



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
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NOV 25 2008

REPLY TO THE ATTENTION OF:

WC-15J

Hamilton County Board of County Commissioners
County Administration Building
138 East Court Street, Suite 603
Cincinnati, Ohio 45202

Ms. Deborah Wyler Allison
Assistant City Solicitor for the City of Cincinnati
801 Plum Street, Suite 214
Cincinnati, Ohio 45202

Mr. James A. Parrot
Metropolitan Sewer District of Greater Cincinnati
1600 Gest Street
Cincinnati, Ohio 45204

Re: 2008 Revised Wet Weather Improvement Program Plan

Dear Commissioners, Ms. Allison and Mr. Parrott:

In June 2006, the Board of County Commissioners of Hamilton County and the City of Cincinnati (Defendants) submitted a Wet Weather Improvement Plan (WWIP) to the U.S. Environmental Protection Agency, Ohio Environmental Protection Agency, and Ohio River Valley Water Sanitation Commission (the Regulators). Defendants intended for the WWIP to fulfill the Capacity Assurance Program Plan (CAPP) and Long Term Control Plan Update requirements of the 2002 Interim Partial Consent Decree of Sanitary Sewer Overflow (SSO Decree) and the 2004 Consent Decree on Combined Sewer Overflows, Wastewater Treatment Plants and Implementation of Capacity Assurance Program Plan for Sanitary Sewer Overflows (Global Decree). On September 16, 2008, Defendants proposed significant changes to the WWIP, in a document entitled 2008 Revised Wet Weather Improvement Program Detailed Conceptual Outline Report (Revised WWIP).

The Regulators have completed their review of the Revised WWIP. In accordance with Subparagraph VII.A.3 of the Global Consent Decree and Subparagraph VII.E.8 of the SSO Decree, the Regulators decline to approve the Revised WWIP, and provide the following written comments. This letter is being sent on behalf of all three Regulators.

I. Consent Decree Requirements

The two consent decrees include a number of requirements pertaining to the Long Term Control Plan Update and CAPP. The following is a summary of requirements that are relevant to the Regulators' decision to decline to approve the Revised WWIP.

A. LTCP Update Requirements

Subparagraph VII.A.1 of the Global Decree requires that the Long Term Control Plan Update include remedial measures . . . with the goals of insuring that . . . Defendants' CSOs comply with the requirements of the Clean Water Act, U.S. EPA's CSO Policy, Chapter 6111 of the Ohio Revised Code and the rules promulgated thereunder, the Compact and the pollution control standard promulgated thereunder, and Defendants' Current Permits.

Subparagraph VII.A.2 of the Global Decree requires that the Long Term Control Plan Update include a schedule that is as expeditious as practicable for design, construction, and utilization of the remedial measures specified in the Long Term Control Plan Update and shall contain a deadline for Substantial Completion of Construction of all remedial measures that is as expeditious as practicable. Except as provided in Section IX (Completion of Construction), the date for Substantial Completion of Construction of all construction under the Long Term Control Plan Update shall be no later than February 28, 2022.

Paragraph IX.B of the Global Decree provides that Defendants may submit as part of the proposed Long Term Control Plan Update a schedule that exceeds 2022 if they demonstrate that the expected capital costs (in 2006 dollars) of the remedial measures in the Long Term Control Plan Update and the CAPP are expected to exceed \$1.5 billion. If such capital costs are expected to exceed \$1.5 billion, then the deadline for completion of all remedial measures specified in the Long Term Control Plan Update and the CAPP must be specified in the Plan(s) and must still be as expeditious as practicable, but may be later than February 28, 2022, if it is not practicable to complete the CAPP and Long Term Control Plan Update remedial measures by that date.

Subparagraph VII.A.2 of the Global Decree also requires that the schedule be "developed in accordance with Paragraph II.F of the Long Term Control Plan Update Work Plan." Paragraph II.F of the Long Term Control Plan Update Work Plan, in turn, specifies that, among other things, the schedule will be based on consideration of the following: water quality, human health, capacity-related "water in basement" issues, pollutant loadings, volume of discharge, community priorities, sensitive areas, U.S. EPA's February 1997 "CSO-Guidance for Financial Capability Assessment and Schedule Development" (EPA 832-B-95-06), and/or U.S. EPA's 1995 Interim Economic Guidance for Water Quality Standards: Workbook (EPA 823-B-95-002); and reducing inefficiencies in the event that future contingencies do not occur as anticipated.

B. CAPP Requirements

Subparagraph VII.E.1 of the SSO Decree requires that the CAPP:

Identify additional feasible remedial measures that have the goal of eliminating all capacity-related SSOs and/or that are necessary to insure that there is adequate capacity in the [Sanitary Sewer System] under current and projected future conditions so that there will be no capacity-related SSOs under projected future conditions.

Subparagraph VII.E.5 of the SSO Decree requires that the CAPP “provide a schedule that is as expeditious as practicable” for implementing the identified remedial measures.

II. Defendants’ WWIP

A. The June 2006 WWIP

The Regulators would have declined to approve the June 2006 WWIP because it did not comply with the requirements of the Global Consent Decree in that it did not include remedial measures “with the goals of insuring that . . . Defendants’ CSOs comply with the requirements of the Clean Water Act, U.S. EPA’s CSO Policy, Chapter 6111 of the Ohio Revised Code and the rules promulgated thereunder, the Compact and the pollution control standards promulgated thereunder, and Defendants’ Current Permits.” In particular, the June 2006 WWIP did little to address billions of gallons of untreated CSOs into the Lower Mill Creek and the Ohio River, which would contain hundreds of thousands or millions of counts of fecal coliform and e coli bacteria per 100 milliliters. Such discharges would have violated the General Effluent Limitation in Part III.2.F of Defendants’ Current Permit by causing, or worsening the extent of, nonattainment of the designated recreational uses and bacteria criteria specified in Ohio’s water quality standards for the Lower Mill Creek and Ohio River. Moreover, the June 2006 WWIP included questionable treatment technologies to disinfect billions of gallons of additional CSO discharges, which would likely result in such discharges containing fecal coliform and e coli levels in amounts that also would have violated Defendants’ Current Permit. The cost of the measures in the June 2006 WWIP was \$1.99 billion.

