

US EPA ARCHIVE DOCUMENT



**METROPOLITAN SEWER DISTRICT  
OF GREATER CINCINNATI**

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[www.msdc.org](http://www.msdc.org)

James A. Parrott  
*Executive Director*

June 4, 2009

Chief, Enforcement and Compliance Assurance Branch  
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U.S. EPA, Region V  
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Chicago, Illinois 60604

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Chief, Environmental Enforcement Section  
Environment and Natural Resources Division  
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Reference DJ #90-5-1-6-341A

Ohio EPA Southwest District Office  
Attn: DSW Enforcement Group Leader  
401 East Fifth Street  
Dayton, Ohio 45402-2911

Chief, Environmental Enforcement Section  
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Columbus, Ohio 43215-3428

Alan H. Vicory, Executive Director & Chief Engineer  
ORSANCO  
5735 Kellogg Avenue  
Cincinnati, Ohio 45228-1112

**RE: Submission of Final Wet Weather Improvement Program**

Dear Ladies and Gentlemen:

The Metropolitan Sewer District of Greater Cincinnati ("MSD"), on behalf of the Defendants City of Cincinnati and Hamilton County Board of Commissioners, hereby submits the enclosed Final Wet Weather Improvement Program ("Final WWIP") to U.S. EPA, Ohio EPA, and ORSANCO (collectively, the "Regulators") in compliance with the requirements of the Clean Water Act, the two Consent Decrees<sup>†</sup> entered on June 9, 2004 in *United States, et al. v. Board of County Commissioners, CA-1-02-107* (collectively, the "Consent Decrees"), the order of the U.S. District Court entered December 3, 2008, and the Regulators' Formal Response Letter dated November 25, 2008 ("Regulators' Response Letter").

<sup>†</sup>Judge S. Arthur Spiegel, on June 4, 2004, signed a Consent Decree on Combined Sewer Overflows, Wastewater Treatment Plants and Implementation Capacity Assurance Program Plan for sanitary Sewer Overflows (the "CSO Decree") in *United States of America, et al., v. Board of County Commissioners of Hamilton County, Ohio, et al.*, U.S. District Court, Southern District of Ohio, Case No. C-1-02-107. The Court entered on the same date a companion Consent Decree, entitled "Interim Partial Consent Decree on Sanitary Sewer Overflows" (the "SSO Decree").

**Customer Service**  
513-352-4900

**Emergency Service**  
513-352-4900



This Final WWIP includes the CSO Long Term Control Plan Update ("LTCPU") and the Capacity Assurance Program Plan ("CAPP"). As used in the Final WWIP, "Defendants" means, collectively, the Board of County Commissioners of Hamilton County, Ohio and the City of Cincinnati, Ohio, and "Regulators" means, collectively, the U.S. EPA, Ohio EPA, and the Ohio River Valley Water Sanitation Commission.

In June 2006, Defendants submitted a Wet Weather Improvement Program plan ("2006 WWIP") to the Regulators. Defendants intended for the WWIP to fulfill the CAPP and LTCPU requirements of the 2002 Interim Partial Consent Decree on Sanitary Sewer Overflows ("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 ("CSO Decree"). On September 16, 2008, Defendants proposed significant changes to the 2006 WWIP, in a document entitled 2008 Revised Wet Weather Improvement Program Detailed Conceptual Outline Report ("2008 Revised WWIP"). On November 25, 2008, the Regulators issued a letter to Defendants declining to approve the 2006 WWIP and 2008 Revised WWIP. On March 25, 2009, Defendants proposed additional changes to the 2006 WWIP and 2008 Revised WWIP in a letter to the Regulators with detailed attachments ("2009 Revised WWIP"). The Regulators have thereafter obtained comments from the Sierra Club and have contacted Defendants in order that a final WWIP be submitted that is consistent with the Regulators' Response Letter. This Final WWIP (including its attachments) is proposed as the final WWIP, which Defendants believe will address the Regulators' comments and inquiries. This Final WWIP is based upon and supported by the monitoring, modeling, analytical, and public participation efforts that Defendants performed in accordance with the SSO and CSO Decrees, the information developed and submitted to the Regulators in the 2006 WWIP, 2008 Revised WWIP, and 2009 Revised WWIP, and other reports, studies, and information provided to the Regulators and Sierra Club after the entry of the SSO and CSO Decrees.

This Final WWIP is proposed on the condition that the CSO and SSO Decrees are modified to conform to this Final WWIP regarding certain project and schedule related issues.

Sincerely,

  
James A. Parrott  
Director

Encl.

cc: Board of County Commissioners  
City Manager, City of Cincinnati  
Marilyn Wall, Sierra Club

### Final Wet Weather Improvement Program

This Final Wet Weather Improvement Program ("Final WWIP"), is being submitted to fulfill consent decree requirements pertaining to submission of the CSO Long Term Control Plan Update ("LTCPU") and the Capacity Assurance Program Plan ("CAPP"). As used in this Final WWIP, "Defendants" means, collectively, the Board of County Commissioners of Hamilton County, Ohio and the City of Cincinnati, Ohio, and "Regulators" means, collectively, the U.S. EPA, Ohio EPA, and the Ohio River Valley Water Sanitation Commission.

In June 2006, Defendants submitted a Wet Weather Improvement Program plan ("2006 WWIP") to the Regulators. Defendants intended for the WWIP to fulfill the CAPP and LTCPU requirements of the Interim Partial Consent Decree on Sanitary Sewer Overflows ("SSO Decree") and the Consent Decree on Combined Sewer Overflows, Wastewater Treatment Plants and Implementation of Capacity Assurance Program Plan for Sanitary Sewer Overflows ("CSO Decree") (both Decrees entered in June 2004). On September 16, 2008, Defendants proposed significant changes to the 2006 WWIP, in a document entitled 2008 Revised Wet Weather Improvement Program Detailed Conceptual Outline Report ("2008 Revised WWIP"). On November 25, 2008, the Regulators issued a letter to Defendants declining to approve the 2006 WWIP and 2008 Revised WWIP. On March 25, 2009, Defendants proposed additional changes to the 2006 WWIP and 2008 Revised WWIP in a letter to the Regulators with detailed attachments ("2009 Revised WWIP"). The Regulators have thereafter obtained comments from the Sierra Club and have contacted Defendants in order that a final WWIP be submitted that is consistent with the Regulators' November 25, 2008 letter. This Final WWIP (including its attachments) is proposed as the final WWIP, which Defendants believe will address the Regulators' comments and inquiries. This Final WWIP is based upon and supported by the monitoring, modeling, analytical, and public participation efforts that Defendants performed in accordance with the SSO and CSO Decrees, the information developed and submitted to the Regulators in the 2006 WWIP, 2008 Revised WWIP, and 2009 Revised WWIP, and other reports, studies, and information provided to the Regulators and Sierra Club after the entry of the SSO and CSO Decrees. This Final WWIP is proposed on the condition that the CSO and SSO Decrees are modified to conform to this Final WWIP regarding

certain project and schedule related issues.

A. WWIP Phase 1

1. Schedule of Work: Defendants shall implement the projects or project bundles ("projects") listed as Phase 1 in accordance with the schedule set forth in **Attachment 1A**, which schedule shall achieve substantial completion of construction of all Phase 1 projects by no later than December 31, 2018, except in accordance with Paragraph A.2 below ("Phase 1 End Date") and according to the performance and design criteria set forth in **Attachment 1B** (and **Attachment 5** for EHRT facilities) and the project milestones set forth in **Attachment 1A**. Phase 1 includes about \$1.145 billion (all dollar (\$) values in this Final WWIP and its attachments are in 2006 dollars unless otherwise noted) in work, including projects and allowances (including green infrastructure). Estimated costs are identified in **Attachment 1B**.

2. LMCPR: Phase 1 includes a Lower Mill Creek Partial Remedy ("Original LMCPR") which specifically consists of a short deep tunnel and an Enhanced High Rate Treatment without ballasted flocculation ("EHRT") facility, described in **Attachment 1C**, which is presently estimated to cost approximately \$244 million.

a. LMC Study/Revised Original LMCPR: Phase 1 will include a 3 year study/detailed design period to examine green measures and other measures to refine the Original LMCPR approach and cost estimates. Defendants may submit to the Regulators proposed changes to, or improvements on, the Original LMCPR remedy as a result of this study, provided the proposed revised remedy ("Revised Original LMCPR") provides equal or greater control of CSO annual volume as the Original LMCPR and is completed by the Phase 1 End Date. Defendants shall submit to the Regulators a LMCPR Study Report and any proposal for a Revised Original LMCPR by December 31, 2012.

b. EHRT Alternatives Analysis: Subject to the terms of this Paragraph A.2.b, Defendants shall, no later than June 30, 2014, submit to Ohio EPA an EHRT alternatives analysis ("EAA") of the Original LMCPR EHRT or the Revised Original LMCPR EHRT which (i) describes the cost, benefits in pollutant removal, technology utilized, design and performance criteria of the facility for which Defendants intend seek a Permit to Install ("PTI"), (ii) describes a range of alternatives for the EHRT portion of the facility and (iii) compares the EHRT in the Original LMCPR (or any EHRT in a Revised Original LMCPR) with alternative enhanced high rate treatment technologies for clarification by cost, benefits in pollutant removal, and cost-effectiveness. However, the Defendants' obligation to submit an EAA shall exist only if Defendants seek a PTI for an EHRT in the Original LMCPR or an EHRT in the Revised Original LMCPR. Further, while the EAA will be considered a part of Defendants' PTI application for a specific EHRT, the EAA (in and of itself) shall not cause or give rise to the issuance of any type of action or determination by the Director of Ohio EPA, except a proposed action, final action or determination on the submitted PTI application.

c. LMCPR Schedule Extensions: It is presently expected that the Original LMCPR will cost approximately \$244 million. If Defendants demonstrate that the projected costs of the Original LMCPR or Revised Original LMCPR will exceed \$300 million, then Defendants have the right to extend the schedule for completing the Original LMCPR or Revised Original LMCPR by up to 2 years. If Defendants demonstrate that the projected costs will exceed \$350 million, Defendants may also submit to the Regulators a proposed schedule extension beyond 2 years if the Defendants can demonstrate that the additional time is necessary and that the schedule for completion is as expeditious as practicable. Any extension allowed under this Paragraph A.2.c would not serve to extend any other aspect of Phase 1, and would not serve to extend the deadline for submission of the Phase 2 schedule described below, but see Paragraph B.4 below.

d. Substitute LMCPR: If by June 30, 2015, Defendants submit a timely and complete application for a PTI for the installation and operation of the Original LMCPR EHRT (or the

Original LMCPR as a whole, including the EHRT)(or an approved Revised Original LMCPR EHRT, or an approved Revised Original LMCPR as a whole, including an EHRT) and if, by December 31, 2015, a PTI is not granted by Ohio EPA, or is approved with conditions requiring ballasted flocculation technology (when no ballasted flocculation technology was proposed in the PTI application) or conditions that are inconsistent with the Design and Performance Criteria that are listed on Attachment 5 (when no conditions inconsistent with those Design and Performance Criteria were proposed in the PTI application), then:

- (i) Defendants are not obligated to commence (or substantially complete) construction of the Original LMCPR (or the Revised Original LMCPR), and,
- (ii) Defendants shall submit to the Regulators for their review and approval a proposed, substitute LMCPR ("Substitute LMCPR"), which shall provide equal or greater control of CSO volumes on an annual basis as the Original LMCPR, unless the costs of the Substitute LMCPR, when added to the costs expended by Defendants on implementing the Original LMCPR (or the Revised Original LMCPR), exceed the greater of (a) \$244 million or, (b) the costs of implementing the Original LMCPR as determined at the time that Defendants submitted their application for a PTI. If the costs exceed the greater of those two amounts, then Defendants shall submit to the Regulators for their review and approval a proposed Substitute LMCPR which shall both provide the greatest control of CSO annual volume practicable, and cost no less than \$244 million and no more than the greater of the two amounts set forth above in the preceding sentence in items (a) and (b).

The Defendants' submission to the Regulators of a proposed Substitute LMCPR shall also include a schedule for implementing the Substitute LMCPR that shall be

as expeditious as practicable and may extend beyond the Phase 1 End Date. For the balance of this Final WWIP, the term "LMCPR" shall mean either the "Original LMCPR", the "Revised Original LMCPR", or the "Substitute LMCPR" as determined under this Paragraph A.2.

