction
- Economic vitality
- Education
- Environmental justice and equity
- Financial equity
- Financial stewardship

Using the structured decision-making process as framed by the Wet Weather Team, MSD developed and evaluated overflow abatement control options for the IOAP based on managing risks to these community values. In particular, MSD's technical team analyzed each project alternative considered for the IOAP in terms of potential benefits and costs, where "benefits" are quantified based on the anticipated reduction in risks to the community values and "costs" reflect the total capital and operational costs of the alternative. The benefit-cost analysis influences the selection of site-specific abatement approaches or technologies, site-specific levels of protection (within the boundary conditions for CSOs and SSOs described below), and the relative priority of projects for implementation.

Several of the Wet Weather Team's community values relate to financial considerations, including the cost-effectiveness of individual solutions and the program as a whole (financial stewardship), the affordability of the program's total costs for the community (economic vitality), and how the costs are allocated among different segments of the population (financial equity). The Wet Weather Team has used the results of the values-based benefit-cost analysis of project alternatives to provide context to discussions about the appropriate level of investment in the IOAP.

The WWT's discussions about total program costs and the selection of projects for the IOAP have considered, as directed in EPA's CSO Control Policy, a "knee of the curve" analysis to determine where the increment of pollution reduction achieved in the receiving water diminishes compared to the increased costs. In addition to this analysis, the community's level of investment in the IOAP has been considered in the context of anticipated future requirements and other needs for MSD services, including stormwater compliance needs associated with Metro Louisville's MS4 permit and requirements to meet the forthcoming total maximum daily load (TMDL) allocations for Beargrass Creek. This consideration of other water quality investment needs is important since sewer overflow control alone will not be sufficient to meet water quality standards.

The technical team's analysis of the IOAP according to the WWT's programmatic values yielded the following conclusions.

- **Customer Satisfaction:** The IOAP ensures service continuity by eliminating several small wastewater treatment plants and pump stations and by incorporating redundant equipment and standby generators. Odor control guidelines have been consistently applied across all projects. Most storage basins proposed in the IOAP will be covered. Other storage basin and pump station improvement projects incorporate odor control equipment.
- **Economic Vitality:** MSD's current rates are near the national average. The anticipated annual rate increases of 5–6.5 percent are consistent with initial estimates of program costs, and they include allowances for future MSD programs as well as IOAP implementation. Even with these rate increases, MSD's rates are anticipated to remain at or near the national average, assuming other communities face similar inflation and regulatory pressures. These estimates are based on current data; many unknown factors (e.g., bond market, climate change, etc.) will also affect future rates.

- Education: Education is an integral and essential component of the IOAP. It supports a number of IOAP objectives, including promoting and sustaining participation in green infrastructure and source control efforts, and building a sense of personal responsibility and support for clean water initiatives.
- Environmental Justice and Equity: The site selection process followed uniform criteria across the county, with most solutions placed near overflow points and with no homes or private businesses permanently displaced. Furthermore, the configuration of facilities was based on a uniform application of written design criteria and odor control criteria. Other nuisance conditions will be minimized during the design and construction phases of projects.
- Financial Equity: MSD's rate structure is based on a cost-of-service model tempered by consideration of customers' ability to pay. The rate increases proposed to fund the IOAP and other MSD programs will continue to be based on the cost of service, but MSD will recommend to the Board that the existing low income, senior citizen discount program be expanded. The IOAP also proposes subsidies and incentives for green infrastructure and infiltration and inflow (I&I) control based on their business value for overflow abatement.
- Financial Stewardship: As described above, the IOAP is based upon a rigorous benefit-cost analysis that considered a broad range of technology alternatives and different levels of control that met or exceeded regulatory guidelines. The "knee of the curve" evaluations of IOAP projects demonstrated that the IOAP provides a high level of control, but does not exceed the point of diminishing returns.

Control Levels for Combined Sewer Overflows and Sanitary Sewer Overflows

Under the Clean Water Act, CSOs are permitted discharges in wet weather, as long as they are managed to avoid degradation of water quality in the receiving streams. EPA's CSO Control Policy² sets specific abatement targets for CSOs. To be permitted, wet-weather CSOs must be controlled so that either water quality standards are achieved or the permit-holder can show that the CSO discharges do not cause or contribute to exceedances of water quality standards. Based on EPA's CSO Control Policy, EPA may respond to MSD's proposed strategy for controlling wet weather CSO discharges indicating a need for a temporary variance or suspension of water quality standards during wet weather. Variances are temporary, not permanent, solutions to achieve compliance with the Clean Water Act. As stated in EPA's CSO Control Policy, variances are reviewable generally every three years.

CSO projects in the IOAP have the following levels of control:

- 6 projects result in no overflows in a typical year; these locations would only overflow as a result of very large storms.
- 1 project would result in four overflows per year in a typical year.
- 11 projects result in eight overflows per year in a typical year.

MSD's strategy for SSO control reflects the fact that SSOs, unlike wet-weather CSOs, are unauthorized discharges that must be "eliminated" under the Clean Water Act. In the IOAP, the values evaluation framework has been used to evaluate a range of site-specific design storms to establish the appropriate level of control of SSOs. Consistent with an analysis of sixty years of historical weather patterns for Jefferson County, the IOAP uses a three-hour "cloud burst" storm, with a statistically anticipated rainfall of 1.82 inches, as the minimum design storm considered. The Cities of Atlanta, Cincinnati, and Knoxville used similar design storms as the minimum protection level for SSO control. The approach of using the values evaluation framework to determine the SSO control level means that solutions to address certain SSOs have been designed to protect against larger storms (e.g., a 2.25-inch cloudburst storm

² EPA's Combined Sewer Overflow Control Policy is available at <http://cfpub1.epa.gov/npdes/cso/cpolicy.cfm>.

instead of a 1.82-inch cloudburst storm) because they yield a higher benefit-cost ratio in the analysis of project alternatives.