B. September 16, 2008 Revised WWIP

As noted above, Defendants submitted a Revised WWIP on September 16, 2008, in the form of a Detailed Conceptual Outline Report, setting forth \$3.29 billion in projects. Exhibit 2.2 in Defendants’ Revised WWIP contains approximately 565 specific remedial measure projects for addressing Defendants’ CSOs and SSOs. There are several significant differences between the Revised WWIP remedial measures in Exhibit 2.2 and those that had been included in the June 2006 WWIP.

First, Defendants included a 5.7 mile, 30-foot diameter, 160 million gallon Lower Mill Creek Tunnel in Exhibit 2.2 to the Revised WWIP that would reduce billions of gallons of CSOs into the Lower Mill Creek and Ohio River that were not addressed in the June 2006 WWIP.

Second, in Exhibit 2.2, Defendants replaced the treatment technologies that had been included in the June 2006 WWIP with increased storage capacity and “Enhanced High Rate Treatment” facilities that Defendants have demonstrated will likely be able to achieve sufficient solids removal (70% to 80%) to ensure that Defendants’ CSOs are adequately disinfected to comply with applicable requirements.¹

Defendants grouped the remedial measures in Exhibit 2.2 of the Revised WWIP into approximately fifty-nine “bundles,” consisting of a number of specific projects in each bundle. Defendants implemented a detailed scoring process to prioritize projects. With the significant exception of Lower Mill Creek sewershed bundles, Defendants based their schedule for constructing the remedial measures in Exhibit 2.2 exclusively on that scoring process, with the bundles having the highest scores being placed at the front of the schedule, and those with lower scores being placed at the end of the schedule. Although many of the Lower Mill Creek bundles scored quite high under Defendants’ prioritization scoring process, Defendants moved those projects to the back of the priority list, and proposed a seven-to-ten year period to evaluate and implement green infrastructure and policies as a means of significantly reducing the costs of addressing the extreme case Lower Mill Creek Tunnel.

Further, Defendants did not include a fixed schedule for constructing the remedial measure projects in Exhibit 2.2. Instead, they proposed constructing the bundles in the order of their prioritization, until one of two types of economic “firewall” triggers is met, at which time they would stop proceeding with construction of future bundle projects until the firewall conditions no longer exist.

¹ The Revised WWIP also contained a proposal to implement a substantial green infrastructure program.

III. The Regulators' Comments on the Revised WWIP

The specific remedial measure projects set forth in Exhibit 2.2 of the Revised WWIP are approvable means of achieving the LTCP Update requirements specified in Subparagraph VII.A.1 of the Global Decree and the CAPP requirements specified in Subparagraph VII.E.1 of the SSO Decree. However, as described more fully below, the Regulators decline to approve the Revised WWIP.

A. The Revised WWIP Does Not Contain a Schedule That is “As Expeditious as Practicable” for Implementing the Measures

As described above, the Global Decree requires that the WWIP contain a schedule that is “as expeditious as practicable,” and that it achieve substantial completion of construction by no later than February 28, 2022, unless the expected costs of the capital measures are expected to exceed \$1.5 billion. The Decree’s approach is consistent with U.S. EPA’s CSO Policy (to which consent decrees are required to conform, 33 U.S.C. § 1342(q)(1)). The CSO Policy uses the phrase “as soon as practicable” when referring to the time frame for coming into compliance with CSO standards. *See, e.g.*, 59 Fed. Reg. 18,690, 18,691, 18,696. The CSO Policy provides further guidance on how this phrase should be interpreted and how schedules should be devised. Of particular note is the fact that the concept of “practicability” goes beyond mere engineering practicability. The CSO Policy specifically “recognizes that financial considerations are a major factor affecting the implementation of CSO controls. . . [and] . . . allows consideration of a permittee’s financial capability in connection with the long-term CSO control planning effort . . . and negotiation of enforceable schedules.” 59 Fed. Reg. at 18,690. Thus, the CSO Policy stresses that LTCP schedules must “require the earliest practicable compliance date considering physical and financial capability. 59 Fed. Reg. at 18,689 (emphases added).

Accordingly, as noted above, the Global Decree specifically requires that, among other things, the schedule be “based on consideration of” U.S. EPA’s CSO Guidance for Financial Capability Assessment and Schedule Development, EPA 832-B-97-004, Mar. 1997 (“Financial Capability Guidance” or “Guidance”). The Guidance describes a process for evaluating parameters that measure a [community’s] financial capability to implement CSO controls. The process reflects the experience of EPA in the Water Quality Standards (WQS) program, Construction Grants program, State Revolving Fund (SRF) program, and water enforcement program.

Id. at 9.

The Guidance consists of a two-step approach. First, the Guidance sets forth a specific methodology for deriving a “Residential Indicator,” which represents the community’s “average cost per household (CPH) for wastewater treatment and CSO controls as a percentage of local median household income.” Id. at 10. The Guidance explains that:

To assess the financial impact CSO controls may have on the [community’s] residential users, the Residential Indicator is compared to the financial impact

ranges that reflect EPA's previous experience with water pollution control programs. . . .

...

When the Residential Indicator is less than 1.0 percent, between 1.0 percent and 2.0 percent, and greater than 2.0 percent, the financial impact on residential users to implement the CSO controls will be characterized as "low," "mid-range," and "high" respectively.

Id. at 19.

The second step under the Guidance "examines the debt, socioeconomic, and financial conditions of a permittee." Id. at 10. Unless those conditions are especially strong for a particular community, CSO controls that result in a Residential Indicator value that is greater than 2% are viewed under the Guidance as imposing a "High Burden" on the community's ratepayers. Id. at 41. The Guidance recognizes that scheduling flexibility may be warranted in "High Burden" situations. See id. at 48-51.