3. SSO 700: Phase 1 will also include a 3 year study to identify the SSO 700 Final Remedial Plan ("SSO 700 Remedial Plan"). This study will augment work Defendants have already performed for the SSO 700 Remedial Plan required by Section VI.C.3 of the SSO Consent Decree, and will also consider information arising from the evaluation of the effectiveness of the SSO 700 Interim Remedial Measures, the LMC Study being conducted pursuant to Paragraph 2.a., examinations of the potential use of green measures, RDI/I work upstream of SSO 700, and other factors. Defendants shall submit to the Regulators the SSO 700 Remedial Plan by December 31, 2012 (rather than December 31, 2009 as currently required by the SSO Consent Decree), which shall contain all of the information required in SSO Decree Section VI.C.3, except that the schedule for design and construction of the proposed remedial measures shall be submitted to the Regulators in accordance with, and shall be subject to, the Phase 2 schedule requirements specified in Paragraph B.1, below. The SSO 700 remedial measure (project # 10141180) set forth on Attachment 2 is conditioned on, and may be changed as a result of, the Defendants' submittal of the SSO 700 Remedial Plan and the Regulators' approval of the SSO 700 Remedial Plan.

4. Werk & Westbourne Pilot EHRT Project: The Werk and Westbourne Pilot EHRT project (Project #10130740), is a pilot EHRT which will be constructed according to the design and performance criteria on Attachment 5 to evaluate EHRT technology, and shall not require the EAA identified in Paragraph A.2.b, above.

B. WWIP Phase 2

1. Schedule of Work: By June 30, 2017, Defendants shall submit to the Regulators a proposed Phase 2 schedule for additional WWIP projects to be constructed



consistent with the priority order established in Attachment 2, and according to the design and performance criteria set forth on Attachment 2 (and Attachment 5 for EHRT facilities).

The Phase 2 schedule shall be as expeditious as practicable, based on the considerations set forth in Exhibit 4, Section II. F of the CSO Consent Decree (June 9, 2004) (including the Residential Indicator analysis through the method set forth below) (in Paragraph B.3), and other relevant factors, including but not limited to (a) the impact that the cost and length of schedule of Phase 2 will have on Defendants' financing in the tax exempt market, (b) local and national experience with the time, cost, economics and practicality of CSO/SSO program implementation, and (c) availability of "stimulus" money applicable to WWIP projects.

a. If Defendants fail to submit a Phase 2 schedule by August 31, 2017, in addition to applicable stipulated penalties, the Regulators may impose on Defendants a schedule for all or a part of Phase 2 that is as expeditious as practicable, which schedule is not subject to dispute resolution. Upon receipt of the Regulator schedule, Defendants shall implement the Regulator schedule until they have submitted a proposed Phase 2 schedule (which Regulators shall promptly review) in accordance with the requirements of this Paragraph B, and they have either (1) obtained the Regulators' approval of Defendants' proposed schedule, (2) Defendants' Phase 2 schedule has been determined in accordance with dispute resolution as set forth below in Paragraph C.4, or (3) the Regulators agree to adjust the Regulator schedule pending the approval process of the Defendants' Phase 2 schedule.

b. The proposed Phase 2 schedule required under Paragraph B.1 above shall include all remaining WWIP projects unless Defendants choose to submit to the Regulators a proposed Phase 2 schedule for only a subpart of the remaining WWIP projects ("Phase 2A"), with the remainder of the WWIP projects to be scheduled as part of an additional subpart ("Phase 2B") to be scheduled at a later specified date. If Defendants choose to submit a schedule for only a subpart of the remaining WWIP projects, then the Phase 2A and 2B schedules shall both be as expeditious as practicable, based on the considerations and factors described in Paragraph B.1 above. Defendants may request schedules for additional subparts beyond Phase 2B only if they can demonstrate that the additional schedule is necessary to

avoid severe financial hardship and that the schedule for completion of remedial measures in that subpart is as expeditious as practicable based on the considerations and factors described in Paragraph B.1 above.

c. If Defendants submit to the Regulators a proposed schedule for Phase 2 for only a subpart of the remaining WWIP projects, the schedule for Phase 2A shall include (i) planning and design work for a subset of Phase 2B projects in priority order to ensure that WWIP project work does not stop between Phase 2A and Phase 2B for lack of planned and designed projects; and, (ii) a schedule for completing a geotechnical investigation for the remaining Lower Mill Creek remedial project bundle as set forth in **Attachment 2** (Lower Mill Creek Final Remedy or "LMCFR") (provided, however, that such investigation shall not be required if a revised LMCFR has been approved such that some or all of such investigation is not needed).

2. Outer Boundary Cap: In no event shall Defendants be required to propose a schedule for any Phase 2 WWIP projects or work or implement, including continuation of, an approved schedule for Phase 2 WWIP projects or work where the cost of the projects or work for the specific schedule at issue would cause or contribute to the Residential Indicator ("RI") for the proposed or approved Phase 2 schedule at issue exceeding a cap of 2.8% (see Paragraph B.3 below on the RI analysis). This cap is solely an outer boundary, not-to-exceed, percentage established to assist in obtaining financing by providing some financial certainty, and shall not create an inference or suggestion as to what constitutes "as expeditious as practicable" as that term is used in Paragraph B.1 above. If this cap is exceeded, its effect (to extend the schedule(s) for implementing the WWIP) shall not relieve Defendants of the requirement ultimately to implement all WWIP measures under a schedule that is as expeditious as practicable.

3. RI Analysis: Defendants will perform RI analysis in accordance with U.S. EPA's Combined Sewer Overflows Guidance for Financial Capability Assessment and Schedule Development (March 1997) ("Guidance") (in the absence of an agreement by the

Defendants and Regulators to use an alternative method) using (1) the projected costs of the remaining WWIP projects for one analysis; and (2) the projected costs of the projects specified in Defendants' proposed Phase 2 schedule at issue if Defendants are only proposing a schedule for a subpart of the remaining WWIP projects for the second analysis. Defendants (i) shall use the information inputs set forth in **Attachment 3**; and (ii) may include projected future costs for "Asset Management" and for "Allowances," provided that Defendants demonstrate that those costs are likely to be incurred and that, for Allowances, the amount does not exceed an annual average of expenditures spent during the course of implementing the Phase 1 schedule, and, for Asset Management, the amount does not exceed \$51 million per year. Defendants may request that different cost figures be used for the MSD Sustainable Infrastructure (Green) Program of Allowances, and/or for Asset Management, for purposes of calculating the RI, provided that Defendants reasonably demonstrate the necessity of greater spending. The Regulators' decision to accept or reject Defendants' request for use of a different cost figure for Asset Management is not subject to dispute resolution.

4. **Phase 2 Schedule Modification:** If, between the date that Defendants submit a proposed Phase 2 schedule to the Regulators and the date that Defendants complete construction of the LMCPR, the costs of the LMCPR increase substantially beyond the costs used in calculating the RI in support of the proposed Phase 2 schedule such that there is a substantial effect on the Phase 2 schedule, Defendants may submit to the Regulators a proposal to modify the Phase 2 schedule to account for the cost increases, as long as the proposed modified schedule remains as expeditious as practicable.

5. **LMCFR:** No later than two years before any first Milestone Date that Defendants are required to meet for the LMCFR (as that project bundle is set forth in **Attachment 2**), Defendants may submit to the Regulators a proposal for a different project or projects for the LMCFR, provided the proposed remedy provides equal or greater control of CSO annual volumes as, and can be completed in a comparable timeframe to, the LMCFR set forth in **Attachment 2**. For purposes of scheduling, the LMCFR shall remain at the end

of the **Attachment 2** priority list.

6. **Supplemental Remedial Measures Plan:** Defendants will be required to obtain a PTI from Ohio EPA for each specific EHRT facility included in **Attachment 2**. If (a) the Regulators provide notice to Defendants of the facts and circumstances of a controlling decision or rule indicating that Defendants will not be able to obtain a PTI for a specific EHRT facility, or (b) Defendants have determined, on an informed, reasonable basis, that Defendants will not be able to obtain a PTI for a specific EHRT facility, then as expeditiously as practicable, but in no event later than three months before the applicable date for Commencement of Construction of that specific EHRT facility, Defendants shall submit to the Regulators for their review and approval a proposed Supplemental Remedial Measures Plan ("SRM Plan").

Each SRM Plan shall specify remedial measures and a schedule that is as expeditious as practicable to ensure that the CSOs that were to have been addressed by the specific EHRT facility will 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 (as defined in the CSO Decree) and the pollution control standards promulgated thereunder, and Defendants' Current Permits (as defined in the CSO Decree). To the extent that Defendants' proposed SRM Plan for a specific EHRT facility does not use EHRT technologies for clarification, Defendants shall explain why they chose their proposed alternative rather than an alternative utilizing ballasted flocculation technologies. In any event, Defendants shall also explain why they believe that their proposed SRM Plan will ensure compliance with all applicable laws, including why they believe Defendants will likely be able to obtain any PTI(s) that will be required under Ohio law in order to implement their proposed SRM Plan.

C. **Concepts Applicable to All Phases of the WWIP**

1. **Bond Covenants:** The Regulators and Defendants do not presently expect or

anticipate that implementation of the WWIP will cause Defendants to violate their existing bond covenants. However, because of the expected significance of a violation of bond covenants, if facts or circumstances arise that suggest that implementation of the WWIP may result in Defendants violating their bond covenants, Defendants may submit to Regulators a request for a modification of the WWIP as necessary to avoid violating their bond covenants.

2. Adaptive Plan Alterations: Defendants may submit to the Regulators proposed significant changes to specific projects, to groups of projects, to watershed approaches, priorities, and other matters through the concepts of "adaptive management." Defendants should propose such requests for Adaptive Management review no more frequently than every 5 years. In Phase 1, the Parties anticipate Major/Adaptive Management review in about 2013 and also as part of the Phase 2 scheduling. This provision does not prohibit requests for non-major alterations to projects or project bundles. The Regulators retain discretion to approve in conformance with the terms of the Consent Decree and this Final WWIP appropriate changes requested by Defendants to Performance and Design Criteria. The Regulators' decisions to approve or disapprove any modifications under this Section are not subject to dispute resolution.

3. Green Projects: Defendants may identify proposed revisions to WWIP projects by adding or substituting "green infrastructure" for "grey infrastructure" where it is justified by business case evaluation in Defendants' sole discretion. At the end of the LMC Study Period (Paragraph A.3), Defendants may submit to Regulators such proposed modifications for review. At the time of submission of any Phase 2 schedule (Paragraph B.1), Defendants may submit to the Regulators such proposed modifications. Defendants will make reasonable best efforts to request any such green modifications or substitutions in one of these submissions, although requests may be made at other times as appropriate. The Regulators' decisions to approve or disapprove any WWIP modifications under this Section are not subject to dispute resolution.

4. Submittals and Dispute Resolution.

a. The submittals required or permitted under this WWIP shall be subject to review and approval by the Regulators in accordance with Section XXX of the CSO Decree. The Regulators may approve the submittal or decline to approve it and provide written comments. Within 60 days of receiving the Regulators' written comments (or within such other timeframe as may be agreed to by the Parties), Defendants shall either: (i) alter the submittal consistent with the Regulators' written comments, and submit the revised submittal to the Regulators for final approval; or (ii) except as provided in Paragraphs B.3, C.2, C.3, or otherwise in Section XXI of the CSO Consent Decree, submit the matter for dispute resolution under Section XXI of the CSO Decree. Upon receipt of the Regulators' final approval of the submittal, or upon completion of the submittal pursuant to dispute resolution (as permissible), Defendants shall implement the submittal in accordance with its terms.

b. Except as provided in Paragraphs B.3, C.2, C.3, or otherwise in Section XXI of the CSO Consent Decree, any dispute that arises with respect to the meaning, application, implementation, interpretation, amendment or modification of this WWIP, or with respect to Defendants' compliance herewith (including the adequacy of the Defendants' performance of the remedial measures and adequacy of the submittals required by this WWIP) or any delay hereunder, the resolution of which is not expressly provided for in this WWIP, shall be subject to dispute resolution pursuant to Section XXI of the CSO Consent Decree.

5. Asset Management. The term "asset management" generally refers to a comprehensive and structured approach to the long-term management of assets as tools for the efficient and effective delivery of services; for purposes of this WWIP, the term "Asset Management" means those same capital expenditures by MSD that are not formally considered WWIP projects or Allowance expenditures. Asset Management budgets are submitted as part of the annual capital budget which is then subject to public review and evaluation prior to approval by the Board of County Commissioners. Annually, in one of the quarterly reports, Defendants shall provide an accounting and listing of the work for which

Asset Management capital funds have been spent during the preceding year as well as MSD's 3-year estimate of future Asset Management expenditures.