SSO projects in the IOAP have the following levels of control:

- 30 projects eliminate overflows up to a 1.82-inch cloudburst storm.
- 9 projects eliminate overflows up to a 2.25-inch cloudburst storm.
- 7 projects eliminate overflows up to a 2.60-inch cloudburst storm.

Components of MSD's Integrated Overflow Abatement Plan

Control options in the IOAP (the IOAP "toolkit") include source control (including green infrastructure and infiltration and inflow [I&I] reduction efforts), storage, conveyance/transport, treatment, and sewer separation. MSD's technical team has used the benefit-cost tool to compare the project alternatives and program elements considered for inclusion in the IOAP. The specific mix of control options for individual CSO or SSO locations in the IOAP is driven by the benefit-cost analysis of how the project alternatives affect the WWT's community values and site-specific considerations. Project alternatives are built around MSD's existing infrastructure (e.g., large diameter pipes and wastewater treatment plants) and draw on synergistic benefits from other MSD projects (e.g., the "Big Four" SSO projects). Furthermore, project budgets include an enhanced site restoration allowance to fund localized opportunities to reduce historical overflow impacts on aquatic and riparian environments near the sites of overflow abatement projects.

Driven by the values-based benefit-cost analysis, the IOAP reflects a balanced mix of green and gray solutions to prevent and control sewer overflows. "Green" solutions include options such as green roofs, rain gardens, rain barrels, porous pavement, and bioretention, while "gray" solutions include options such as storage, treatment, conveyance/transport, and sewer separation. As a guiding principle, MSD's IOAP has been developed based on front-end consideration of source control and green infrastructure. This means that more traditional "gray" infrastructure in the IOAP has been sized after considering both (1) the anticipated flow-reduction benefits of programmatic and site-specific green infrastructure solutions and (2) the anticipated effectiveness of other source control approaches, including reduction of private sources of I&I. Green solutions in the IOAP will be implemented as soon as possible, to allow data to be gathered on the flow reduction benefits that occur. Prior to the final design of supporting gray solutions, the actual flow reduction performance will be documented and compared against the estimated targets. The final sizing of the gray solutions will then be based on actual documented performance of green solutions, as well as any further green and source control investments justified by performance information. Green infrastructure investments are estimated to reduce the initial costs of CSO gray infrastructure projects by \$40 million; potential future savings could double or triple this figure.

As defined in the IOAP, the 19 gray infrastructure projects to control CSOs include:

- 4 sewer separation projects;
- 13 storage basin projects (This includes in-line and off-line storage; most in-line storage projects have a Real-Time Control component.);
- Replacement and expansion of the Nightingale Sanitary Pump Station; and
- 1 high-rate wet weather treatment project (screening, settling, and disinfection).

The 46 gray infrastructure projects to control SSOs in the IOAP include:

- 15 conveyance capacity upgrades and interceptor relief projects;
- 19 storage projects (in-line and off-line storage, many with pipe upgrades also);
- 1 sewer replacement project for Beechwood Village (one of the “Big 4 SSOs”); and
- 11 pump station and wastewater treatment plant upgrades, eliminations, or replacements. These projects include expanding the wet weather capacity of the Derek R. Guthrie Water Quality Treatment Center, elimination of 5 small wastewater treatment plants in the Prospect area, and potentially the elimination of the Jeffersontown Wastewater Treatment Plant.

The IOAP includes both an annual green infrastructure program and an initial set of green infrastructure demonstration projects. The green infrastructure program is front-end loaded to maximize benefits on downsizing future gray infrastructure. For example, the IOAP project schedule calls for a \$40 million investment in green infrastructure programs and projects during the first six years. Programmatic green infrastructure components in the IOAP include a downspout disconnect program, green roof construction subsidies or incentives, green roads and alleys partnership incentives, and pervious pavement sidewalks and parking. MSD has based the proposed incentives and subsidies on a “business case” analysis of the financial benefit of green infrastructure in terms of costs per gallon of flow removed from the combined sewer system. Through the anticipated green infrastructure partnership, incentive, and education programs, MSD's initial \$40 million investment in green infrastructure has the potential to leverage \$60 million more from other private and public funding sources, thereby yielding up to \$100 million in green infrastructure projects.

MSD plans to construct a series of new green infrastructure demonstration projects across Jefferson County. The proposed green infrastructure projects in the combined sewer area will be part of MSD's IOAP, while the proposed green infrastructure projects outside the combined sewer area will be a part of the community's MS4 stormwater program. These demonstration projects are designed to achieve three main objectives: (1) improve water quality and reduce sewer overflows, (2) provide data on green infrastructure effectiveness, and (3) educate community members about the value and benefits of green infrastructure. All green infrastructure demonstration projects in the IOAP will incorporate a monitoring component, so that the effectiveness of the projects can be tracked over time and regularly reported to regulators and the public. MSD will then use these monitoring results to guide future IOAP implementation, under the IOAP's adaptive management plan (further described below).

This vision currently reflects a minimum commitment to 18 green infrastructure demonstration projects in the IOAP. These proposed new green infrastructure demonstration projects (which are subject to partnership and regulatory approval) include:

- 6 bioswale and biofiltration projects (e.g., green parking lots and green streets);
- 4 rain gardens;
- 3 pervious concrete alleys; and
- 5 infiltration dry wells.

MSD plans to expand and enhance this proposed suite of demonstration projects in response to feedback from WWT members that the initial projects might not be sufficient to achieve the objective of educating the public and building support for green infrastructure. In particular, MSD will look to enhance the distribution of demonstration projects in Jefferson County (including considering green infrastructure projects in each Metro Council District) and the numbers of individual project types.