Here, the Revised WWIP is estimated to cost \$3.29 billion, clearly exceeding the \$1.5 billion threshold set forth in the Decree, and the terms of the Global Decree entitle Defendants to seek a schedule that will extend past the 2022 deadline set forth in the Final Decree. This amount is also substantially in excess of the amount (approximately \$2 billion) that would result in a Residential Indicator of 2% of median household income when calculated in accordance with the Financial Capability Guidance. Consequently, the Regulators agree that a schedule beyond the 2022 date specified in the Global Decree is warranted.² However, the Regulators cannot approve the approach proposed by Defendants because it is neither technically nor financially "as expeditious as practicable."

1. The Revised WWIP Schedule is Not Technically "As Expeditious as Practicable"

² The Regulators disagree with Sierra Club's comment that there is no reason that the \$3.29 billion program cannot be implemented within 10 years. Sierra Club quotes economist and newspaper columnist Paul Krugman, and newspaper columnist David Brooks, as saying that major infrastructure projects would provide jobs and act as an economic stimulus for communities, and thus that "[t]he WWIP is an economic stimulus, not an economic detriment to the community." However, these writers were suggesting that the federal government should provide money for these major infrastructure programs as a means of supporting local economies and creating jobs, similar to the WPA projects of the 1930s. See Brooks, David, "A National Mobility Project," Nov. 1, 2008; Krugman, Paul, "Let's Get Fiscal," The New York Times, Oct. 16, 2008.

Although the Revised WWIP does not include a fixed schedule, Defendants claim that thirty years “is the shortest feasible time period that this massive program can be performed due to the Revised WWIP’s commitment to evaluate green infrastructure and policies as a means of significantly reducing the costs of addressing the extreme case Lower Mill Creek Tunnel and considering contractors availability and other implementation issues.” However, Defendants have not substantiated their claim that a minimum schedule of thirty years is warranted due to “contractors availability and other implementation issues.”³ Once those unsubstantiated claims are stripped away, Defendants’ sole non-financial basis for a greater-than-30-year-schedule for implementing the measures in Exhibit 2.2 is that Defendants wish to have a seven-to-ten-year time period to implement and study green infrastructure measures “to evaluate the potential to eliminate or reduce the size and/or costs of an extreme case Lower Mill Creek tunnel.” For a variety of reasons, the Regulators do not agree that this is a sufficient technical basis for such a lengthy schedule.

First, despite more than eighteen months of intensive work on evaluating green infrastructure, Defendants have been unable to make a credible case that there is a reasonable possibility that green measures could eliminate or reduce the size of the Lower Mill Creek tunnel.⁴ To the contrary, the data that Defendants have generated to date actually demonstrates that green measures are unlikely to make a meaningful difference in the size of a Lower Mill Creek tunnel. Specifically, Defendants prepared a “Green Infrastructure Demonstration Project and Pilot Program White Paper” that includes estimates of the types of benefits that could be realized from an aggressive green infrastructure in the Lower Mill Creek area. This document states that “[a]n initial analysis of the Lower Mill Creek sewershed, using conservative implementation rates of approximately 1 - 20 percent (based on control type), which are expected during the early years of the program, shows that implementation of green infrastructure within the Lower Mill Creek basin could remove over 660 million gallons of storm water runoff annually from the combined sewer system.”

Although it is clear that substantial volumes of water can be kept out of the system through an ambitious green infrastructure program, Defendants have not presented a quantitative analysis that shows that the flow reductions that can be achieved will result in a smaller tunnel size. Given the high peak flows associated with design storms,

³ The issue of contractor availability is generally a fairly short one. It takes the construction industry and individual contractors only a few years to react to increased demand, and the time needed for contractors to “gear up” can be addressed by simply ramping up the project count in an appropriate way.

⁴ Unlike with the Lower Mill Creek sewershed, Defendants have adequately demonstrated that green measures have a reasonable possibility of impacting the need for and size of various CSO and SSO control projects in the Upper Mill Creek, Little Miami River and Muddy Creek sewersheds.

keeping 660 million gallons of stormwater out of the system on an annual basis, would not substantively affect the diameter of the tunnel.

Approximately 4 billion gallons per year overflow from the CSOs to be controlled by the Lower Mill Creek Tunnel. The 660 million gallons per year of stormwater that could be reduced represents a 16% reduction in total annual volume, but the green infrastructure measures would result in a smaller percentage reduction in terms of the peak flow volumes associated with the larger storm events. Consequently, the Regulators do not believe that a schedule of thirty years or more to allow Defendants an opportunity “to evaluate green infrastructure and policies as a means of significantly reducing the costs of addressing the extreme case Lower Mill Creek tunnel” would be “as expeditious as practicable.”

Even assuming that a seven-to-ten-year period of time was justified to allow Defendants an opportunity to evaluate how green infrastructure might impact the size of a Lower Mill Creek tunnel, Defendants stated in the Revised WWIP that the tunnel could be constructed in less than thirteen years, once the seven-to-ten-year study period has been completed. Thus, even if a seven-to-ten year study period was justified, there does not appear to be any technical basis for a thirty-year or greater schedule for completion of the measures specified in Exhibit 2.2.

Ultimately, the length of the schedule from an engineering and technical perspective will largely be a function of the lengthiest project (in this case, the Lower Mill Creek tunnel). This is because the WWIP involves many physically dispersed, unrelated control projects. This means that, from a construction standpoint, most can proceed through design and construction independently of one another. Today’s contract managers have access to powerful construction management tools to facilitate the tracking of hundreds of tasks simultaneously. Appropriate use of such tools, and the provision of adequate project management staff and resources allows for the necessary effective management of multiple simultaneous individual projects.