6. Allowances. In addition to the Long Term Control Plan and the Capacity Assurance Program Plan projects, the WWIP includes eight subject matter programs, referred to as "Allowances." The Allowance programs exist to address, reduce and/or eliminate overflows and improve water quality consistent with federal and state law. Allowance program activities complement the LTCP and CAPP projects. However, unlike fixed location, discrete projects, Allowances instead arise due to newly discovered circumstances (e.g., WIB, Sewer/Manhole Relining, RDI/I, Urgent Capacity), opportunities to directly improve water quality (e.g., HSTS), District-wide, regional, or large-scale circumstances (e.g., RDI/I, Green), or information/analysis needs (e.g., RDI/I, WWIP studies). Because Allowances are typically not planned or designed years in advance, their budgets will vary from year to year. The Phase 1 Allowance budget for this WWIP represents a reduction relative to the budgets and needs identified in MSD's 2006 and 2008 submissions to the Regulators. Projected Allowance expenditures for 2009 and 2010, with breakdowns by Allowance Program, including specific defined projects where they have been determined, are listed on Attachment 4. A budget for Allowances, including each of the eight programs, will be prepared as part of the MSD annual capital budget which is then submitted to the Board of County Commissioners, becomes subject to public review and evaluation, and then requires approval by the Board of County Commissioners. Annually, in one of the quarterly reports, Defendants shall provide an accounting and listing of the work for which Allowance monies have been spent during the preceding year as well as MSD's 3-year estimate of future expenditures. Listed below are names and descriptions of the Allowance programs.

a. Water-in-Basement Program (WIB):

The WIB program operates clean-up, claims, and prevention activities, customer education and communication, property acquisition, and other activities related to the administration and management of this program.

b. Sewer Relining (Trenchless Technology) Program:

This program conducts internal lining of sewers and external lining of aerial sewers as a cost effective method of rehabilitating structurally deteriorated sewers. This program will include, but not limited itself to, spiral wound pipe, pipe bursting, directional drilling, carbon filament wrapping, and jack and boring. These projects are identified through investigations of the sewer lines and are prioritized based on a standardized condition assessment procedure.

c. Manhole Rehabilitation (Trenchless Technology) Program:

The manhole rehabilitation program provides a cost effective method of rehabilitating structurally deteriorated manholes. Like the Sewer Lining Trenchless Technology Program, manhole rehabilitation projects are identified through investigations and are prioritized based on a standardized condition assessment procedure.

d. Rainfall Derived Infiltration and Inflow (RDI/I) Program:

This program assists in the elimination of Sanitary Sewer Overflows. Projects for RDI/I are identified through investigations which may use intrusive methods. Remedial projects are funded through this program or either or both of the Sewer Relining and Manhole Rehabilitation Allowance Programs, depending on the choice of construction methods.

e. Home Sewage Treatment System (HSTS) Elimination Program:

This program conducts the design, property acquisition and construction of new sanitary sewers to connect properties in built up areas of the MSD service area to eliminate home sewage treatment systems (HSTS). These projects improve the water quality of WWIP watersheds by replacing failing or inadequate home systems. These projects are



identified and prioritized based on the public health risk. HSTS construction projects will undergo public review and evaluation as part of proposed legislation and approval by the Board of County Commissioners.

f. **Urgent Capacity Response Program:**

This program funds measures that restore sewer capacity in existing CSO communities by identifying urgent WWIP construction work that is needed to address urgent CSO community capacity needs, WIB issues, or unpermitted flows. These measures are either not identified as WWIP projects or would be moved up from existing WWIP schedules. All construction projects will undergo public review and evaluation as part of proposed legislation and approval by the Board of County Commissioners.

g. **WWIP Progress Studies and Recreation Management:**

This allowance funds ongoing evaluation of the progress of the WWIP and various measures to address wet weather issues in CSO areas. Evaluations involve systematic review of the wet weather effect within watersheds, the sensitivity of various remedial projects on the system hydraulic grade lines etc. Findings of these studies will provide clear and strategic direction to the watershed planning group. This allowance also funds recreation management notice, reporting and information needs.

h. **MSD Sustainable Infrastructure (Green) Program:**

This program will use Low Impact Development Best Management Practices (LID BMP), storm water offloading through stream separation, and promotion of sustainable best practices to remove storm water from sewers in both CSO and SSO areas. Program activities will initially include LID Demonstration Projects (to evaluate technologies and reduce storm water impacts to CSOs), Pilot Projects (to evaluate multiple methods in a set of multiple projects), Regional BMP Projects (larger sewershed projects expected to capture over 10 million gallons) and Large Scale Projects (long-term projects in major CSO sewersheds).

These projects will be evaluated and, in some cases, prioritized on volumetric reduction of storm water from the system, and unit cost per gallon of water removed from the system. MSD intends to conduct this process in accordance with "asset-centric" prioritization principles which MSD will be publishing soon and will be open for public review and evaluation. The larger, more expensive green projects will focus on projects capable of removing a minimum of 10 million gallons of storm water from the combined sewer system, at equal or lower cost than comparable "grey" infrastructure projects.

#### **List of Attachments**

- Attachment 1A:** Phase 1 project list and schedule
- Attachment 1B:** Phase 1 project list with detailed information
- Attachment 1C:** Original LMCPR description
- Attachment 2:** Phase 2 project list with detailed information (no schedule)
- Attachment 3:** Information inputs for RI analysis
- Attachment 4:** Allowance information
- Attachment 5:** EHRT Performance and Design Criteria information

**ATTACHMENT 1A**  
**Phase 1 Milestone Schedule**

| <b>PROJECT ID</b> | <b>PROJECT</b>              | <b>PTI Submittal<br/>Milestone</b> | <b>Start Construction<br/>Milestone</b> | <b>End Construction<br/>Milestone</b> |
|-------------------|-----------------------------|------------------------------------|-----------------------------------------|---------------------------------------|
| 10130740          | Werk & Westbourne           | 12/31/2013                         | 12/31/2014                              | 12/31/2017                            |
| 10143960          | Westwood Northern (Bundle)  | 06/30/2015                         | 06/30/2016                              | 06/30/2017                            |
| 10142240          | Blue Rock                   | 12/31/2013                         | 12/31/2014                              | 12/31/2015                            |
| 10171840          | Lower Little Miami (Bundle) | 12/31/2012                         | 12/31/2013                              | 12/31/2015                            |
| 10120360          | Pebble Creek WWTP           |                                    |                                         | 06/30/2009                            |
| 10120420          | Diamond Oaks                |                                    | 12/31/2009                              | 12/31/2010                            |
| 10120460          | Towers East                 | 12/31/2011                         | 12/31/2012                              | 12/31/2013                            |
| 10130560          | Muddy Secondary             |                                    |                                         | 06/30/2010                            |
| 10130565          | Muddy Pump Upgrade          |                                    |                                         | 06/30/2010                            |
| 10130680          | Harwinton                   |                                    |                                         | 12/31/2010                            |
| 10131220          | Glenview                    | 12/31/2013                         | 12/31/2014                              | 12/31/2015                            |
| 10144441          | 1852 Columbia               |                                    | 12/31/2011                              | 12/31/2012                            |
| 10141440          | Millbrook 1                 |                                    |                                         | 06/30/2009                            |
| 10141520          | Arrowood                    |                                    |                                         | 06/30/2009                            |
| 10141540          | Winton 1                    |                                    |                                         | 12/31/2010                            |
| 10141560          | Winton 2                    |                                    |                                         | 12/31/2010                            |
| 10142020          | Daly Road                   | 12/31/2014                         | 12/31/2015                              | 12/31/2016                            |
| 10142440          | 7601 Production             |                                    |                                         | 06/30/2009                            |
| 10144880          | Mill Grit                   |                                    | 12/31/2010                              | 06/30/2013                            |
| 10144884          | Mill Secondary              | 12/31/2009                         | 12/31/2010                              | 12/31/2014                            |
| 10145180          | Mill Diversion              |                                    |                                         | 12/31/2009                            |
| 10145280          | Mitchell RTC                |                                    |                                         | 11/01/2009                            |
| 10145300          | Badgely RTC                 |                                    |                                         | 11/01/2009                            |
| 10145320          | Lick RTC                    |                                    |                                         | 05/31/2010                            |
| 10150012          | Polk Phase 3B               |                                    |                                         | 06/30/2009                            |
| 10160005          | Sycamore 3                  |                                    |                                         | 12/31/2010                            |
| 10160010          | Sycamore 4                  |                                    |                                         | 12/31/2010                            |
| 10170081          | Montgomery                  |                                    | 12/31/2011                              | 12/31/2012                            |
| 10170560          | Woodruff                    |                                    |                                         | 06/30/2009                            |
| 10170780          | LM WWTP Thickening          |                                    |                                         | 06/30/2010                            |
| 10171900          | Eastern Delta (Bundle)      |                                    | 12/31/2013                              | 12/31/2015                            |
| 10172090          | Kenwood                     |                                    |                                         | 06/30/2009                            |
| 10180600          | Mill Incinerator            |                                    |                                         | 12/31/2010                            |
| 10145580          | Mill Creek WWTP (Bundle)    | 12/31/2014                         | 12/31/2015                              | 12/31/2016                            |
| 10131180          | Muddy Creek WWTP (Bundle)   | 12/31/2013                         | 12/31/2014                              | 12/31/2015                            |
| 10143220          | North Side Upper (Bundle)   | 12/31/2016                         | 12/31/2017                              | 12/31/2018                            |
| 10171620          | Upper Duck All (Bundle)     | 12/31/2016                         | 12/31/2017                              | 12/31/2018                            |
| 10145660          | LMCPR                       | 06/30/2015                         | 06/30/2016                              | 12/31/2018                            |