MSD's technical team has analyzed potential options to control private sources of I&I into the sanitary sewer system, including building laterals, downspouts, sump pumps, and foundation drains. This analysis

indicates that private-side I&I control is an essential part of the IOAP, and it will reduce the overall anticipated costs of overflow abatement. The technical team has analyzed options for adopting a requirement for inspections of private properties (e.g., during the property transfer process, when building permits are issued, when contractors install roof and gutter systems, when plumbers connect sump pumps, and/or at other times), along with providing some form of cost share and conducting an aggressive education campaign. MSD will work with Metro Government to support further development and adoption of an ordinance supporting these requirements. Although I&I reduction is particularly relevant to SSO control (since the sanitary sewer system was not designed to accept inflow), it may be useful to have similar requirements for the combined sewer system.

Public Information, Education, and Involvement Program

Education and public involvement are critical to the long-term implementation success of the IOAP. MSD uses the term “Project WIN” (Waterway Improvements Now) to describe its consent decree response activities to the public. The ongoing public information, education, and involvement program for Project WIN is designed to accomplish the following objectives:

1. Generate a sense of personal ownership and responsibility for clean water;
2. Promote and sustain participation in critical voluntary programs in the IOAP, including private-side I&I control and green infrastructure;
3. Promote public acceptance and support for the financial investments required to achieve consent decree and Clean Water Act compliance; and
4. Encourage support for other agency programs or legislation that supports overflow abatement efforts.

To achieve these objectives, the Project WIN education and public involvement program uses a wide range of communication media. In particular, the program includes the following elements:

- Public meetings and community events;
- Enhanced web portal for Project WIN;
- Speaker’s bureau and technical support;
- Print and electronic media (e.g., print advertisements, press releases, targeted brochures and pamphlets, reports, newsletters, billing inserts, public TV video, radio announcements, etc.);
- Recognition programs;
- Demonstration projects;
- Tours, demonstrations, and workshops;
- Enhanced school partnerships; and
- Annual effectiveness monitoring through direct mail and phone surveys.

These public involvement efforts are focused on several key audiences, including the general public, schools and children, and target groups such as property owners, project neighborhoods, builders, and restaurants. Focusing education efforts on children is important to ensure the long-term sustainability of voluntary programs in the IOAP. For the general public, MSD is using five key messages:

1. Value clean water.
2. Your investment is paying dividends, and our water is getting cleaner.
3. Protecting public health is critically important.
4. MSD and many community partners are working hard to improve water quality.

5. You can make a difference in improving water quality.

Post-Construction Compliance Monitoring

MSD's IOAP will use an adaptive management implementation approach based on monitoring and evaluation efforts. MSD's post-construction compliance monitoring and evaluation plan for the IOAP includes: (a) water quality monitoring, (b) sewer flow monitoring, (c) overflow events analysis, (d) gray and green infrastructure project performance monitoring, and (e) measurement of the effectiveness of source control and behavior-change efforts. MSD will prepare both required regulatory and public education reports from these data and adapt the CSO management and SSO elimination approaches based on the monitoring and evaluation results. Adjustments may include recalibrating models, "right-sizing" gray solutions, reevaluating the effectiveness of green solutions, and adjusting the types and characteristics of projects planned for later phases of implementation, including additional investments in green infrastructure and source control beyond those proposed in the initial program. At this time there is recognition that historical weather trends may not be as reliable as in the past due to potential changes in the climate. The IOAP's adaptive management approach will allow MSD to monitor evolving weather pattern developments and adjust its plans as more data become available.

Future Development Considerations

Solutions in the IOAP consider future development based on the community's long-term land-use plan, Cornerstone 2020.³ IOAP solutions are designed to accommodate the anticipated impacts of population growth and land-use development in that the solutions consider the effects of growth on connections to existing infrastructure that is upstream from existing overflow points. The IOAP is not, however, intended to provide capacity for all future growth predicted by Cornerstone 2020. Cases where the growth outlined in Cornerstone 2020 would logically be provided by new infrastructure, and not hydraulically dependent on or connected to the IOAP solution, have not been considered part of the IOAP. In summary, the solutions in the IOAP have been designed and sized to account for the impacts of anticipated growth on existing infrastructure, but the IOAP itself is not intended to build the capacity needed for growth.

MSD's Capacity, Management, Operations, and Maintenance (CMOM) Program, which is part of MSD's Consent Decree response but separate from the IOAP, includes standard operations and maintenance activities practices designed to, among other things, investigate capacity-constrained areas of the sewer system. The CMOM program also includes a System Capacity Assurance Program focused on providing capacity for current and future service needs.

Continued development in the community will require MSD to implement measures to reduce wet-weather flows. MSD will use a three-to-one offset of wet-weather flows from new development. This means that existing flows entering MSD's sanitary sewer systems will be reduced at a ratio of three gallons for every new gallon added. MSD's flow reduction efforts will be designed to correct deficiencies in the existing sewer system in the same geographic areas (sewersheds) of the system affected by the flows from new development. MSD will track flow reduction "credits" to ensure that the flow reductions occur in the appropriate geographic locations to offset the new flows. (This three-to-one offset approach is based on the City of Knoxville's Capacity Assurance Program.) The MSD Board will develop the fee structure for the offset plan.

³ For more information about the Cornerstone 2020 plan, see www.louisvilleky.gov/PlanningDesign/Cornerstone+2020.htm.

Funding Plan

The funding plan for the IOAP is designed to cover the 15-year period over which IOAP capital projects will be constructed to improve MSD's sewer infrastructure to meet the requirements of the consent decree. The IOAP funding plan is based on the following three principles:

- Rates and fees for the IOAP must pay MSD's operating costs and debt service.
- MSD's current bond rating (AA) should, at a minimum, be maintained.
- Rates and fees should allow for continued economic development in the community and a strong local economy.