2. The “Firewall” Approach in the Revised WWIP is Not an Appropriate Means of Ensuring That the Remedial Measures are Implemented “As Expeditiously as Practicable”

As noted above, consistent with U.S. EPA’s CSO Policy, the Regulators and the Global Decree recognize that economics and financial capability should be considered in establishing a schedule that is “as expeditious as practicable.” Specifically, the Global Decree requires that, among other things, the schedule be “based on consideration of” the Financial Capability Guidance.

As was also noted above, Defendants proposed in the Revised WWIP to address financial capability in the scheduling context by establishing two distinct types of “financial firewalls.” Defendants have proposed that they would spend money working on the various bundles of projects set forth in Exhibit 2.2, in order of priority, as well as spend money on a variety of other programs pertaining to operation, maintenance and

management of their sewer system and wastewater treatment plants, until one of the financial firewalls is met. At that time, Defendants would continue to fund and implement their ongoing programs, but would stop moving forward with implementation of any additional bundle projects until the conditions which gave rise to the financial firewall being triggered no longer exist.

Defendants have termed their first type of firewall a “Financial/Solvency Firewall,” which would be triggered if Defendants fail to maintain certain debt-service ratios and/or fail to maintain a minimum surplus fund balance of \$50 million. Defendants’ second firewall, called the “Median Household Income (MHI) Percentage Firewall,” purports to track the Financial Capability Guidance, by comparing a “sewer service rate” that Defendants would derive to the median household income (MHI) for MSD’s service population. This second firewall would be triggered if the “sewer service rate” exceeds 1.6% of the MHI for Defendant’s service population.

The Regulators agree that, in a case such as this one, where the projected cost of remedial measures necessary for a community to achieve compliance with Clean Water Act requirements results in a Residential Indicator amount that would be substantially greater than the 2% threshold identified in the Financial Capability Guidance, it may be appropriate to create a mechanism to allow for future schedule adjustments to account for financial considerations. However, consistent with Subparagraph VII.A.2 of the Global Decree and Paragraph II.F of the Long Term Control Plan Update Workplan that is attached to the Global Decree, any such mechanism in this case must still ensure that the remedial measures are implemented “as expeditiously as practicable” and be based upon “consideration of” the Financial Capability Guidance. As explained below, the Regulators are not convinced at this point that either of Defendants’ proposed “firewalls” meets these consent decree criteria. Instead, the Regulators believe that a different mechanism, which is described in Section IV.A of this letter, should be utilized.

As an initial matter, although Defendants’ Median Household Income (MHI) Percentage Firewall borrows bits and pieces from the Financial Capability Guidance, it deviates substantially from the Guidance in how it derives the number to be used in assessing costs as a percentage of median household income. Specifically, under the Guidance, the costs are derived from the Defendants’ most recent audited financial statements, Census data and Defendants’ billing records, as well as estimates of the expected project costs in current year dollars. As a result, there is relatively little need to estimate future trends in costs or demographics. The Guidance’s approach, therefore, allows for an assessment of a community’s overall financial capability to fund needed sewer infrastructure improvements, without regard to local decisions as to how the particular community may choose to generate revenues.

Defendants’ approach, on the other hand, is a rate-based approach, that would determine costs using an undefined rate-projection methodology, whose inputs would largely be dictated by how Defendants may choose to generate revenue and establish their rates. As such, Defendants’ approach is not as well suited as the Financial Capability Guidance is to assess overall financial capability. Moreover, Defendants have not demonstrated how

1.6% of MHI calculated in accordance with their rate-based approach correlates to financial capability.⁵ In any event, the Regulators believe that a schedule adjustment mechanism that more closely tracks the Financial Capability Guidance would be more in keeping with the Global Consent Decree requirement that the schedule be “based on consideration of” the Financial Capability Guidance.⁶

The Regulators also believe that, to satisfy the “as expeditious as practicable” standard, it is important that any schedule adjustment mechanism not be something that will lead to endless re-negotiations, as such negotiations will almost inevitably divert attention and resources away from efforts to address Defendants’ CSO and SSO problems. To achieve this objective, a schedule adjustment mechanism should be relatively straightforward and easy to audit; should not be based on complicated formulas, methods or data inputs that are largely within the control of one party; should make the most use possible of actual, publicly available data; and should minimize the issues associated with prognostication. Defendants’ Median Household Income (MHI) Percentage Firewall does not achieve these criteria as well as an approach that would be modeled more closely on the Financial Capability Guidance.

Additionally, it is impossible to predict the economic conditions that may exist in the future and how those conditions may impact a community’s financial capability to implement remedial measures. Consequently, the mechanism should require that the determination as to whether schedule adjustments are necessary and, if so, what adjustments are necessary to satisfy the “as expeditious as practicable” standard, be based on the conditions that exist at the future time in question. Both of Defendants’ proposed economic firewalls fail this test, as they both would entitle Defendants to stop work on future bundle projects if either of the firewalls is triggered, without regard to whether the unique financial circumstances that are in existence at that time actually warrant such delay.

Another problem with Defendants’ Financial/Solvency Firewall is that Defendants’ have not made a compelling argument as to why it is needed. As of 2008, the Surplus Fund Balance is at \$202 million. Defendants can determine when to apply these funds, smoothing the burden on ratepayers. Further, ongoing maintenance of the Surplus Fund

⁵ It is also worth noting that the Financial Capability Guidance defines “High Financial Impact” using a figure of 2% of median household based upon an assessment of the entire service population, rather than the 1.6% figure that Defendants have proposed using.

⁶ The Sierra Club raised similar concerns about Defendants’ approaches to addressing affordability in Section X of Sierra Club’s May 15, 2006, comments on Defendants’ April 17, 2006, draft WWIP. Sierra Club’s comments regarding financial capability closely tracked EPA’s Financial Capability Guidance. The Regulators found those comments helpful in evaluating Defendants’ “Firewall” approach in the Revised WWIP.

and the Debt Coverage Ratio are both largely dependent on Defendant's willingness and ability to manage and increase revenues.