# ATTACHMENT 1B

| INDEX | PROJECT                                                     | COMPLETION | SINK COSTS   |              | REMAINING COSTS |              | CSO SSO IDENTIFIER             | DESCRIPTION / DESIGN (NOTE4)                                                                                                                                 | TECHNOLOGY   | PLAN CAPP | PLAN REMAINING CSO (MGS/YEAR) |
|-------|-------------------------------------------------------------|------------|--------------|--------------|-----------------|--------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|-------------------------------|
|       |                                                             |            | 2006 DOLLARS | 2006 DOLLARS | 2006 DOLLARS    | 2006 DOLLARS |                                |                                                                                                                                                              |              |           |                               |
| 1     | 10141660 Noman Ave.                                         | Jan-04     | \$           | 137,501      |                 |              | SSO 585                        | Relief sewer to Elim. SSO 585 - 285 ft of 12"                                                                                                                | CONV         | 2 yr      |                               |
| 2     | 10141480 Mill Rd. Sewer                                     | Apr-04     | \$           | 1,855,899    |                 |              |                                | Phase 2 - Relief sewer to replace sewer - 2200 ft of 30"                                                                                                     | CONV         |           |                               |
| 3     | 10142040 Compton Rd.                                        | Apr-04     | \$           | 210,603      |                 |              |                                | Relieve WIBs w/sewer - 62 ft of 12"                                                                                                                          | CONV         |           |                               |
| 4     | 10144980 Rose Run Grit Pit                                  | Apr-04     | \$           | 523,746      |                 |              |                                | Grit Pit                                                                                                                                                     |              |           |                               |
| 5     | 10170040 SSO 570 & 1017 n Madiera                           | Jun-04     | \$           | 3,357,876    |                 |              | SSO 570 & 1017                 | Elim. SSOs 570 & 1017 w/sewer. 3800 ft of 24 - 30 inch                                                                                                       | CONV         | 2 yr      |                               |
| 6     | 10141260 Springdale - Sharonville Sewer                     | Jul-04     | \$           | 2,401,805    |                 |              | SSO 915                        | Contract 3 - Relief sewer to eliminate SSO 915 - 7842 ft of 8-30"                                                                                            | CONV         | 2 yr      |                               |
| 7     | 10141720 Goodman Ave.                                       | Aug-04     | \$           | 1,407,061    |                 |              | SSO 531, 577, 1002, 1005, 1024 | Relief sewer to Elim. SSOs 531, 577, 1002, 1005, & 1024 - 1850 ft of 24", 860 ft of 18", & 800 ft of 15"                                                     | CONV         | 2 yr      |                               |
| 8     | 10145120 Eggleston & Bold Face                              | Sep-04     | \$           | 64,109       |                 |              |                                | HWDW - Tide Gate Replacement                                                                                                                                 | HW           |           |                               |
| 9     | 10170820 Gungahlin/Paddison Rd.                             | Sep-04     | \$           | 3,120,594    |                 |              |                                | Replace existing pipe - Approx. 2800 LF of 12-30"                                                                                                            | CONV         |           |                               |
| 10    | 10141700 Mill Creek WWTP Aux. Air Supply                    | Oct-04     | \$           | 215,096      |                 |              |                                | Fulfillment of Need for Aux. Air Supply to Air Transfer Duct, connecting Incinerator Outlet to Scrubber Inlet to control pos. & neg. pressures in each unit. | WWTP         | NOTE 1    |                               |
| 11    | 10141200 Northbrook SSO 628                                 | Nov-04     | \$           | 1,423,853    |                 |              | SSO 628                        | Phase 2 - Relief sewer to replace sewer near SSO 628 - 3500 ft of 12-15"                                                                                     | CONV         | 2 yr      |                               |
| 12    | 10145400 Samoit Ridge                                       | Nov-04     | \$           | 2,144        |                 |              |                                | Solve WIB problems - 924 ft of 12-24"                                                                                                                        | CONV         |           |                               |
| 13    | 10141220 North College Hill                                 | Dec-04     | \$           | 5,391,761    |                 |              | SSO 530, 531, 567, 577, 634    | Phases 2C & 3 - Relief sewer to eliminate SSOs 530, 531, 567, 577, & 634 - 9960 ft of 12-42"                                                                 | CONV         | 2 yr      |                               |
| 14    | 10141740 St. Clair Sewer                                    | Dec-04     | \$           | 1,454,250    |                 |              |                                | Relief sewer to replace sewer on Elizabeth Ave. - 2638 ft of 8-24"                                                                                           | CONV         |           |                               |
| 15    | 10141560 Mill Creek WWTP Replacement Screens PH1            | Jan-05     | \$           | 2,613,073    |                 |              |                                | Phase 1 - Replace Screens                                                                                                                                    | WWTP         | NOTE 1    |                               |
| 16    | 10145000 Mitchell Ave.                                      | Feb-05     | \$           | 815,918      |                 |              | CSO 29                         | New sewer to eliminate CSO 29 and abandon siphon line under Mill Creek                                                                                       | RI           |           | 0                             |
| 17    | 10141240 Sewer 155 Cooper Creek                             | Mar-05     | \$           | 5,104,573    |                 |              | SSO 620                        | Contract 2B - Relief sewer to eliminate SSO 620 - 7410 ft of 8-36"                                                                                           | CONV         | 2 yr      |                               |
| 18    | 10141300 Camberly Acres PS                                  | Mar-05     | \$           | 321,573      |                 |              |                                | PS Elim w/sewer - 659 ft of 8"                                                                                                                               | CONV         |           |                               |
| 19    | 10170020 SSO 1053 East Fork Ave. Grating                    | Mar-05     | \$           | 3,410,064    |                 |              | SSO 1053 CSO 70, 200           | Phases 2A, 2B, & 2C - Camargo Rd Sewer Improv. Elim. SSO 1053 and CSOs 70, 200 - 7088 ft of 8 - 36 inch                                                      | PS/CONV      | 2 yr      | 0                             |
| 20    | 10141400 Deer Park                                          | Apr-05     | \$           | 2,076,612    |                 |              | SSO & 601                      | Relief sewer to Elim. SSOs 1023, 600, & 601 - 3600 ft of 30" & 570 ft of 21-1"                                                                               | CONV         | 2 yr      |                               |
| 21    | 10144940 Sawyer Point                                       | Apr-05     | \$           | 33,298       |                 |              |                                | sewer, remove diversion dam, and plugging existing dry line conduit                                                                                          |              |           |                               |
| 22    | 10141980 Laboliteaux Ave.                                   | Jun-05     | \$           | 181,725      |                 |              | SSO 597                        | Elim. SSO 597 w/sewer - 559 ft of 15"                                                                                                                        | CONV         | 2 yr      |                               |
| 23    | 10110300 Durango Green - Shadely Lane PS                    | Jul-05     | \$           | 540,150      |                 |              |                                | Elimination of PS w/sewer - 2861 ft of 12-in.                                                                                                                | CONV         |           |                               |
| 24    | 10150000 Polk Run WWTP Ph 2 S/O                             | Sep-05     | \$           | 11,083,351   |                 |              |                                | WWTP Optim. - Phases 2                                                                                                                                       | Optimization | NOTE 1    |                               |
| 25    | 10150240 Maple Ave.                                         | Sep-05     | \$           | 233,351      |                 |              |                                | Lowland Supplemental Agreement                                                                                                                               |              |           |                               |
| 26    | 10144920 Harrison & State Ave. West 4                       | Oct-05     | \$           | 171,990      |                 |              | CSO 4                          | HWDW Protection                                                                                                                                              | HW           |           |                               |
| 27    | 10145020 Montana Ave.                                       | Oct-05     | \$           | 138,392      |                 |              | CSO 89                         | New sewer and building connections to eliminate CSO 89                                                                                                       | SEP          |           | 0.05                          |
| 28    | 10141980 408 Elldi Ave.                                     | Nov-05     | \$           | 130,892      |                 |              | SSO 572                        | Relief sewer to Elim. SSO 572 - 203 ft of 16"                                                                                                                | CONV         | 2 yr      |                               |
| 29    | 10145060 Eastern Ave. (Collins to Bayou)                    | Nov-05     | \$           | 451,318      |                 |              |                                | Phase 2 - Express Sewer to allow for development and conveyance of wet weather flows                                                                         | CONV         |           |                               |
| 30    | 10170940 Stewart Rd. East Regulator                         | Nov-05     | \$           | 412,420      |                 |              | CSO 557                        | Completed, CIP 2002-05 Full Separation - Elimination CD Exhibit 1                                                                                            | FS           |           | 0.0                           |
| 31    | 10141360 Garden Hills PS                                    | Dec-05     | \$           | 1,085,355    |                 |              |                                | PS Elim w/sewer - 4068 ft of 15 & 16" sewer                                                                                                                  | CONV         |           |                               |
| 32    | 10141620 Mill Creek WWTP Solids Mgmt Centrifuge Procurement | Dec-05     | \$           | 2,616,020    |                 |              |                                | Solids Management Program Centrifuge Procurement - Cost in WWTP Optimization                                                                                 | WWTP         | NOTE 1    |                               |
| 33    | 10144960 Harrison & State Ave. West 3                       | Dec-05     | \$           | 325,357      |                 |              | CSO 3                          | HWDW Protection                                                                                                                                              | HW           |           |                               |
| 34    | PROJECTS IN CLOSEOUT                                        |            |              |              |                 |              |                                |                                                                                                                                                              |              |           |                               |
| 35    | 10141760 Mill Creek WWTP Raw Sewage Pumps                   | Dec-05     | \$           | 93,831,813   | \$              | 18,883,454   |                                | Replace depleted wastewater Pumping System                                                                                                                   | WWTP         | NOTE 1    |                               |
| 36    | 10120400 Arrow St. WWTP Elimination & North Bend Crossing   | Jan-06     | \$           | 3,153,931    | \$              | 884,295      |                                | PS Elim & WWTP Elim. w/sewer - 6108 ft of 8-12"                                                                                                              | CONV         |           |                               |
| 37    | 10141640 Mill Creek WWTP Solids Mgmt Centrifuge Install.    | Feb-06     | \$           | 1,371,453    | \$              | 26,412       |                                | Solids Management Program Centrifuge Installation                                                                                                            | WWTP         | NOTE 1    |                               |
| 38    | 10144900 Ludlow Run                                         | Mar-06     | \$           | 10,300,467   | \$              | -            | CSO 151                        | Collector Upgrade CIP 83-10 Exhibit 1                                                                                                                        | CONV         |           | 16.8                          |
| 39    | 10145240 Estate Ave.                                        | Jul-08     | \$           | 2,615,592    | \$              | 480,658      |                                | Flood Remediation Sewer Estate Ave. Overflow                                                                                                                 |              |           |                               |
| 40    | 10145140 Ghaudan Sewer                                      | Sep-08     | \$           | 90,636       | \$              | 76,915       |                                | Removal of process flow from combined sewer to interceptor                                                                                                   |              |           |                               |
| 41    | 10170060 Mainmont SSO Elimination 679A, 679B & 680          | Sep-08     | \$           | 8,271,513    | \$              | 808,802      | SSO & 680                      | Elim. of SSOs 679A, 679B, & 680 w/sewer. 5600 ft of 36 inch & 2000 ft of 8-21 inch                                                                           | CONV         | 2 yr      |                               |