These principles for the funding plan affect the amount of money MSD may borrow at any one time and the level of increases in rates and fees needed to fund capital and operating expenses for IOAP implementation.

MSD will fund the IOAP primarily through a combination of annual rate increases and bond issues or other loans. MSD also plans to pursue grants, line-item appropriations, and public/private partnerships (e.g., recapture agreements) to help pay for capital construction costs, as appropriate; however, the funding plan is not built around these funding sources since they are less certain. Using the estimate that the consent decree will cost \$843 million in capital expenditures, average bills for residential customers are expected to increase from 5 to 6.5 percent annually through 2021. This means that the average residential bill would increase from \$29.58 in 2008 to approximately \$63.12 by 2024 due to the consent decree capital construction expenses. Along with these rate increases, MSD expects to borrow approximately \$1.25 billion by 2024 based on the estimates of capital costs; this would increase MSD's debt service payments from \$94 million annually to \$163 million annually by 2025.⁴ A mixture of fixed and variable rate borrowings is anticipated. These rate increases and loans would be used to address both IOAP construction costs and other MSD capital needs for infrastructure renewal, replacement, and expansion.

Estimates of IOAP costs appear to be within community tolerance for rate increases; however, the rate increases could nevertheless be difficult for some segments of the population to afford, especially in the context of other expenses. For this reason, the Wet Weather Team has considered potential ways to provide discounts to customers that face financial hardship. In the IOAP funding plan, MSD proposes a few changes to MSD's existing rate structure for the Board to consider. These changes are designed to accomplish two objectives: (1) provide discounts for low-income populations and (2) ensure steady and predictable revenue flows overall. The specific rate structure changes currently under study and reflected in the IOAP funding plan include the following:

- Residential customer billing based on winter consumption;
- Potentially billing customers on a monthly basis (in coordination with the Louisville Water Company).
- Expansion of the senior citizens discount program.

As noted above, MSD will construct the capital projects in the IOAP over a 15-year period, in order to meet the regulatory requirements of the consent decree and achieve compliance with the Clean Water Act. Many of the elements of the IOAP—including the Project WIN education program, operations and maintenance of IOAP projects, and monitoring and evaluation programs—will also continue past the construction phase of the IOAP. MSD is committed to making sure that the IOAP programs and projects provide for long-term improvements in water quality in Louisville and Jefferson County.

⁴ This estimate assumes that interest rates are in the 5 to 6 percent range.

Project WIN

Waterway Improvements Now



1

CLEAN, GREEN, GROWING COMMUNITY



MSD's
Amended Consent Decree
Wet Weather Team Meeting #22
December 4, 2008



Amended Consent Decree Overview

- Released for public comment - December 1
- Comment period closes - December 31
- MSD has not been at liberty to share negotiation details
- Draft IOAP reflects Amended Consent Decree capital requirements



Background to the Complaint

- 2005 Consent Decree did not explicitly provide “injunctive relief” for all of MSD’s WWTPs
- Focuses on “on-going” violations since the date of entry of the 2005 Consent Decree (August 12, 2005)



Why A Consent Decree Amendment?

Six “Claims for Relief”

Jeffersontown WWTP “Blending” Resolution

- Failure to comply with bypass prohibition
- Failure to properly operate wastewater treatment systems

KPDES Permit Exceedances

- Failure to comply with effluent parameters (Fecal Coliform, TSS, CBOD)

Operational Record-Keeping and Reporting

- Failure to monitor/maintain records for WWTP flows
- Failure to report bypasses/blending
- Failure to comply with Section 308 information requests



Why A Consent Decree Amendment? “Claims for Relief”

Capital Program

Jeffersontown WWTP “Blending” Resolution

- Failure to comply with bypass prohibition
- Failure to properly operate wastewater treatment systems

KPDES Permit Exceedances

- Failure to comply with effluent parameters (Fecal Coliform, TSS, CBOD)



What Changed in the Amended Consent Decree?

Interim Milestones for Expansion, Enhancement and/or Elimination of several WWTP by Dec 2015

Jeffersontown WWTP Blending Elimination

- 3 options
- Decision by March 31, 2010
- New Connections limited to two conditions
 - 5 previously approved entities (Exhibit E)
 - New properties that both remove dry weather flow and 3:1 offset both WWTPs

5 Prospect WWTP Eliminations

- Flows routed to the Hite Creek WWTP
- Elimination plan by March 31, 2009

Upgrade several other WWTPs to improve performance

- Low-cost enhancements by December 31, 2011



Why A Consent Decree Amendment?

“Claims for Relief”

Operational Program

Operational Record-Keeping and Reporting

- Failure to monitor/maintain records for WWTP flows
- Failure to report bypasses/blending
- Failure to comply with Section 308 information requests



What Changed in the Amended Consent Decree?

Operational Enhancements at WWTPs to Improve Performance, Record-keeping, Reporting & Permit Compliance

1. Monitoring, Recording-Keeping and Reporting Program
 - Electronic capture, archiving and display of flow data
 - “Blending” occurrences reported to regulators and public
2. Jeffersontown WWTP Process Control Program
 - Wet Weather Standard Operating Procedure
 - Maximizing flow through secondary treatment prior to blending



What Changed in the Amended Consent Decree?