Finally, the Regulators are concerned, given Defendants' assertions about lack of financial capability, that Defendants have proposed to spend so much money on Asset Management, "Allowances," and Green Infrastructure without sufficient plans proposed at this juncture as to how much will be spent on which particular projects and when.⁷ Since there is only one "pot of money," the Regulators need greater assurance that the money will be put, relatively speaking, to its highest and best use. Without a more detailed proposal for each of these categories of expenses, it is not appropriate to "reserve" such large amounts of money to be spent on as yet unspecified projects that may not be as environmentally beneficial as the "grey projects" that have been selected and listed for implementation to address specific CSOs and SSOs.

In sum, Defendants' approach does not ensure a schedule that is "as expeditious as practicable," is not based on sufficient consideration of U.S. EPA's Financial Capability Guidance, and does not provide sufficient fixed dates or certainty that work will be completed, or allow sufficient accountability by the Defendants concerning spending of unspecified monies or when firewalls are triggered. Instead, as discussed below in Section IV.A of this letter, the Regulators believe that a different schedule adjustment mechanism should be utilized.

B. The Schedule in the Revised WWIP was Not Based on a Proper Consideration of the Scheduling Factors Specified in Paragraph II.F of the Long Term Control Plan Update Work Plan

As noted above, Subparagraph VII.A.2 of the Global Decree requires that the schedule be "developed in accordance with Paragraph II.F of the Long Term Control Plan Update Work Plan," which, in turn, specifies that, among other things, the schedule will "be based on consideration of the following: water quality, human health, capacity-related 'water in basement' issues, pollutant loadings, volume of discharge, community priorities [and] sensitive areas." Defendants developed a scoring system as a means of giving consideration to the first six of these factors (i.e., all of the factors specified above other than "sensitive areas"). This resulted in establishment of specific scores for each of the bundles. As a general matter, those scores were then used to prioritize the specific bundles, starting with the bundle that received the highest score, followed by the bundle with the next highest score, and proceeding downward, with the bundle receiving the lowest score being placed at the end of the priority list.

Defendants followed this approach for all of their bundles, with the exception of the bundles in the Lower Mill Creek sewershed, which Defendants moved to the back of the priority list, even though five of the top nine scoring bundles using Defendants'

⁷ Thus, the Regulators fully agree with Sierra Club's comments that Defendants should develop a more comprehensive plan and set of schedules for Asset Management and Allowances.

prioritization methodology are located in the Lower Mill Creek sewershed. Specifically, out of the fifty-nine bundles, the third, sixth, seventh, eighth and ninth highest scoring bundles are in the Lower Mill Creek sewershed. The fact that a large number of Lower Mill Creek sewershed bundles scored so high is understandable, in light of the fact that those five bundles alone address approximately 6 billion gallons of untreated sewage per year, compared to a combined total of approximately 8.5 billion gallons being addressed by the Defendants' fifty-four other bundles.

Defendants chose to move the Lower Mill Creek sewershed bundles to the end of their schedule because Defendants want to have seven-to-ten years to implement and study green infrastructural measures as a possible means of eliminating or reducing the scope of the grey capital projects that are required for those bundles. As described in Section III.A.1 of this letter, however, there currently is no credible information that suggests that there is a realistic possibility that green measures will eliminate or significantly reduce the size of the Lower Mill Creek tunnel. In fact, the data that Defendants have generated to date actually demonstrates that green measures are unlikely to make a meaningful difference in the size of the tunnel. Consequently, Defendants' desire to study use of green infrastructure in the Lower Mill Creek sewershed was not an appropriate basis for deviating from Defendants' prioritization methodology, and so the schedule which resulted from that deviation was not based upon a proper consideration of the factors specified in Paragraph II.F of the Long Term Control Plan Update Work Plan.

Defendants also appeared to have based their decision to de-prioritize the Lower Mill Creek sewershed measures because Defendants' ratepayers expressed a generalized reluctance to spend money on projects whose impacts would largely be seen in the Ohio River, outside of Hamilton County, rather than on projects that would impact the receiving streams which flow through Hamilton County's neighborhoods. Clearly, local ratepayer preferences should play an important role in deciding the order in which specific projects should be constructed. However, as described in the CSO Policy, the WWIP also needs to take into account the interests of "persons who reside downstream from the CSOs, persons who use and enjoy those downstream waters, and any other interested persons." 59 Fed. Reg. at 18,692.⁸ Consequently, Defendants' local ratepayer concerns, while important, should not be allowed to trump all of the other prioritization factors that were specified in Paragraph II.F of the Long Term Control Plan Update Work Plan, particularly given that Defendants' massive volumes of CSOs are impacting the Ohio River, an interstate waterway that is used for recreational purposes.

Finally, Defendants have argued that moving Lower Mill Creek sewershed bundles up in the schedule in a manner consistent with Defendants' prioritization scoring process would prevent Defendants from being able to implement measures to address community priority areas. However, only three specific community priority areas were identified during the course of Defendants' public outreach efforts: the intersection of Werk and

⁸ Defendants noted on page 7-6 of Volume XXI of their June 2006 WWIP that "extensive contact recreation including swimming and water skiing takes place from boating activities within the [Ohio River] study area,"

Westbourne Roads; the intersection of Delta and Eastern Avenues, and the entire Little Miami River. With respect to the first two of these areas, Defendants have proposed addressing the Werk and Westbourne overflows by constructing a \$19.5 million EHRT treatment facility; and the Delta and Eastern Avenue overflows by constructing approximately \$76 million in projects, with \$41 million of those projects nearly completed. Defendants have not demonstrated why work on these projects would need to slow down if some of the Lower Mill Creek bundles were moved up in the priority list.

The Regulators recognize that moving some of the Lower Mill Creek sewershed measures up in the schedule may necessitate deferring work on some of the Little Miami River sewershed measures. However, Defendants' proposed approach of doing virtually nothing to address their massive overflows into the Lower Mill Creek watershed and Ohio River until the distant future is unacceptable for the reasons described above. Rather than taking the "all or nothing" approach proposed in the Revised WWIP, Defendants should develop a schedule that includes making significant progress on projects in both sewersheds.