# ATTACHMENT 1B

| INDEX                                               | Project Completion | Actual                                  | Sunk Costs<br>2008 Dollars | Remaining Costs<br>2008 Dollars | CSO SSO Identifier | Description / Design<br>(NOTE4)                                                                                                      | Technology   | Plan CAPP | Plan Remaining CSO<br>(MG/year) |
|-----------------------------------------------------|--------------------|-----------------------------------------|----------------------------|---------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|---------------------------------|
|                                                     |                    |                                         |                            |                                 |                    |                                                                                                                                      |              |           |                                 |
| 42                                                  | 10171420           | Archer St. Div Dam, HDW                 | \$ 244,636                 | \$ -                            | CSO 86             | HW/DW Protection                                                                                                                     | HW           |           |                                 |
| 43                                                  | 10171820           | Beechmont Sluice Gate Rehabilitation    | \$ 1,753,157               | \$ 226,600                      |                    | Phase 2 - Replace existing FM - 3000 ft of 16" FM                                                                                    | WWTP         |           |                                 |
| 44                                                  | 10141500           | Pleasant Run PS                         | \$ 6,332,251               | \$ 483,377                      | PSO 851            | Elim. PSO 851 w/Sewer - 1745 ft of 12"                                                                                               | FM           | 2 yr      |                                 |
| 45                                                  | 10170800           | Berkley Woods PS                        | \$ 198,244                 | \$ 123,747                      |                    | PS Elim. w/Sewer - 1072 ft of 12"                                                                                                    | CONV         |           |                                 |
| 46                                                  | 10120340           | Streamwood Pump Station                 | \$ 270,665                 | \$ 96,942                       |                    |                                                                                                                                      | CONV         |           |                                 |
| 47                                                  | 10141380           | N. Bend Rd. Connecticut Sewer           | \$ 908,577                 | \$ 260,075                      | SSO 222            | Relief sewer to Elim. SSO 222 - 1821 ft of 12-21"                                                                                    | CONV         | 2 yr      |                                 |
| 48                                                  | 10141920           | SSO 700 CEHRS Treatment Facility        | \$ 12,730,053              | \$ 1,500,406                    | SSO 700            | CEHRS Treatment Facility (Performance in 41180)                                                                                      | CEHRS        |           |                                 |
| 49                                                  | 10170840           | Johnson Rd. PS                          | \$ 605,979                 | \$ 253,036                      | SSO 574            | Phase 2 Elim. of P.S. w/Sewer - 834 ft of 30"                                                                                        | CONV         | 2 yr      |                                 |
| 50                                                  | 10142000           | W. Branch Mill Creek SSO 574            | \$ 444,930                 | \$ 340,792                      | PSO                | Elim. SSO 574 w/Sewer - 950 ft of 15"                                                                                                | CONV         | 2 yr      |                                 |
| 51                                                  | 10141420           | Centurion Estates PS                    | \$ 385,144                 | \$ 307,478                      |                    | PS Elim. w/Sewer - 1570 ft of 12"                                                                                                    | CONV         | 2 yr      |                                 |
| 52                                                  | 10141600           | Mill Creek WWTP Replacement Screens Ph2 | \$ 2,919,250               | \$ 701,430                      |                    | Phase II - Replace Screens                                                                                                           | WWTP         | NOTE 1    |                                 |
| 53                                                  | 10141340           | Greenridge PS                           | \$ 580,614                 | \$ 87,582                       |                    | PS and 1000 ft of 12" FM                                                                                                             | PSU/FM       |           |                                 |
| 54                                                  | 10150011           | Polk Run WWTP PS Elimination Sewer Ph3A | \$ 522,457                 | \$ 145,486                      |                    | Polk Run WWTP PS Elimination Sewer Ph3A                                                                                              | Optimization | NOTE 1    |                                 |
| 55                                                  | 10145200           | Butler St.                              | \$ 94,432                  | \$ -                            | CSO 450            | Separation sewer to aid in elimination of CSO 450                                                                                    | PS           |           | 0.0                             |
| 56                                                  | 10172200           | Broadview Dr./Country Club, SEP         | \$ 1,096,035               | \$ 425,547                      | PSO 790, 798       | Partial Separation<br>Relief sewer to Elim. Marview PS (900 ft of 6") & New PS/FM to Replace Arrowhead PS (245 ft of 4")             | PS           |           |                                 |
| 57                                                  | 10141780           | Arrowhead Ct. PS & Marview Terrace PS   | \$ 657,361                 | \$ 131,280                      | CSO 437            | Partial Separation Phase 3 CIP 98-91 - 2006 Construction (CD Exhibit 1)                                                              | PSU/CONV     | 2 yr      |                                 |
| 58                                                  | 10145040           | West 3rd St. Ph3 CSO 437                | \$ 301,714                 | \$ 54,989                       |                    | Parallel section of Wulff Run Interceptor - 200 ft of 24"                                                                            | PS           |           | 0.2                             |
| 59                                                  | 10130420           | Wulff Run Rd.                           | \$ 94,877                  | \$ 57,510                       | CSO 487            | Real Time Control Project to retain water in CSO with inflatable dam                                                                 | CONV         |           | In 43040<br>NOTE 5              |
| 60                                                  | 10145220           | Ross Run CSO 487 Twn Outfall            | \$ 3,658,803               | \$ 832,875                      | CSO 487            | (CSO annual reduction of approximately 250 MG/year)                                                                                  | RTC          |           |                                 |
| 61                                                  | 10145100           | Ross Run                                | \$ 1,614,452               | \$ 343,174                      | CSO 487            | Aid in separation of existing combined sewer                                                                                         | SEP          |           | In 45220                        |
| 62                                                  | 10160000           | Sycamore WWTP Ph 1&2                    | \$ 26,586,214              | \$ 3,035,574                    | SSO 1052           | Sycamore WWTP Upgrade - 50 MGD, Phase 1 and 2                                                                                        | Optimization | NOTE 1    |                                 |
| 63                                                  | 10131200           | Mt. St. Joseph Sewer Replacement        | \$ 511,347                 | \$ 519,479                      | CSO 406            | Mount St. Joseph Sewer Replacement                                                                                                   | PS           |           | In 30780                        |
| 64                                                  | 10120380           | Hengehold 4th & Yates 3rd PSE           | \$ 703,189                 | \$ 397,985                      | PSO 774, 783       | PS Elim. w/Sewer - 2706 ft of 12"                                                                                                    | CONV         | 2 yr      |                                 |
| 65                                                  | 10141539           | McGrew Ave. PSU                         | \$ 304,233                 | \$ 5,020                        |                    | McGrew Ave. PS Upgrade                                                                                                               | PSU          |           |                                 |
| 66                                                  | 10120360           | Pebble Creek WWTP                       | \$ 636,541                 | \$ 647,905                      |                    | WWTP replaced w/PS & FM                                                                                                              | WWTP Elim.   |           |                                 |
| 67                                                  | 10142440           | 7801 Production Dr. Grailing            | \$ 122,447                 | \$ 104,550                      | CSO 191            | Regulator Improvements -0.20 cfs                                                                                                     | RI           |           | 0.2                             |
| 68                                                  | 10172090           | Kenwood Rd. PSU                         | \$ 757,102                 | \$ 1,375,273                    |                    | Upgrade of Existing Kenwood PS No. 724                                                                                               | PSU          |           |                                 |
| 69                                                  | 10150012           | Polk Run WWTP Expansion Ph3B            | \$ 1,188,153               | \$ 938,980                      | PSO 789            | Polk Run WWTP Expansion Ph3B                                                                                                         | Optimization | NOTE 1    |                                 |
| 70                                                  | 10141440           | Millbrook 1 PSU                         | \$ 402,371                 | \$ 302,581                      | PSO 852            | PS and 600 ft of 6" FM - PS Upgrade                                                                                                  | PSU/FM       | 2 yr      |                                 |
| 71                                                  | 10170560           | Woodruff Rd. @ 8 Mile/Grainey Acres PSU | \$ 630,061                 | \$ 371,610                      |                    | 1.2 MGD, 600 ft of 6" FM - PS Upgrade                                                                                                | PSU/FM       | 2 yr      |                                 |
| 72                                                  | 10141520           | Arrowood PSE                            | \$ 425,199                 | \$ 613,609                      | PSO 861            | Eliminate PSO 861                                                                                                                    | CONV         | 2 yr      |                                 |
| <b>REMAINING PHASE 1 PROJECTS TO BE CONSTRUCTED</b> |                    |                                         |                            |                                 |                    |                                                                                                                                      |              |           |                                 |
| 73                                                  | 10145280           | Michell Ave. RTC                        | \$ 114,204,002             | \$ 807,435,016                  | CSO 482            | Real Time Control Project to retain water in CSO with inflatable dam                                                                 | RTC          |           | In 45380<br>NOTE 5              |
| 74                                                  | 10145300           | Badgley Run RTC                         | \$ 305,654                 | \$ 2,617,058                    | CSO 125            | Real Time Control Project to retain water in CSO with inflatable dam                                                                 | RTC          |           | In 43820<br>NOTE 5              |
| 75                                                  | 10145180           | Mill Creek Interceptor Division Chamber | \$ 1,223,735               | \$ 385,128                      | CSO 181            | Bloody Run & Spring Grove Ave. - Phase 2 - REG                                                                                       | RI           |           | In 42700                        |
| 76                                                  | 10145320           | Lick Run RTC                            | \$ 76,572                  | \$ 1,378,782                    | CSO 5              | Real Time Control Project to retain water in CSO                                                                                     | RTC          |           | In 45660<br>NOTE 5              |
| 77                                                  | 10130560           | Muddy Creek WWTP Secondary Enhancement  | \$ 5,734,429               | \$ 5,288,057                    |                    | (CSO annual reduction of approximately 200 MG/year)                                                                                  | WWTP         | NOTE 1    |                                 |
| 78                                                  | 10130565           | Muddy Creek WWTP Effluent Pump Upgrade  | \$ 608,071                 | \$ 2,801,053                    |                    | W-102 - WWTP Optimization Secondary Enhancement (98-09),<br>W-102 - WWTP Optimization Raw Sewage Pump Upgrade, Effluent Pump Upgrade | WWTP         | NOTE 1    |                                 |
| 79                                                  | 10170780           | LM WWTP Activated Sludge Thickening     | \$ 2,429,843               | \$ 3,346,832                    | SSO 1012           | E-503 - Activated sludge thickening (CIP 2005-31)                                                                                    | WWTP         | NOTE 1    |                                 |
| 80                                                  | 10130680           | Harwin Lane                             | \$ 117,431                 | \$ 1,048,265                    |                    | Replace sewer - 2000 ft of 12"                                                                                                       | CONV         | 2 yr      |                                 |
| 81                                                  | 10141540           | Winton and Sherwood Ph1 PS              | \$ 338,400                 | \$ 2,060,894                    | PSO 805            | Phase 1 - New PS, gravity sewer from Winton 2 to Winton 1, and New FM in Winton Rd                                                   | CONV         | 2 yr      |                                 |
| 82                                                  | 10141560           | Winton and Sherwood Ph2 PS              | \$ 297,485                 | \$ 1,362,776                    | PSO 805            | Phase II - New sewer to Elim. Sherwood PS - 2300 ft of sewer & 4730 ft of FM                                                         | CONV         | 2 yr      |                                 |
| 83                                                  | 10160005           | Sycamore WWTP Ph 3                      | \$ 770,557                 | \$ 8,114,644                    | SSO 1052           | Sycamore WWTP Upgrade - 50 MGD, Phase 3                                                                                              | Optimization | NOTE 1    |                                 |
| 84                                                  | 10160010           | Sycamore WWTP Ph 4                      | \$ 216,253                 | \$ 2,550,814                    | SSO 1052           | Sycamore WWTP Upgrade - 50 MGD, Phase 4                                                                                              | Optimization | NOTE 1    |                                 |



# ATTACHMENT 1B

| INDEX | PROJECT                                             | COMPLETION                                       | Sunk Costs    |                | Remaining Costs |               | CSO SSO Identifier                                                                                                                                             | Description / Design (NOTE4)                                                                                                                                                                                                          | Technology | Plan CAPP | Plan Remaining CSO (MGS/year) |
|-------|-----------------------------------------------------|--------------------------------------------------|---------------|----------------|-----------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|-------------------------------|
|       |                                                     |                                                  | 2006 Dollars  | 2006 Dollars   | 2006 Dollars    | 2006 Dollars  |                                                                                                                                                                |                                                                                                                                                                                                                                       |            |           |                               |
| 86    | 10180600                                            | Mill Creek WWTP TPE Incinerator                  | \$ 35,021,878 | \$ 38,057,036  |                 |               | PSO                                                                                                                                                            | Mill Creek WWTP TPE Incinerator                                                                                                                                                                                                       | WWTP       | NOTE 1    |                               |
| 87    | 10120420                                            | Diamond Oaks Windmere 3rd & Regency Ridge PS     | \$ 306,882    | \$ 1,336,137   |                 |               | PSO                                                                                                                                                            | PS Elm Weir - 3200 ft of P                                                                                                                                                                                                            | CONV       | 2 yr      |                               |
| 88    | 10170081                                            | Montgomery Rd & Lester Ave                       | \$ 57,618     | \$ 984,982     |                 |               | CSO 455                                                                                                                                                        | Montgomery Rd & Lester Ave<br>2145 feet of 27 to 36" combined sewer and 2050 feet of 36" storm sewer.<br>Catch basins along the storm sewer will be diverted to the storm sewer,<br>allowing the combined sewer to be decommissioned. | PS         |           | In 44440                      |
| 89    | 10144441                                            | 1852 Columbia Plow Sewer                         | \$ 242,189    | \$ 1,744,316   |                 |               | PSO 887, 891                                                                                                                                                   | C-402 - Mill Creek Grit Removal Improvements (CIP 2006-30)                                                                                                                                                                            | WWTP       | NOTE 1    |                               |
| 90    | 10144880                                            | Mill Creek WWTP Grit Removal                     | \$ 687,744    | \$ 38,263,529  |                 |               |                                                                                                                                                                | Eliminate Towers East PS & Upgrade Ponderosa PS                                                                                                                                                                                       | WWTP       |           |                               |
| 91    | 10120460                                            | Towers East Pump Station                         | \$ 20,305     | \$ 2,183,245   |                 |               |                                                                                                                                                                | C-402 - Secondary Treatment Enhancements                                                                                                                                                                                              | PSE/PSU    | 2 yr      |                               |
| 92    | 10144884                                            | Mill Creek WWTP Secondary Treatment Enhancements | \$ 985,315    | \$ 40,280,301  |                 |               |                                                                                                                                                                | E-501 - Construct Real Time Control Chamber at Little Miami WWTP.                                                                                                                                                                     | WWTP       | NOTE 1    |                               |
| 93    | 10171960 (A)                                        | Eastern Delta Ave. Ph1                           | \$ 4,552,591  | \$ 39,127,126  |                 |               | CSO 469                                                                                                                                                        | Extend Interceptors to 2 new CSOs (469A & 469B)                                                                                                                                                                                       | CONV       |           | 75.9                          |
| 94    | 10171920 (A)                                        | Eastern Delta Ave. Ph2                           | \$ 1,138,074  | \$ 18,594,985  |                 |               | CSO 467A, 467B, 467C, 467D, 467E, 467F, 467G, 467H, 467I, 467J, 467K, 467L, 467M, 467N, 467O, 467P, 467Q, 467R, 467S, 467T, 467U, 467V, 467W, 467X, 467Y, 467Z | Separation of area tributary to CSO 467A and 657' construction of new flow regulator and flap gate (HMDGW) structures at CSOs 467, 468, and 469.                                                                                      | CONV       |           | 47.5                          |
| 95    | 10171900 (A)                                        | Eastern Delta Ave. Ph3                           | \$ 1,009,542  | \$ 14,249,639  |                 |               | PSO 773                                                                                                                                                        | Upgrade PS                                                                                                                                                                                                                            | PSU        | 2 yr      | 0.1                           |
| 96    | 10131220                                            | Glenview PS at Wisselman                         | \$ -          | \$ 760,302     |                 |               | CSO 180                                                                                                                                                        | Full Separation - CIP 94-25 and Regulator Improvements - 7.7 cfs                                                                                                                                                                      | FS         |           | 0.0                           |
| 97    | 10142240                                            | Blue Rock Rd. Sewer Separation                   | \$ 2,931      | \$ 1,897,181   |                 |               | CSO 471                                                                                                                                                        | Regulator Improvements - 3.3 cfs Permitted on operational changes at Four Mile P.S.                                                                                                                                                   | RI         |           | 0.0                           |
| 98    | 10171840 (B)                                        | CSO 471 Grandin Rd. Rd. Improvements             | \$ 585        | \$ 288,093     |                 |               | CSO 470                                                                                                                                                        | Partial Separation & Regulator Improvements Construct storm sewer from Mill Creek to Windmere Rd.                                                                                                                                     | PS         |           | 0.0                           |
| 99    | 10171860 (B)                                        | CSO 470 Eastern Ave. Sewer Separation            | \$ 309        | \$ 1,607,283   |                 |               |                                                                                                                                                                | W-102 Add. Add. to Windmere Rd. Press-B&H Proj. DR-2                                                                                                                                                                                  | WWTP       | NOTE 1    |                               |
| 100   | 10131180 (C)                                        | Muddy Creek WWTP New Belt Filter Press           | \$ -          | \$ 1,248,000   |                 |               |                                                                                                                                                                | Muddy Creek WWTP Grit Replacement                                                                                                                                                                                                     | CONV       | NOTE 1    |                               |
| 101   | 10131240 (C)                                        | Muddy Creek WWTP Grit Replacement                | \$ -          | \$ 4,470,000   |                 |               |                                                                                                                                                                | Replace existing #181 - 6500 ft of 21-30"                                                                                                                                                                                             | WWTP       | NOTE 1    |                               |
| 102   | 10142020                                            | Daily Rd. to Completion Rd.                      | \$ 903,198    | \$ 13,742,834  |                 |               |                                                                                                                                                                | Additional Primary Sludge Pumping                                                                                                                                                                                                     | WWTP       | NOTE 1    |                               |
| 103   | 10145500 (D)                                        | Mill Creek WWTP Outfall Improvements             | \$ -          | \$ 15,183,200  |                 |               |                                                                                                                                                                | Additional Primary Sludge Pumping                                                                                                                                                                                                     | WWTP       | NOTE 1    |                               |
| 104   | 10145560 (D)                                        | Mill Creek WWTP Secondary Bypass Weir            | \$ -          | \$ 137,000     |                 |               |                                                                                                                                                                | Additional Primary Sludge Pumping                                                                                                                                                                                                     | WWTP       | NOTE 1    |                               |
| 105   | 10145580 (D)                                        | Mill Creek WWTP Added Sludge Pumping             | \$ -          | \$ 1,315,000   |                 |               |                                                                                                                                                                | Partial Separation Community Priority                                                                                                                                                                                                 | PS         |           | 3.0                           |
| 106   | 10143920 (E)                                        | CSO 184 High Point Sewer Separation              | \$ 13,317     | \$ 4,105,548   |                 |               | CSO 195                                                                                                                                                        | Partial Separation Community Priority                                                                                                                                                                                                 | PS         |           | 3.7                           |
| 107   | 10143940 (E)                                        | CSO 185 Westwood Northern Sewer Separation       | \$ 13,170     | \$ 2,808,123   |                 |               | CSO 525                                                                                                                                                        | Partial Separation Community Priority                                                                                                                                                                                                 | PS         |           | 2.5                           |
| 108   | 10143960 (E)                                        | CSO 525 Mt. Airy Grating Sewer Separation        | \$ 8,619      | \$ 2,407,688   |                 |               | CSO 522                                                                                                                                                        | EHRT - 108 MGD Community Priority                                                                                                                                                                                                     | EHRT       |           | 64.7                          |
| 109   | 10130740                                            | Werk & Westbourne Grating                        | \$ 374,405    | \$ 28,259,984  |                 |               | SSO 645, 225-A                                                                                                                                                 | New parallel sewer to follow original alignment - 1700 ft of 15"                                                                                                                                                                      | CONV       | 2 yr      |                               |
| 110   | 10141090 (F)                                        | Ludlow and Lafayette Parallel Sewer              | \$ -          | \$ 865,920     |                 |               | CSO 179                                                                                                                                                        | Partial Separation                                                                                                                                                                                                                    | PS         |           | 0.4                           |
| 111   | 10143220 (F)                                        | Scarlet Oaks Regulator                           | \$ -          | \$ 1,306,000   |                 |               | 2, 3, 4, 5, 6, CSO 1000                                                                                                                                        | Gray LMC Default Project - Tunnel and EHRT to remove a total of 1.6 billion gallons of overflow.                                                                                                                                      | TuneEHRT   |           | 451                           |
| 112   | 10145660                                            | Gray LMC Default Project                         | \$ -          | \$ 244,342,000 |                 |               | CSO 1000                                                                                                                                                       | (R1C Projects remove an additional 0.41 billion gallons - 45220, 45280, 45300, 45320 - A total of 2 billion gallons of overflow removed.)                                                                                             |            |           |                               |
| 113   |                                                     | Allowances                                       | \$ 58,038,261 | \$ 252,000,000 |                 |               | SSO 228                                                                                                                                                        | Replace existing pipe - Approx. 4400 LF of 15-24"                                                                                                                                                                                     | CONV       | 2 yr      |                               |
| 114   | 10170080 (G)                                        | SSO 1000 Elimination                             | \$ -          | \$ 1,815,294   |                 |               | SSO 54                                                                                                                                                         | Replace existing pipe - Approx. 3100 LF of 15-18"                                                                                                                                                                                     | CONV       | 2 yr      |                               |
| 115   | 10170100 (G)                                        | SSO 228 Elimination                              | \$ -          | \$ 1,381,001   |                 |               | CSO 187                                                                                                                                                        | Regulator Improvements-10.0 cfs CAPP P-LM-LIT-CAPP-C-064                                                                                                                                                                              | RI         |           | 0.1                           |
| 116   | 10171590 (G)                                        | CSO 54 Elimination                               | \$ -          | \$ 277,344     |                 |               | CSO 551                                                                                                                                                        | No modification-Int 0.50 cfs 0.0 MGD to UD Channel HRT                                                                                                                                                                                | RI         |           | 0.0                           |
| 117   | 10171620 (G)                                        | CSO 187 Improvements                             | \$ -          | \$ 277,345     |                 |               | CSO 553                                                                                                                                                        | Sewer Separation                                                                                                                                                                                                                      | SEP        |           | 13.1                          |
| 118   | 10171740 (G)                                        | CSO 551 Sewer Separation                         | \$ -          | \$ 3,781,924   |                 |               |                                                                                                                                                                | Sewer Separation                                                                                                                                                                                                                      | SEP        |           | 5.4                           |
| 119   | 10171780 (G)                                        | CSO 553 Sewer Separation                         | \$ -          | \$ 1,928,581   |                 |               |                                                                                                                                                                |                                                                                                                                                                                                                                       |            |           |                               |
| 120   | PHASE 1 PROJECTS/BUNDLES - PLANNING and DESIGN ONLY |                                                  |               |                | \$ 3,344,857    | \$ 57,119,240 | CSO 135                                                                                                                                                        | Regulator Improvements - 2.4 cfs                                                                                                                                                                                                      | RI         |           |                               |
| 121   | 10171540                                            | CSO 135 Elimination                              | \$ -          | \$ 33,629      |                 |               | CSO 43                                                                                                                                                         | Regulator Improvements - 2.8 cfs                                                                                                                                                                                                      | RI         |           |                               |
| 122   | 10171560                                            | CSO 43 Elimination                               | \$ -          | \$ 33,185      |                 |               | CSO 170                                                                                                                                                        | Regulator Improvement - 3.1 cfs                                                                                                                                                                                                       | RI         |           |                               |
| 123   | 10171600                                            | CSO 170 Elimination                              | \$ -          | \$ 34,684      |                 |               |                                                                                                                                                                |                                                                                                                                                                                                                                       |            |           |                               |