Operational Enhancements at WWTPs to Improve Performance,
Record-keeping, Reporting & Permit Compliance

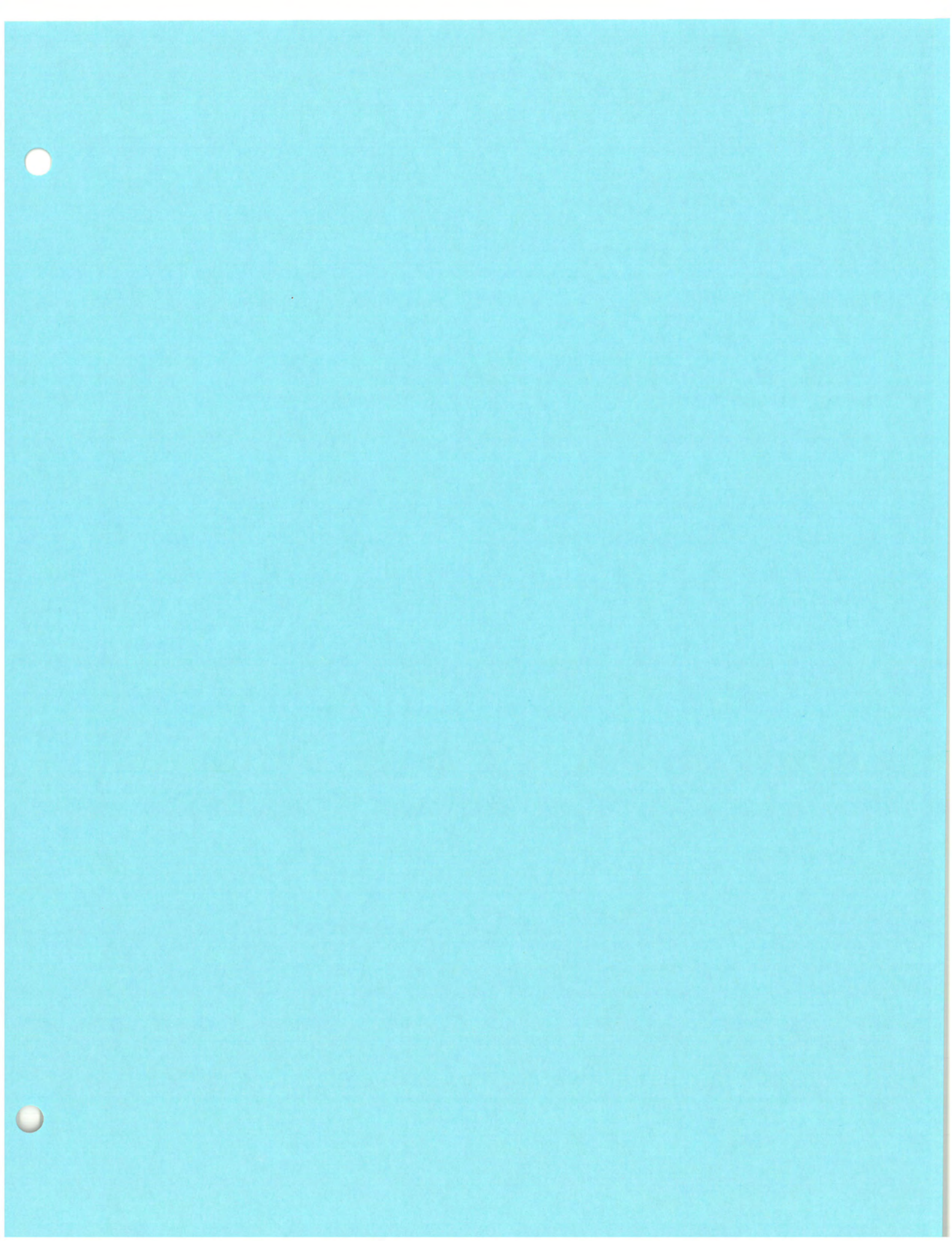
3. Comprehensive Performance Evaluations and Associated Correction Program
 - Operational enhancements by December 31, 2011
4. Interim Phosphorous Removal for Prospect Plants
 - Installation of chemical feed equipment by April 30, 2009
 - New effluent discharge limits effective October 31, 2010