IV. Recommendations for How Defendants Could Revise the WWIP

As described above, the Regulators believe that the specific remedial measures set forth in Exhibit 2.2 to the Revised WWIP would be approvable, provided that Defendants develop a schedule which ensures that (1) those measures are implemented as expeditiously as practicable and (2) measures are taken to meaningfully reduce the large CSO discharges in the Lower Mill Creek sewershed much earlier in the schedule than is contemplated by the Revised WWIP.

A. Schedule That is As Expeditious as Practicable

With regard to the first issue, the Regulators agree that one way to address concerns about financial capability would be to develop an approach by which expenditures on the WWIP can be periodically reviewed against financial parameters. The approach should be guided by the following principles:

Conceptually based on the EPA Financial Capability Guidance. EPA's Financial Capability Guidance is straightforward, well-established, easy to understand, and specifically referenced in the Global Consent Decree.

Transparency. The process should be relatively straightforward and easy to audit, without complicated formula or methods that the parties will struggle to implement.

Use Publicly Available Data. In order to simplify implementation, the approach should make the most use possible of actual, publicly available data; and minimize the issues associated with prognostication or use of some set of information that may or may not be available in ten or fifteen years.

Flexibility. The approach should be designed to take into account the possibility that there may be events that improve Defendants' capability, just as there may be events that support hinder Defendants' capability. While the current economic situation is certainly difficult, it is unlikely it will continue for the duration of the program.

Consistent Approach. The analysis and inputs should be consistent with the above Principles and be established up front. Defendants should be allowed to request a change to the data inputs or approach in the future if they believe, for example, a different method of calculating median household income or service area population, is more accurate or otherwise superior. However, the Regulators' decision to agree or not to agree to any proposed change should not be subject to dispute resolution or judicial review.

Specific Approach

Conceptually, the Regulators' approach is as follows. The schedule will be set based on technical and engineering feasibility. (As described in Section III.A.1 of this letter, the schedule should be substantially shorter than the 30-year period discussed in the Revised WWIP.) The WWIP projects would be prioritized as described below in Section IV.B of this letter, and each bundle of projects would have enforceable milestone deadlines as required by Subparagraph VII.A.2 of the Global Decree. Approved Green Infrastructure projects would also have fixed deadlines.

Defendants' would periodically perform the Residential Indicator Analysis set forth in the Guidance using some specified limited time period of future costs (e.g., the costs for the next three years of projects, which will be referred to herein as "years 1-3) as the basis for its "Projected Capital Costs." If that analysis shows that the Residential Indicator exceeds a specified threshold (somewhere above 2%), then Defendants could submit the analysis with a request that the Regulators agree to a revised schedule that is as expeditious as practicable for completing the work that it is required to be performed in the subsequent limited timeframe (years 3-6) according to the original schedule. Defendants would be required to construct the required measures for the specified time period in the analysis (years 1-3) in accordance with the already established schedule while the Regulators review and act on the schedule extension request for the years beyond that time period. The Regulators suggest that the analysis focus on costs projected for the next three years -- a short period, but one sufficient to provide for the lead time necessary to finance and implement construction of a segment of the program and that fits Defendants' planning horizon.

For example, an analysis occurring in 2015 would examine forward-looking costs for 2016 through 2018. The Residential Indicator analysis would evaluate current (2015) costs, including debt service or increased operations and maintenance incurred for implementation of the WWIP, as well as Projected Future Costs (in 2015 dollars) for the

measures required to be constructed from 2016-2018.⁹ As noted, the details of the various inputs will need to be clearly specified, but the process would generate a Residential Indicator. If the Residential Indicator exceeds the “trigger,” which would be set at some value greater than 2% for the Defendants’ service area, Defendants’ could submit the analysis and request a specific revised schedule for the work that was originally scheduled to be performed in years 2019-21. Defendants would be required, however, to continue to perform the work required from 2016-2018 in accordance with the previously approved schedule.

The Regulators may approve or disapprove Defendants’ proposed schedule, based upon whether it is “as expeditious as practicable” given technical and financial feasibility in accordance with the CSO Policy, the Financial Capability Guidance, any other applicable EPA guidance, and other information. The Regulators’ decision would be subject to dispute resolution. While the Financial Capability Guidance indicates that a Residential Indicator over 2% may be considered a “high burden” for a community, the Guidance does not dictate that this necessarily reflects some sort of limit of financial feasibility. Thus, in devising a schedule that is as expeditious as practicable, Defendants’ ratepayers may be required to bear rates that result in a greater burden than the selected trigger amount if it is financially feasible for the community to pay this and necessary for a schedule that is as expeditious as practicable. Again, if Defendants believe that the ratepayers are being forced to shoulder too heavy a burden, they may dispute the determination and ultimately obtain judicial review on the issue.

The Regulators envision continued oversight of Defendants’ schedule in this manner for as long as the Residential Indicator trigger is exceeded. Increased government oversight during this time period will ensure that the schedule is as expeditious as practicable. The Regulators further suggest that periodic meetings during this time period would be appropriate. Once a triggering event and review has occurred, Defendants’ would be required to perform the Residential Indicator analysis annually, and submit the results to the Regulators.

If there comes a time that financial conditions improve such that the Residential Indicator threshold amount is no longer triggered, the schedule for the work that has not been completed should be adjusted to reflect the extensions that have been granted, but then should continue at the same pace as originally proposed – that is, based on technical feasibility.¹⁰

⁹ The analysis should also include a summary of the projects that Defendants intend to implement under their Asset Management, Green and Allowances programs in the upcoming period of time and their costs.