# ATTACHMENT 1B

| INDEX | Project Completion | Sunk Costs   | Remaining Costs | CSO SSO Identifier                 | Description / Design (NOTE4)                                                                                                                                                        | Technology | Plan CAPP | Plan Remaining CSO (MG/year) |
|-------|--------------------|--------------|-----------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|------------------------------|
|       | Actual             | 2006 Dollars | 2006 Dollars    |                                    |                                                                                                                                                                                     |            |           |                              |
| 124   | 10171640           |              | \$ 2,346,676    | CSO 214                            | Storage - 2.00 MG                                                                                                                                                                   | STO        |           |                              |
| 125   | 10171660           |              | \$ 34,275       | CSO 500                            | Regulator Improvement - 1.5 cfs. See E-500                                                                                                                                          | RI         |           |                              |
| 126   | 10171680           |              | \$ 33,971       | CSO 501                            | Regulator Improvement - 0.1cfs. See E-500                                                                                                                                           | RI         |           |                              |
| 127   | 10171700           |              | \$ 33,731       | CSO 549                            | Regulator Improvement - 5.0 cfs. See E-500                                                                                                                                          | RI         |           |                              |
| 128   | 10171720           |              | \$ 33,525       | CSO 550                            | Regulator Improvement - 0.4 cfs. See E-500                                                                                                                                          | RI         |           |                              |
| 129   | 10171760           |              | \$ 35,234       | CSO 552                            | Regulator Improvement - 19.4 cfs                                                                                                                                                    | RI         |           |                              |
| 130   | 10171800           |              | \$ 2,347,477    |                                    | E-500 - EHRT - 40-MGD - Serves CSOs 170, 549, 550, 501 & 500 (NOTE 2)                                                                                                               | EHRT       |           |                              |
| 131   | 10170762           |              | \$ 542,668      |                                    | E-503 - Four Mile Pump Station Rec Proj - PS-1                                                                                                                                      | WWTP       | NOTE 1    |                              |
| 132   | 10170763           |              | \$ 467,842      |                                    | E-503 - Modify LMR Pump Station Rec Proj - PS-5                                                                                                                                     | WWTP       | NOTE 1    |                              |
| 133   | 10170764           |              | \$ 1,185,142    |                                    | E-503 - Grit Collection Proj - SG-1                                                                                                                                                 | WWTP       | NOTE 1    |                              |
| 134   | 10170765           |              | \$ 280,006      |                                    | E-503 - Four Mile Pump Station to Screen Building Rec Proj - H-1                                                                                                                    | WWTP       | NOTE 1    |                              |
| 135   | 10170766           |              | \$ 231,668      |                                    | E-503 - Primary to Secondary Conveyance Rec Proj - H-2                                                                                                                              | WWTP       | NOTE 1    |                              |
| 136   | 10170767           |              | \$ 899,269      |                                    | E-503 - Chemical Enhance Primary Rec Proj - PT-3                                                                                                                                    | WWTP       | NOTE 1    |                              |
| 137   | 10170768           |              | \$ 1,372,276    |                                    | E-503 - Modification to Secondary Treatment Rec Proj - ST-2                                                                                                                         | WWTP       | NOTE 1    |                              |
| 138   | 10170769           |              | \$ 541,084      |                                    | E-503 - Upgrade Chemical Feed Sys Storage - DZ                                                                                                                                      | WWTP       | NOTE 1    |                              |
| 139   | 10170793           |              | \$ 64,639       |                                    | E-503 - Improvement to Sludge Receiving Facility Rec Proj - DR-6                                                                                                                    | WWTP       | NOTE 1    |                              |
| 140   | 10170794           |              | \$ 1,074,223    |                                    | E-503 - Dual Feed / Standby Power Rec Proj - E-1                                                                                                                                    | WWTP       | NOTE 1    |                              |
| 141   | 10172020           |              | \$ 5,286,355    |                                    | E-505 - Wet Weather Pump Station with Screening 150 MGD to Auxiliary Outfall                                                                                                        | WWTP       | NOTE 1    |                              |
| 142   | 10172260           |              | \$ 125,000      |                                    | Four Mile PS - Dry Weather Pumps - B&N Rec. Proj. PS-1                                                                                                                              | WWTP       | NOTE 1    |                              |
| 143   | 10140400           |              | \$ 361,514      | SSO 1045, 1010                     | Replace collector following original alignment - 7968 ft of 12-24"                                                                                                                  | CONV       |           |                              |
| 144   | 10142280           |              | \$ 36,201       | CSO 226                            | Regulator Improvement-6 cfs. Combine with implementation of green infrastructure as redevelopment, renovation, and routine maintenance costs to achieve CSO control to achieve 85%. | RI         |           |                              |
| 145   | 10142300           |              | \$ 36,066       | CSO 559                            | Regulator Improvements-14.0 cfs. Green potential greater than storage need.                                                                                                         | RI         |           |                              |
| 146   | 10142320           |              | \$ 33,680       | CSO 515                            | Regulator Improvements-0.7 cfs                                                                                                                                                      | RI         |           |                              |
| 147   | 10142340           |              | \$ 33,680       | CSO 516                            | Regulator Improvements-0.11 cfs                                                                                                                                                     | RI         |           |                              |
| 148   | 10142360           |              | \$ 36,066       | CSO 538                            | Regulator Improvements-0.31 cfs                                                                                                                                                     | RI         |           |                              |
| 149   | 10142380           |              | \$ 35,995       | CSO 539                            | Regulator Improvements-5.0 cfs                                                                                                                                                      | RI         |           |                              |
| 150   | 10142400           |              | \$ 35,994       | CSO 562                            | Regulator Improvements-3.08 cfs                                                                                                                                                     | RI         |           |                              |
| 151   | 10130000           | \$ 42,512    | \$ 14,060,624   | 703, 702, 692, SSO 697 675-A, 1061 | Storage & Conveyance Tunnel unloads Muddy Creek PS, Eliminating SSOs 692 & 697, provides CSO control for 518, 404, 405 and 406 - 25 ft diameter, 8500 ft long, 35 MGD pumps at WWTP | TUNNEL     |           |                              |
| 152   | 10130160           | \$ 4,043     | \$ 1,511,582    | SSO 692, 697, SSO 675-A            | Elim. PSO - Increase capacity & convey to Hillside Relief Tunnel - 25 MGD pumps, 12" FM for DMF, 36" FM for WWF (associated with 30000)                                             | PSU/FM     |           |                              |
| 153   | 10130400           | \$ 3,725     | \$ 53,862       | SSO 702                            | Rapid Run/Bender Rd. Interceptor directly into New Tunnel - 800 ft of 36"                                                                                                           | CONV       |           |                              |
| 154   | 10131020           | \$ 787       | \$ 34,470       | CSO 402                            | Regulator Improvement - 13.3 cfs (dependent on 30000, 30160, 31120)                                                                                                                 | RI         |           |                              |
| 155   | 10131040           | \$ 735       | \$ 34,648       | CSO 403                            | Regulator Improvement - 7.10 cfs (dependent on 30000, 30160, 31120)                                                                                                                 | RI         |           |                              |
| 156   | 10131060           | \$ 704       | \$ 35,948       | CSO 404                            | Regulator Improvement - 26.9 cfs (dependent on 30000, 30160, 31120)                                                                                                                 | RI         |           |                              |
| 157   | 10131080           | \$ 630       | \$ 35,034       | CSO 405                            | Regulator Improvement - 6.20 cfs (dependent on 30000, 30160, 31120)                                                                                                                 | RI         |           |                              |
| 158   | 10131100           | \$ 5,611     | \$ 35,178       | CSO 406                            | Regulator Improvement -15.4 cfs (dependent on 30000, 30160, 31120)                                                                                                                  | RI         |           |                              |
| 159   | 10131120           | \$ 16,349    | \$ 564,187      | CSO 404, 405, CSO 406              | Convey Flow from CSO 404 to WWTP - 4000' - 60" sized for 85% control for CSOs 404, 405 and 406 (dependent on 3000, 30160)                                                           | CONV       |           |                              |
| 160   | 10140000           |              | \$ 450,970      | SSO 1048                           | Replace collector following original alignment - 4115 ft of 16-27" Tunnel 375 ft of 18-24"                                                                                          | CONV       |           |                              |