Amended Consent Decree: Penalties

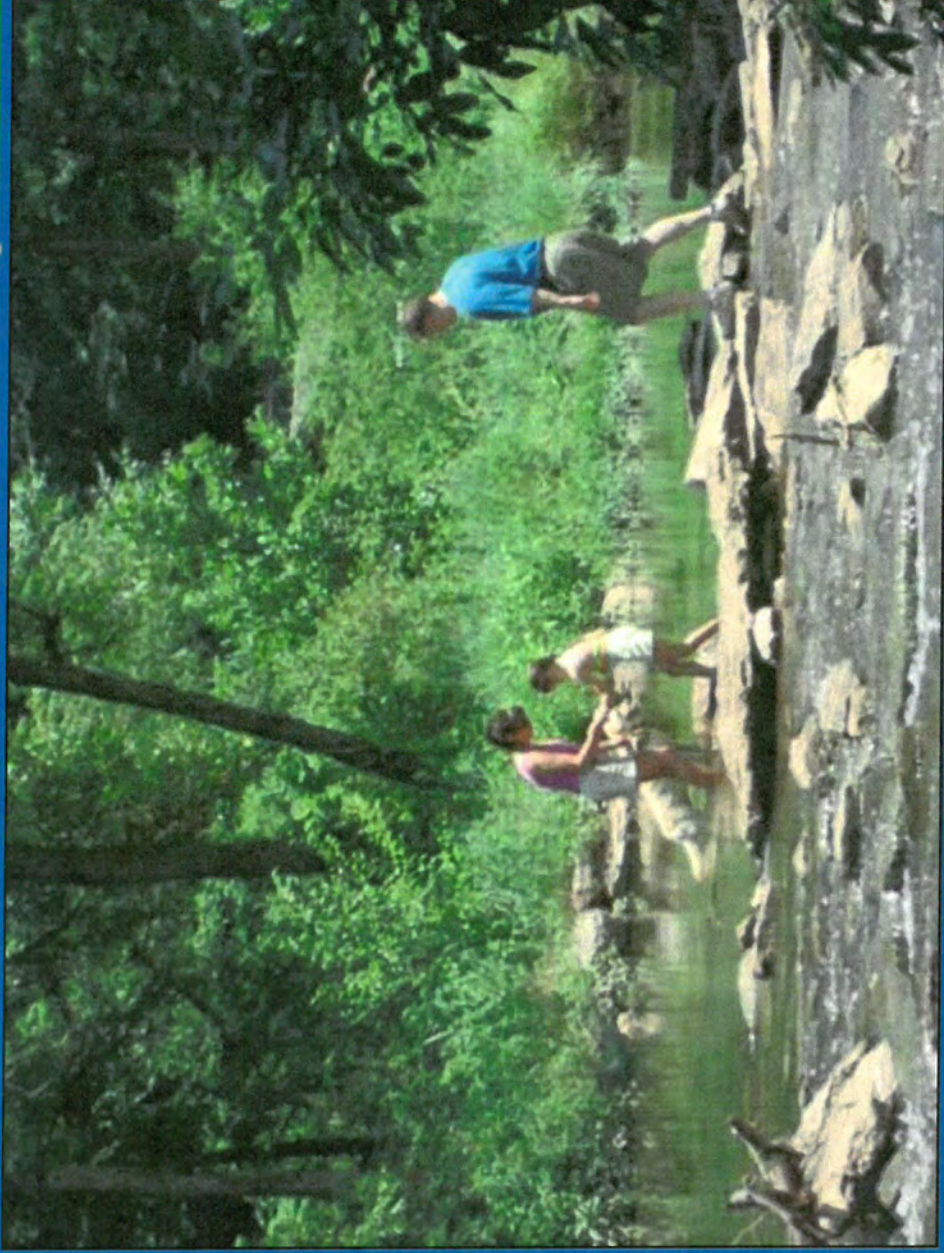
- \$230,000 Civil Penalty
- \$400,000 SEP focused on stream restoration





Project WIN

Public Comment Update



Comments Received To Date

- Seven comments received via email
- Five people spoke at the Public Hearing
- Two written comments (Clifton Heights Community Council and Floyd's Fork Environmental Association)



Comments Received To Date

- Potential elimination of Jeffersonstown WWTP
 - Eliminate blending immediately (1)
 - Don't send J-Town sewage to West County Plant (7)
 - Preference for Salt River WWTP solution (1)
 - Concern about diverting to Morris Forman WWTP increasing CSOs (1)
- Project-specific features desired or questions about projects (4)
- Concern that Karst geology is not considered in siting facilities (1)
- Concern about MSD spending and rates (1)
- Concern that all decisions are “fixed” by Amended CD (1)
- Desire for expenditures to provide local jobs (2)
- Desire to use Project Labor Agreements on large projects (2)

Several comments related to issues outside the scope of the IOAP



Several Comments Not Related to Overflow Abatement

- Concern that MSD is not considering groundwater in new development stormwater calculations
- Concern that unedited version of video tape of public meeting has not been provided as requested
- Removal of package plants not associated with overflow abatement
- Sampling waterways and plant effluents for hormones, antibiotics, and other emerging contaminants of concern



Many Alternatives Considered to Eliminate J-Town Blending

- Upgrade and expand on existing site
- Eliminate and divert flows to Floyd's Fork WWTP
- Eliminate and divert flows to Cedar Creek WWTP
- Eliminate and divert dry weather flow to Morris Forman WWTP, and we weather flow to West County WWTP (now named DRGWQTC)
- Eliminate and divert to new Salt River WWTP owned and operated by new regional sewer authority