¹⁰ If, as Sierra Club envisions, economic conditions improve dramatically as a result of implementation of the WWIP, then either the Residential Indicator threshold may never get triggered or, if it does get triggered, and a schedule extension is allowed, then the period of time that the Residential Indicator threshold has been triggered will

B. Earlier Measures to Address Lower Mill Creek Discharges

The Regulators recognize that, given the enormity of the overflow problems in the Lower Mill Creek sewershed, it may not be appropriate to establish a schedule that would require all of those problems to be remedied immediately because such a schedule would hinder Defendants' ability to address other important overflow problems in the remainder of their system. However, as noted above Defendants' proposed approach of doing virtually nothing to address overflows in the Lower Mill Creek sewershed until the distant future is unacceptable for the reasons described in Section III.B of this letter.

Under these circumstances, the Regulators believe that an appropriate approach is one which requires Defendants to commence work on measures to substantially reduce discharges from some of the largest Lower Mill Creek CSOs earlier on in the schedule than Defendants' had proposed, while deferring work on the remainder of Lower Mill Creek measures until later in the schedule. There may be a number of ways in which this could be accomplished. One way would be for Defendants to commence construction on the Lower Mill Creek tunnel early on in the schedule (e.g., commence construction within five years), and the associated measures to connect only a few of the largest CSOs (e.g., Western Hills Viaduct Groups 1 and 2; Hopple Street Clusters 1, 2, and 3; and Kings Run Cluster) into the Lower Mill Creek tunnel. Work on the remainder of Lower Mill Creek measures could be deferred until the end of the schedule. Such measures could eliminate approximately 3.2 billion gallons of CSO discharges per typical year, at a cost of approximately \$450 million (compared to a cost of approximately \$976 million if all of the Lower Mill Creek measures were implemented, or approximately \$652 million if all of the tunnel-related CSOs were required to be addressed early on). Additional information on this possible approach is set forth in Attachment 1 to this letter.¹¹

The Regulators recognize that these approaches will likely still necessitate a reshuffling of some of Defendants' priorities, as Defendants prepare their schedule for the remainder of the projects in the WWIP. In doing so, Defendants should consider moving some of the CAPP projects to the back of the schedule, to the extent that doing so would allow Defendants' to more quickly implement higher priority CSO projects. Defendants should similarly consider whether any re-ordering of priorities on CSO projects is warranted to achieve the same purpose. One example of a CSO project that may warrant such consideration is the Upper Duck Creek in-stream treatment facility. The Regulators' do

decrease. Consequently, the Regulators' proposed schedule adjustment mechanism is a reasonable means of taking improved economic conditions into account.

¹¹ Although, as noted above, the Regulators believe that the measures set forth in Exhibit 2.2 are approvable (assuming the Regulators' scheduling comments are sufficiently addressed), the Regulators also recommend that Defendants consider the possibility of a conveyance sewer to pickup the Kings Run and Elmwood EHRTs for conveyance to the Lower Mill Creek tunnel and a consolidated EHRT located closer to the Mill Creek wastewater treatment plant.

not have any preconceived notions as to how such a reconsideration of CAPP and CSO projects will turn out, but do believe that it is warranted.

C. Green Infrastructure

The Regulators continue to be supportive of Defendants' efforts to investigate the use of green measures as a means of reducing or replacing grey CSO and SSO control measures. Using green approaches where such approaches are cost-effective should help to reduce capital and/or operational costs, and may produce ancillary benefits for the community. On the other hand, given Defendants' appropriate desire to control costs to the greatest extent possible, as well as the negative impact that escalating costs could have on the schedule for Defendants' implementation of the WWIP under the type of the "schedule adjustment" approach that Defendants have requested (and that the Regulators are willing to consider, consistent with Section IV.A of this letter), it is imperative that Defendants only devote their scarce financial resources to investigating and implementing green measures where there appears to be reasonable possibility that such measures could be a cost-effective means of reducing or replacing grey measures.

With these principles in mind, the Regulators are supportive of Defendants pursuing these opportunities outside of the Lower Mill Creek, as Defendants have demonstrated that there is a reasonable possibility that green measures can be cost-effectively used to achieve a target level of overflow control. The Regulators believe that one way that the WWIP can incorporate such an approach would be as follows:

- The WWIP should include specific grey measures addressing all of Defendants' overflows, but the WWIP can include specific language providing Defendants with the opportunity to seek the Regulators' approval of revisions to those measures where Defendants can demonstrate that an equivalent or better level of control can be achieved for the specific overflow through green or green/grey measures.
- Defendants should define methods and assumptions that will be used in evaluating when green can substitute for grey, to facilitate evaluations and reviews of future bundles. Defendants should also consider the timing of when the green infrastructure measures can be installed and when they will function at peak performance. Broad implementation to control high volumes of flows may take a considerable amount of time.
- Defendants should put in place programs/mechanisms to ensure that green infrastructure on public and private property will be properly maintained. For example, maintenance plans could be developed and long-term maintenance agreements may need to be enacted for decentralized green practices.
- Defendants should put in place mechanisms to ensure that the decentralized practices on public and private property will be preserved

over time. For example, infiltration areas could be protected by binding conservation easements that identify a third party management agency, such as a homeowners association/condominium association, political jurisdiction or third party land trust.

- Defendants and partnering communities should develop and utilize a database to maintain a detailed inventory of green infrastructure practices, including location, design specifications, ownership status, maintenance responsibilities, and access information. The database should then be used to schedule and track maintenance of the practices.

As described in Section III.A of this letter, the Regulators do not believe that there is a reasonable possibility that green measures can be cost-effectively used to reduce or replace the need for substantial grey infrastructural measures in for the largest CSOs in the Lower Mill Creek,¹² and so question whether scarce public resources that could otherwise be targeted toward achieving CSO and SSO control should be used pursuing green measures. Defendants and the Sierra Club, on the other hand, believe that more information can be developed in short order through an accelerated program on the viability of using green measures for the large Lower Mill Creek CSOs, and that such information can inform final decisions about the grey infrastructure needs to address large CSOs in the Lower Mill Creek.