# ATTACHMENT 1B

| INDEX |               | Project Completion                                   | Sunk Costs<br>2008 Dollars | Remaining Costs<br>2008 Dollars | CSO SSO Identifier                     | Description / Design<br>(NOTE 4)                                                                           | Technology | Plan CAPP | Plan Remaining CSO<br>(MO/year) |
|-------|---------------|------------------------------------------------------|----------------------------|---------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------|------------|-----------|---------------------------------|
|       |               | Actual                                               |                            |                                 |                                        |                                                                                                            |            |           |                                 |
| 161   | 10140020      | SSO 1048 Conveyance Sewer Phase 2                    |                            | \$ 375,348                      | SSO 1048, 587                          | Replace collector following original alignment - 4256' of 30-36"                                           | CONV       |           |                                 |
| 162   | 10140080      | SSO 587 Conveyance Sewer                             |                            | \$ 275,637                      | SSO 587                                | Replace collector following original alignment - 4235 ft of 15-24"                                         | CONV       |           |                                 |
| 163   | 10140120      | Sharonville/Evendale Trunk to SSO 700                |                            | \$ 4,839,634                    | SSO 1048, 587                          | 24 929 LF of 30-66", Tunnel 6250 LF of 30-78"                                                              | CONV       |           |                                 |
| 164   | 10140480      | Pleasant Run Interceptor Replacement                 |                            | \$ 310,718                      |                                        | W/Bs - Replace collector following original alignment - 4246 ft of 21-24"                                  | CONV       |           |                                 |
| 165   | 10141180      | I-75 & Shepard Ave. SSO 700                          |                            | \$ 9,407,964                    | SSO 700                                | Increase Storage at existing site - Additional 24 MG (NOTE 3)                                              | STOR       |           |                                 |
| 166   | 10142120      | Mill & Vine St. Grating                              |                            | \$ 36,064                       | CSO 512                                | Regulator Improvements-3.25 cfs                                                                            | RI         |           |                                 |
| 167   | 10142200      | Bernard & Reisinger Grating                          |                            | \$ 360,034                      | CSO 513                                | Partial Separation                                                                                         | PS         |           |                                 |
| 168   | 10142220      | Smalley Grating                                      |                            | \$ 193,696                      | CSO 514                                | Partial Separation                                                                                         | PS         |           |                                 |
| 169   | 10130020      | Muddy Creek Interceptor Rehabilitation               |                            | \$ 722                          | SSO 1061<br>CSO 518<br>MH 16006007     | Clean Interceptor - 5000 ft of 36"                                                                         | CLEAN      |           |                                 |
| 170   | 10130040      | CSO 518 Muddy Creek Conveyance Sewer                 |                            | \$ 856,428                      | SSO 1061<br>CSO 518<br>MH 16006007     | Replace section of Muddy Creek Int. - 9000 ft of 36", Provides CSO interception capacity for CSO 518       | CONV       |           |                                 |
| 171   | 10130280      | Addyston PS Elimination                              |                            | \$ 266,998                      | PSO 730,<br>10902003                   | Elim. Addyston P.S. w/gravity along Rte. 50 - 2650' of 36" and two 100' of 24"                             | CONV       |           |                                 |
| 172   | 10130700      | Muddy Creek @ Westbourne EHRT                        |                            | \$ 4,176,408                    | CSO 198                                | EHRT - 126 MGD Community Priority (NOTE 2)                                                                 | EHRT       |           |                                 |
| 173   | 10130720      | CSO 518 Improvements                                 |                            | \$ 33,309                       | CSO 518                                | Regulator Improvement - 27.4 cfs Premised on CAPP Activity ID - 30040, 30000 Community Priority            | RI         |           |                                 |
| 174   | 10130780      | CSO's 223, 408, 410, 541, 654                        | \$ 281,421                 | \$ -                            | 223, 408,<br>CSO 410,<br>541, 654      | CD Exhibit 1 Partial Separation                                                                            | PS         |           |                                 |
| 175   | 10130840      | CSO's 411, 412, 413, 414, 415, 416                   | \$ 208,080                 | \$ 953                          | 411, 412,<br>CSO 413, 414,<br>415, 416 | CD Exhibit 1 Regulator Improvement-3.21 cfs and Relocation Complete Partial Separation - Activity ID 31140 | RIPS       |           |                                 |
| 176   | 10131000      | E. Branch Muddy Ph1 Interceptor                      | \$ 1,239,024               | \$ 103,652                      |                                        | W-103 - CD Exhibit 1 Interceptor Replacement Phase 1                                                       | CONV       |           |                                 |
| 177   | 10131002      | E. Branch Muddy Ph2 Interceptor                      | \$ 432,610                 | \$ 4,783                        |                                        | W-103 - CD Exhibit 1 Interceptor Replacement Phase 2                                                       | CONV       |           |                                 |
| 178   | 10131003      | E. Branch Muddy Ph3-A Pump Station (Changed to AM)   | \$ 861,975                 | \$ -                            |                                        | W-103 - CD Exhibit 1 Interceptor Replacement Phase 3                                                       | CONV       |           |                                 |
| 179   | 10131004      | East Branch Muddy Ph3-B Pump Station (Changed to AM) | \$ 246,841                 | \$ -                            |                                        | East Branch Muddy Ph3-B Pump Station                                                                       | CONV       |           |                                 |
| 180   | 10131006      | East Branch Muddy Interceptor                        |                            | \$ 382,587                      |                                        | W-105 - Interceptor Extension                                                                              | CONV       |           |                                 |
| 181   | 10131140      | E. Branch Ohio Rinterceptor Sewer Separation         |                            | \$ 1,028,053                    | 408, 411,<br>CSO 412, 414,<br>415, 416 | W-104 - Complete Partial Separation in CSOs areas 408, 411, 412, 414, 415, 416                             | PS         |           |                                 |
| 182   | TOTAL PHASE 1 |                                                      |                            | \$ 264,781,000                  | \$ 881,535,710                         |                                                                                                            |            |           |                                 |

- NOTES:
1. PROJECT COMPLETE AND IN SERVICE AT SPECIFIED CAPACITY
  2. FOR ALL PROJECTS WITH EHRT TECHNOLOGY VOLUME SHOWING IS REMAINING UNTREATED OVERFLOW - SEE ATTACHMENT 5.
  3. INFORMATION RELATED TO THIS PROJECT IS PRELIMINARY AND SUBJECT TO CHANGE BASED ON FURTHER STUDY AS SET FORTH IN PARAGRAPH A.3. OF THE WWIP
  4. CAPP DESIGN, ALL CAPP SEWER PROJECTS WILL BE DESIGNED TO MEET THE 10 YEAR DESIGN STORM EVENT. ALL CAPP PUMP STATION AND STORAGE FACILITIES WILL BE DESIGNED TO MEET THE 2 YEAR DESIGN STORM EVENT.
  5. THE 2 AND 10 YEAR DESIGN STORMS ARE SCS TYPE II - 24 HOUR EVENTS.
  6. FOR THESE RTC PROJECTS, THE STATED REDUCTION IN THE TYPICAL YEAR CSO DISCHARGE VOLUME SHALL ALSO BE THE PERFORMANCE CRITERIA FOR THE FACILITY.
  7. PERFORMANCE CRITERIA FOR CSO VOLUMES REMAINING AFTER IMPLEMENTATION OF CSO CONTROLS ARE THE VOLUMES NOT TO BE EXCEEDED AT A PARTICULAR OUTFALL DURING MSDGC'S TYPICAL RAINFALL YEAR (1970).
  8. COMPLIANCE WITH THESE CRITERIA WILL BE EVALUATED BY IMPLEMENTATION OF A POST CONSTRUCTION MONITORING PROGRAM WHICH WILL BE SUBMITTED TO THE REGULATORY AGENCIES FOR REVIEW AND APPROVAL IN ACCORDANCE WITH THE GLOBAL CONSENT DECREE THAT WILL UTILIZE MSDGC'S HYDROLOGIC AND HYDRAULIC MODEL TO NORMALIZE THE RESULTS OF THE POST CONSTRUCTION MONITORING TO THE TYPICAL YEAR.

## Bundle Identifiers

- (A) The Eastern Delta Bundle on Attachment 1A consists of these projects.
- (B) The Lower Little Miami Bundle on Attachment 1A consists of these projects.
- (C) The Muddy Creek WWTP Bundle on Attachment 1A consists of these projects.
- (D) The Mill Creek WWTP Bundle on Attachment 1A consists of these projects.
- (E) The Westwood Northern Bundle on Attachment 1A consists of these projects.
- (F) The North Side Upper Bundle on Attachment 1A consists of these projects.
- (G) The Upper Duck All Bundle on Attachment 1A consists of these projects.



## **Attachment 1C**

### **Original LMCPR**

The Lower Mill Creek Partial Remedy (LMCPR) will be a series of measures constructed during Phase 1 of the WWIP to capture a significant volume of combined sewer overflows in the Lower Mill Creek basin. At the Regulators' direction (November 25, 2008 letter), a LMCPR preferred alternative ("Original LMCPR") was identified by Defendants during a preliminary planning analysis and reported to the Regulators in a Lower Mill Creek Alternatives White Paper, dated February 9, 2009, and provided to Sierra Club.

The Original LMCPR will be sized to provide 85% control for the listed consolidated CSO flows from CSO 009 down to the Lower Mill Creek treatment facility, and includes the following:

- Approximately 7600 feet of 30-foot diameter tunnel from the Mill Creek WWTP to CSO 005- Lick Run;
- Approximately 2000 feet of 7-foot diameter consolidation sewer from CSO 005 to CSO 009;
- The tunnel will store and convey overflows, some connected by consolidation sewer, starting with in the north CSO 009 and including CSO 007, CSO 006, CSO 005, CSO 004, CSO 003, CSO 002, CSO 666, CSO 152, CSO 429 and CSO 428;
- The tunnel will convey flows to an Enhanced High Rate Treatment (EHRT) facility with a capacity to treat 84 MGD, which will be located at or near the Mill Creek WWTP;
- Current Real Time Control projects at CSO 487- Ross Run, CSO 482- Mitchell, and CSO 125-Badgeley will be utilized;
- The currently identified projects will reduce an estimated CSO volume of 2,013 MG/year.

Performance and Design Criteria for the EHRT component of the Original LMCPR are set forth in Attachment 5.