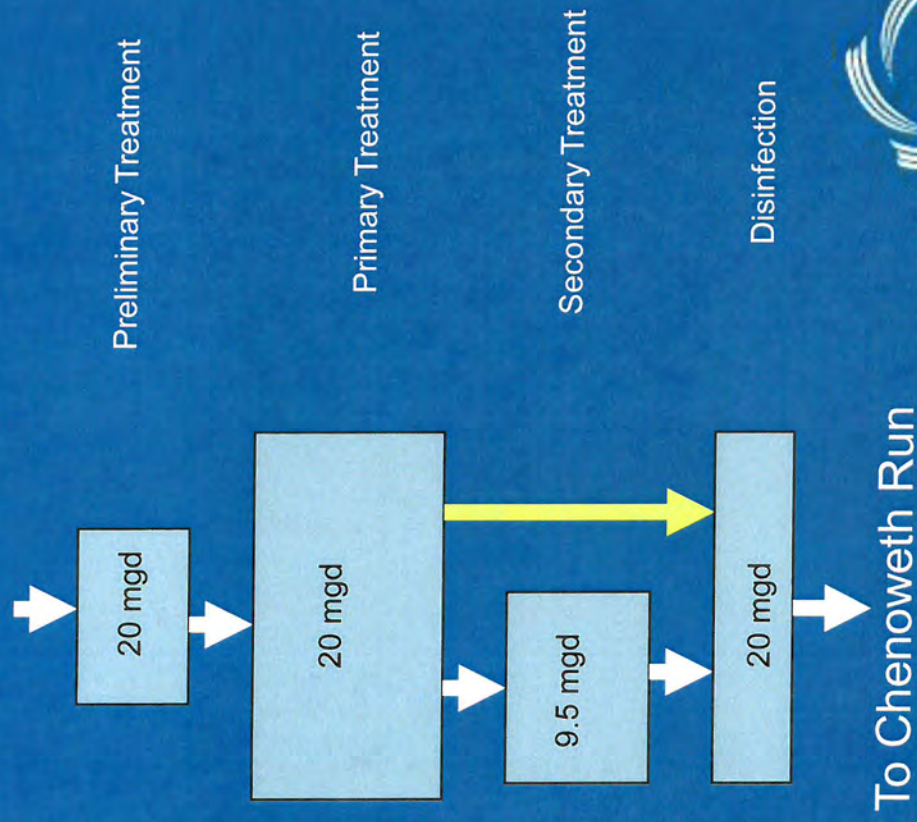
Three Alternatives Remain Viable

- Upgrade and expand on current site
 - Requires KDEP waste load allocation decision
 - Cost-effectiveness depends on effluent limits required
- Eliminate and divert to new regional WWTP
 - Requires action of Legislature to form new regional sewer district
 - If new district not approved this session, likely cannot meet 2015 elimination milestone
- Eliminate and divert to Morris Forman and West County WWTPs
 - Can be implemented in time available
 - Does not require any action by State government
 - Currently in the IOAP pending decisions on other alternatives



Elimination or Expansion of Jeffersontown WWTP Required to Eliminate “Blending”

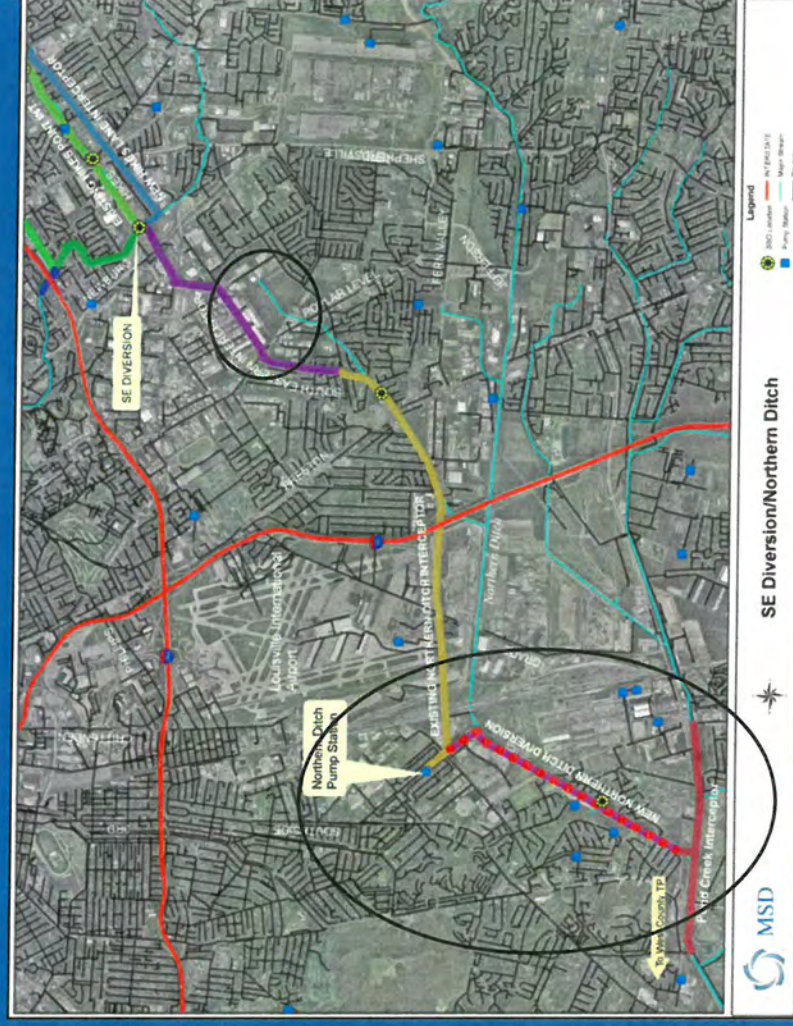
- “Blending” discharges partially treated effluent to Chenoweth Run, an intermittent tributary of Floyd’s Fork
- Decision to expand or eliminate affects sizing of intermediate flow equalization basin, does not affect plans for West County WWTP
- Final decision not required until March 31, 2010



CLEAN, GREEN, GROWING COMMUNITY

SSO Elimination Increases Wet Weather Flows

- Increased capture in Upper Middle Fork and Hike's Point – currently overflows to Beargrass Creek
- Dry weather sanitary sewage routed to Morris Forman WWTP, discharges to Ohio River
- Wet weather diluted flows routed to West County WWTP, discharges to Ohio River