Given Defendants' and Sierra Club's strong interest in this issue, the Regulators believe that it may be appropriate to include such an accelerated action plan in the WWIP, provided (1) the WWIP includes specific grey measures for addressing the Lower Mill Creek WWIP in accordance with a schedule that is consistent with our comments in Sections III.B and IV.B; (2) the costs of implementing such plan are not too high; and (3) the WWIP includes provisions on these issues consistent with the Regulators' comments on green measures for overflows outside of the Lower Mill Creek. It may also be appropriate to include in the WWIP certain Green Demonstration Projects and Pilot Projects that may have value in evaluating the use of green measures in any of Defendants' sewersheds.

D. Asset Management, Green and Allowance Programs

As noted above, the Regulators are concerned, given Defendants' assertions about lack of financial capability, that Defendants have proposed to spend so much money on Asset

¹² The Regulators do believe that, for some of the smaller CSOs in the Lower Mill Creek, there is a reasonable possibility that green measures could be a cost-effective means of reducing CSOs down to an appropriate target level, and so the Regulators are supportive of Defendants' pursuing green measures for those CSOs in accordance with the Regulators' comments on Defendants' approach to green measures for overflows outside of the Lower Mill Creek.

Management, "Allowances," and Green Infrastructure programs without sufficient plans proposed at this juncture as to how much will be spent on which particular projects and when. One way to help address this concern would be for the WWIP to include provisions for Defendants to periodically (e.g., every three years) report to the Regulators on the projects performed and costs incurred under these programs in the prior period, as well as the projects under these programs that Defendants intend to perform for the next period and their anticipated costs.

V. Conclusion

In accordance with Subparagraph VII.A.3 of the Global Decree and Paragraph VI.E.8 of the SSO Decree, U.S. EPA, Ohio EPA, and ORSANCO decline to approve the WWIP (including the Long Term Control Plan Update Report, the Detailed Outline, and the Capacity Assurance Program Plan), and provide the foregoing written comments. In accordance with Subparagraph VII.A.3 of the Global Decree,¹³ Defendants have 120 days to alter the WWIP consistent with these written comments and resubmit it for final approval, or submit the matter for dispute resolution. Please contact Duane Heaton of my staff (312-886-6399) or Gary Prichard from our Office of Regional Counsel (312-886-0570) if you have any questions about this letter.

Sincerely,



Thomas L. Bramscher, Chief
Enforcement Section I

Enclosure

cc (via email): Mark Norman
Louis McMahon
Marilyn Wall
Paul Novak
Jason Heath

¹³ Subparagraph VI.E.8 of the SSO Decree provides Defendants 90 days to revise and resubmit the CAPP. Given that the CAPP and Long Term Control Plan Update have been combined into one document, the WWIP, and that there will be one schedule for the completion of all the WWIP projects, the Regulators are hereby extending the deadline for resubmission of the CAPP to 120 days, consistent with the deadline for the Long Term Control Plan Update.

ENCLOSURE 1

LOWER MILL CREEK TUNNEL WITH REDUCED NUMBER OF CONNECTIONS

1. Specific Measures

- a. 30 foot tunnel proposed in Exhibit 2.2
- b. Initially include only the following Clusters/Groups
 - i. Western Hills Viaduct Groups 1 and 2
 - ii. Hopple Street Clusters 1, 2, and 3
 - iii. Kings Run Cluster
- c. Design the Pump Station with current capacity appropriate to initial load, but design so as to allow significant future expansion

2. Estimated Project Costs

Clustered Estimates (30 Foot Tunnel)	
Estimate Name	Total Estimated Project Cost
30' Diameter Tunnel Alignment	\$269,096,443.37
Western Hills Viaduct Group 1	\$11,770,398.58
Western Hills Viaduct Group 2	\$33,589,950.38
Hopple Street Cluster Group 1	\$9,857,331.20
Hopple Street Cluster Group 2	\$18,188,264.78

Clustered Estimates (30 Foot Tunnel)	
Hopple Street Cluster Group 3	\$19,660,735.54
Kings Run Cluster	\$55,358,683.70
Miscellaneous Items	\$6,677,893.92
Pump Station	\$24,324,975.12
Total Cost	\$448,524,676.59

It is assumed that the pump station size would be unchanged from that in MSD's full scope tunnel proposal.

3. Revised Predicted Performance

- a. Following discussion with MSD, the volumes of flow associated with the clusters to be connected to the tunnel have been revised. It should be noted that the volumes presented below, while much closer to those cited by MSD in the aforementioned discussions, are nonetheless still somewhat higher than MSD's flows. Further (hopefully slight) revision of the flows presented below may therefore still occur as efforts are made to resolve the remaining inconsistencies.
- b. Assume that the annual volume captured will be the same as that for MSD's Full Scope LMC Tunnel, at 85% control; i.e., it will reduce the existing condition flow of the controlled clusters from 4,151 MG/yr to 949.5 MG/yr, capturing 3,201 MG/yr.
- c. By reducing the number of clusters, 4,151 MG/yr - 3,529 MG/yr or 622 MG/YR will not be connected to the tunnel.

- d. The level of control provided for the clusters connected to the 30 foot/reduced scope tunnel will be over 90%.
- e. The capital cost per annual gallon controlled would be:
 - i. MSD Proposed Tunnel - \$0.20/gallon-yr.
 - ii. Tunnel With Reduced Number of Connections - \$0.14/gallon-yr.

4. Future Enhancement Potential

- a. There are two ways in which performance can be enhanced in the future:
 - i. Connect additional clusters to the tunnel, expand the pump station, and add an EHRT to allow the tunnel to function both as storage and as conveyance. This should allow for the attainment of the level of control that would be attained by MSD's current 85% tunnel proposal.
 - ii. Initially up- size the connections to the tunnel to allow future increases in level of capture from the clusters already connected to the reduced scope tunnel, expand the pump station, and add an EHRT to allow the tunnel to function both as storage and as conveyance. This approach would only address overflow volume; activation frequency for the clusters not connected would remain high (unless controlled by other means).