Northern Ditch Diversion is required regardless of Jeffersonstown decision

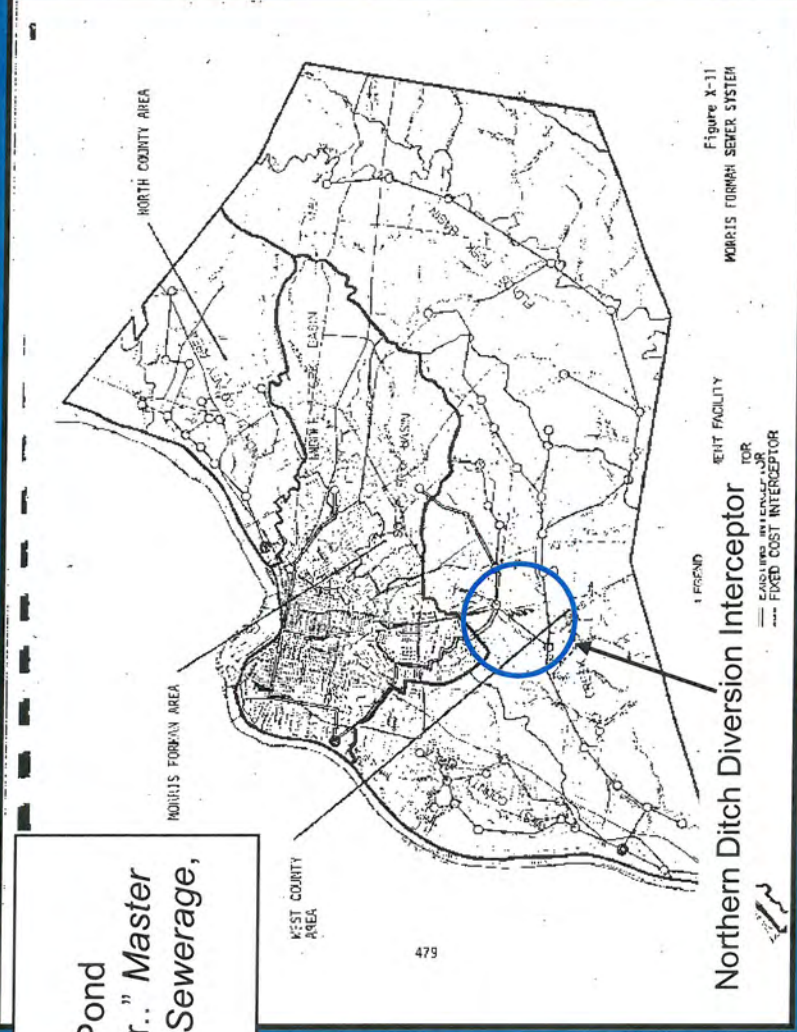


Northern Ditch Diversion Interceptor

Provides Flexibility First Proposed in 1964

"... diverting all of the flow from the Northern Ditch Interceptor into the Pond Creek Interceptor through a relief sewer." *Master Plan Report Jefferson County Sanitary Sewerage, 1964*

"The proposed West County STP will serve West County, Pond Creek, Floyd's Fork, and parts of the existing Morris Forman sanitary sewer system." Existing sewer systems served include Morris Forman Areas 3 and 4, Jeffersontown, Okolona, Shively, and 54 package treatment plants. *Water Quality Management Plan, 1974*



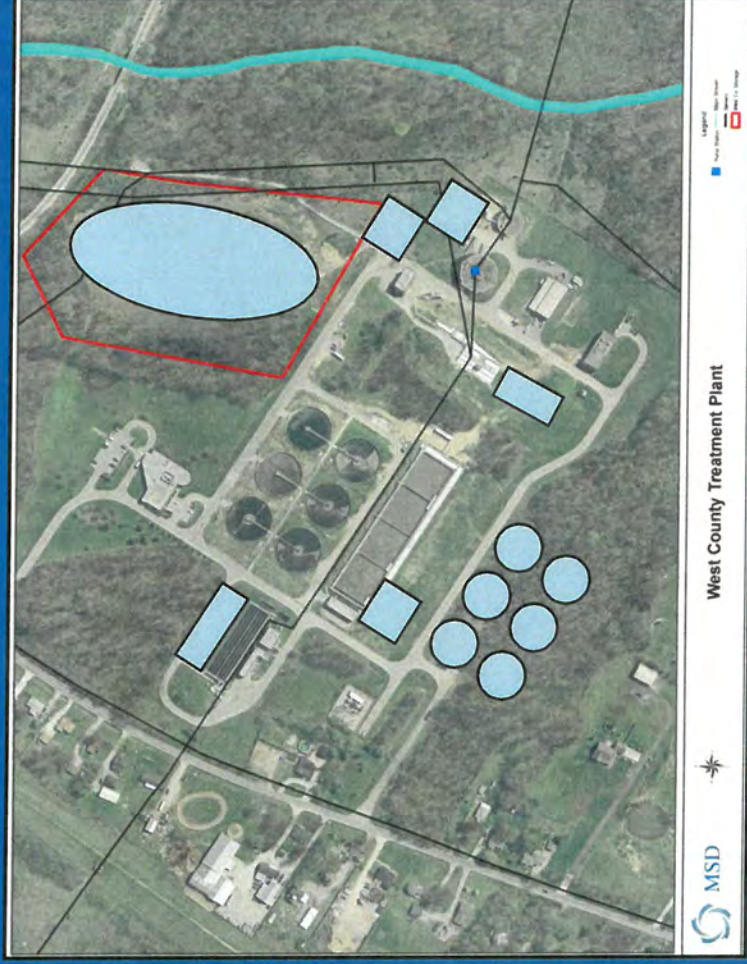
Source: *Water Quality Management Plan, Kentuckiana*
Regional Planning and Development Agency
September 1974



Wet Weather Treatment at West County WWTP (Derek R Guthrie Water Quality Treatment Center)

- Current capacity 30 mgd average, 96 mgd peak wet weather
- Expanded capacity 30 mgd average, 200 mgd peak wet weather
- Wet weather flows do not impact dry weather capacity for continued economic growth in SW Jefferson County
- Layout follows original planning for 60 mgd average, 200 mgd peak wet weather
- Flow equalization basin for short term capture of major storm flows

Expansion Addresses Wet Weather Flows Only



Comments To Date Do Not Affect IOAP Vision

- Jeffersontown WWTP decision still not made
- Jeffersontown WWTP IOAP project will not negatively impact SW Jefferson County
- Site restoration suggestions viewed as enhancements



Path Forward

- Receipt of public comments close Dec. 5 at 5:00 PM
- E-mail to Stakeholders describing comments received Friday, impact (if any) on IOAP Vision
- Responsiveness Summary and changes to IOAP text and project fact sheets by December 15
- Request Board approval December 15
- Submit to KDEP and EPA by December 31, 2008
- Presentation/discussion of IOAP to KDEP/EPA reviewers in January, 2009
- Review comments due March 1, 2009
- Potential Stakeholder review of responses April, 2009
- Resubmittal due May 1, 2009