## ATTACHMENT 2

| INDEX |          | Sunk Costs   |              | Remaining Costs |                | CSO SSO Identifier                               | Description / Design (NOTE 4)                                                                                                                                                        | Technology | Plan CAPP | Plan Remaining CSO (MG/year) |
|-------|----------|--------------|--------------|-----------------|----------------|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|------------------------------|
|       |          | 2008 Dollars | 2006 Dollars | 2008 Dollars    | 2006 Dollars   |                                                  |                                                                                                                                                                                      |            |           |                              |
| 185   | 10171540 |              |              |                 | \$ 243,716     | CSO 135 Elimination                              | Regulator Improvements - 2.4 cfs                                                                                                                                                     | RI         |           | 0.0                          |
| 186   | 10171560 |              |              |                 | \$ 244,159     | CSO 43 Elimination                               | Regulator Improvements - 2.8 cfs                                                                                                                                                     | RI         |           | 0.7                          |
| 187   | 10171600 |              |              |                 | \$ 242,681     | CSO 170 Elimination                              | EHRT - Regulator Improvement - 3.1 cfs                                                                                                                                               | RI         |           | in 71800                     |
| 188   | 10171640 |              |              |                 | \$ 14,074,375  | CSO 214 Storage Facility                         | Storage - 2.00 MG                                                                                                                                                                    | STOR       |           | 57.4                         |
| 189   | 10171660 |              |              |                 | \$ 243,089     | CSO 500 Improvements                             | Regulator Improvement - 1.5 cfs. See E-500                                                                                                                                           | RI         |           | in 71800                     |
| 190   | 10171680 |              |              |                 | \$ 243,373     | CSO 501 Improvements                             | Regulator Improvement - 0.1 cfs. See E-500                                                                                                                                           | RI         |           | 0.0                          |
| 191   | 10171700 |              |              |                 | \$ 243,613     | CSO 549 Improvements                             | Regulator Improvement - 5.0 cfs. See E-500                                                                                                                                           | RI         |           | in 71800                     |
| 192   | 10171720 |              |              |                 | \$ 243,820     | CSO 550 Improvements                             | Regulator Improvement - 0.4 cfs. See E-500                                                                                                                                           | RI         |           | in 71800                     |
| 193   | 10171760 |              |              |                 | \$ 242,109     | CSO 552 Improvements                             | Regulator Improvement - 19.4 cfs                                                                                                                                                     | RI         |           | 18.8                         |
| 194   | 10171800 |              |              |                 | \$ 14,541,318  | Upper Duck Creek EHRT Facility                   | E-500 - EHRT - 40-MGD - Serves CSOs 170, 549, 550, 501 & 500 (NOTE 2)                                                                                                                | EHRT       |           | 106.0                        |
| 195   | 10170782 |              |              |                 | \$ 3,617,502   | LM Four Mile Pump Station Upgrade                | E-503 - Four Mile Pump Station Rec Proj - PS-1                                                                                                                                       | WWTP       | NOTE 1    |                              |
| 196   | 10170783 |              |              |                 | \$ 3,172,158   | LMWWTP Pump Station Reconfiguration              | E-503 - Modify LMR Pump Station Rec Proj - PS-5                                                                                                                                      | WWTP       | NOTE 1    |                              |
| 197   | 10170784 |              |              |                 | \$ 9,174,858   | LMWWTP Grit Station Upgrade                      | E-503 - Grit Collection Proj - SG-1                                                                                                                                                  | WWTP       | NOTE 1    |                              |
| 198   | 10170785 |              |              |                 | \$ 1,795,952   | LMWWTP Pump Station Hydraulic Improvements       | E-503 - Four Mile Pump Station to Screen Building Rec Proj - H-1                                                                                                                     | WWTP       | NOTE 1    |                              |
| 199   | 10170786 |              |              |                 | \$ 1,328,132   | LMWWTP Primary to Secondary Hydr. Improvements   | E-503 - Primary to Secondary Conveyance Rec Proj - H-2                                                                                                                               | WWTP       | NOTE 1    |                              |
| 200   | 10170787 |              |              |                 | \$ 9,840,701   | LMWWTP Chemically Enhanced Primary               | E-503 - Chemical Enhance Primary Rec Proj - PT-2                                                                                                                                     | WWTP       | NOTE 1    |                              |
| 201   | 10170788 |              |              |                 | \$ 9,235,525   | LMWWTP Secondary Treatment Modifications         | E-503 - Modification to Secondary Treatment Rec Proj - ST-2                                                                                                                          | WWTP       | NOTE 1    |                              |
| 202   | 10170789 |              |              |                 | \$ 3,618,935   | LMWWTP Chemical Feed Upgrades                    | E-503 - Upgrade Chemical Feed Sys Storage - D-2                                                                                                                                      | WWTP       | NOTE 1    |                              |
| 203   | 10170793 |              |              |                 | \$ 485,351     | LMWWTP Sludge Receiving Improvements             | E-503 - Improvement to Sludge Receiving Facility Rec Proj - DR-6                                                                                                                     | WWTP       | NOTE 1    |                              |
| 204   | 10170794 |              |              |                 | \$ 7,141,778   | LMWWTP Standby Power                             | E-503 - Dual Feed / Standby Power Rec Proj - E-1                                                                                                                                     | WWTP       | NOTE 1    |                              |
| 205   | 10172020 |              |              |                 | \$ 36,586,845  | LMWWTP Wet Weather Pump Station                  | E-505 - Wet Weather Pump Station with Screening 150 MGD to Auxiliary Outfall                                                                                                         | WWTP       | NOTE 1    |                              |
| 206   | 10172260 |              |              |                 | \$ 375,000     | LMWWTP Dry Weather Pump Station                  | Four Mile PS - Dry Weather Pumps - BAN Rec. Proj. PS-1                                                                                                                               | WWTP       | NOTE 1    |                              |
| 207   | 10140400 |              |              |                 | \$ 2,424,977   | Lockland Sewer Separation                        | Replace collector following original alignment - 7968 ft of 12-24"                                                                                                                   | CONV       | 2 yr      |                              |
| 208   | 10142280 |              |              |                 | \$ 241,149     | Oxley Grating                                    | Regulator Improvement-5 cfs. Combine with implementation of green infrastructure as redevelopment, renovation, and routine maintenance occurs to achieve CSO control to achieve 85%. | RI         |           | 4.6                          |
| 209   | 10142300 |              |              |                 | \$ 241,284     | 914 Oak St. Grating                              | Regulator Improvements-14.0 cfs. Green potential greater than storage need.                                                                                                          | RI         |           | 7.0                          |
| 210   | 10142320 |              |              |                 | \$ 243,670     | 200' West of Bacon St. Grating                   | Regulator Improvements-0.7 cfs                                                                                                                                                       | RI         |           | 0.0                          |
| 211   | 10142340 |              |              |                 | \$ 243,970     | Bacon St. Grating                                | Regulator Improvements-0.11 cfs                                                                                                                                                      | RI         |           | 0.1                          |
| 212   | 10142360 |              |              |                 | \$ 241,284     | No. 98 North Park Grating                        | Regulator Improvements-0.31 cfs                                                                                                                                                      | RI         |           | 0.1                          |
| 213   | 10142380 |              |              |                 | \$ 241,355     | 117 E. Charlotte Grating                         | Regulator Improvements-5.0 cfs                                                                                                                                                       | RI         |           | 1.3                          |
| 214   | 10142400 |              |              |                 | \$ 241,355     | 428 South Cooper Grating                         | Regulator Improvements-3.08 cfs                                                                                                                                                      | RI         |           | 0.0                          |
| 215   | 10130000 |              |              |                 | \$ 120,122,277 | Muddy Creek Basin Storage & Conveyance Sewer     | Storage & Conveyance Tunnel unloads Muddy Creek PS, Eliminating CSOs 682 & 687, provides CSO control for 518, 404, 405 and 406 - 25 ft diameter, 6500 ft long, 35 MGD pumps at WWTP  | TUNNEL     | 2 yr      |                              |
| 216   | 10130160 |              |              |                 | \$ 8,643,782   | Muddy Creek Pump Station Upgrade and Foremain    | Elim. PSO - increase capacity & convey to Hillside Relief Tunnel - 25 MGD pumps, 12' FM for DWF, 36" FM for WWF (associated with 30000)                                              | PS/UFM     | 2 yr      |                              |
| 217   | 10130400 |              |              |                 | \$ 396,774     | River Rd. Near Muddy Creek WWTP Conveyance Sewer | Rapid Run/Bender Rd. Interceptor directly into New Tunnel - 800 ft of 36"                                                                                                            | CONV       | 2 yr      |                              |
| 218   | 10131020 |              |              |                 | \$ 242,680     | CSO 402 Topinabee Dr. Reg. Improvements          | Regulator Improvement - 13.3 cfs (dependent on 30000, 30160, 31120)                                                                                                                  | RI         |           | 7.2                          |
| 219   | 10131040 |              |              |                 | \$ 245,338     | CSO 403 Elco St. Div. Dam Reg. Improvements      | Regulator Improvement - 7.10 cfs (dependent on 30000, 30160, 31120)                                                                                                                  | RI         |           | 3.6                          |
| 220   | 10131060 |              |              |                 | \$ 241,095     | CSO 404 Ivanhoe St. Reg. Improvements            | Regulator Improvement - 28.9 cfs (dependent on 30000, 30160, 31120)                                                                                                                  | RI         |           | 16.2                         |
| 221   | 10131080 |              |              |                 | \$ 242,108     | CSO 405 Revere St. Reg. Improvements             | Regulator Improvement - 6.20 cfs (dependent on 30000, 30160, 31120)                                                                                                                  | RI         |           | 3.7                          |
| 222   | 10131100 |              |              |                 | \$ 242,079     | CSO 406 Kennelbeck St. Reg. Improvements         | Regulator Improvement - 15.4 cfs (dependent on 30000, 30160, 31120)                                                                                                                  | RI         |           | 9.0                          |
| 223   | 10131120 |              |              |                 | \$ 3,477,204   | West Branch Ohio River Interceptor Sewer         | Convey Flow from CSO 404 to WWTP - 4000' - 60", sized for 85% control for CSOs 404, 405 and 406 (dependent on 30000, 30160)                                                          | CONV       |           | -                            |
| 224   | 10140000 |              |              |                 | \$ 1,710,579   | SSO 1048 Conveyance Sewer Phase 1                | Replace collector following original alignment - 4115 ft of 18-27", Tunnel 375 ft of 18-24"                                                                                          | CONV       | 2 yr      |                              |
| 225   | 10140020 |              |              |                 | \$ 2,487,502   | SSO 1048 Conveyance Sewer Phase 2                | Replace collector following original alignment - 4256' of 30-36"                                                                                                                     | CONV       | 2 yr      |                              |
| 226   | 10140080 |              |              |                 | \$ 1,178,958   | SSO 587 Conveyance Sewer                         | Replace collector following original alignment - 4235 ft of 15-24"                                                                                                                   | CONV       | 2 yr      |                              |
| 227   | 10140120 |              |              |                 | \$ 34,000,590  | Sharonville/Evendale Trunk to SSO 700            | 24,929 LF of 30-66", Tunnel 6250 LF of 30-78"                                                                                                                                        | CONV       | 2 yr      |                              |
| 228   | 10140480 |              |              |                 | \$ 1,203,840   | Pleasant Run Interceptor Replacement             | WIBs - Replace collector following original alignment - 4246 ft of 21-24"                                                                                                            | CONV       |           |                              |
| 229   | 10141180 |              |              |                 | \$ 60,020,365  | I-75 & Shepard Ave. SSO 700                      | Increase Storage at existing site - Additional 24 MG (NOTE 3)                                                                                                                        | STOR       | 2 yr      |                              |
| 230   | 10142120 |              |              |                 | \$ 241,286     | Mill & Vine St. Grating                          | Regulator Improvements-3.25 cfs                                                                                                                                                      | RI         |           | 0.2                          |
| 231   | 10142200 |              |              |                 | \$ 2,243,366   | Bernard & Reisenberg Grating                     | Partial Separation                                                                                                                                                                   | PS         |           | 1.7                          |
| 232   | 10142220 |              |              |                 | \$ 1,226,004   | Smalley Grating                                  | Partial Separation                                                                                                                                                                   | PS         |           | 0.2                          |

# ATTACHMENT 2

| INDEX | ATTACHMENT 2                       |                                                          |  |  | Sunk Costs<br>2008 Dollars | Remaining Costs<br>2008 Dollars | CSO Identifier                         | Description / Design<br>(NOTE4)                                                                            | Technology | Plan CAPP | Plan Remaining CSO<br>(MG/year) |
|-------|------------------------------------|----------------------------------------------------------|--|--|----------------------------|---------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------|------------|-----------|---------------------------------|
| 233   | 10130020                           | Muddy Creek Interceptor Rehabilitation                   |  |  |                            | \$ 4,899                        | SSO 1061<br>CSO 518<br>MH 16006007     | Clean Interceptor - 5000 ft of 36"                                                                         | CLEAN      |           |                                 |
| 234   | 10130040                           | CSO 518 Muddy Creek Conveyance Sewer                     |  |  |                            | \$ 5,495,655                    | SSO 1061<br>CSO 518<br>MH 16006007     | Replace section of Muddy Creek Int. - 9000 ft of 36"                                                       | CONV       | 2 yr      |                                 |
| 235   | 10130280                           | Addyston PS Elimination                                  |  |  |                            | \$ 1,712,696                    | PSO 730,<br>10902003                   | Elim. Addyston P.S. w/gravity along Rte. 50 - 2650' of 36" and two 100' of 24"                             | CONV       | 2 yr      |                                 |
| 236   | 10130700                           | Muddy Creek @ Westbourne EHRT                            |  |  |                            | \$ 24,184,412                   | CSO 198                                | EHRT - 126 MGD Community Priority (NOTE 2)                                                                 | EHRT       |           | 61.2                            |
| 237   | 10130720                           | CSO 518 Improvements                                     |  |  |                            | \$ 244,422                      | CSO 518                                | Regulator Improvement - 27.4 cfs Premised on CAPP Activity ID - 30040, 30000 Community Priority            | RI         |           | 8.4                             |
| 238   | 10130780                           | CSO's 223, 408, 410, 541, 654                            |  |  |                            | \$ 1,859,380                    | 223, 408,<br>541, 654                  | CD Exhibit 1 Partial Separation                                                                            | PS         |           | 0.3                             |
| 239   | 10130840                           | CSO's 411, 412, 413, 414, 415, 416                       |  |  |                            | \$ 4,082,231                    | 411, 412,<br>413, 414,<br>415, 416     | CD Exhibit 1 Regulator Improvement-3.21 cfs and Relocation Complete Partial Separation - Activity ID 31140 | PS         |           | 12.9                            |
| 240   | 10131000                           | E. Branch Muddy Ph1 Interceptor - Combined in 31006      |  |  |                            |                                 |                                        | W-103 - CD Exhibit 1 Interceptor Replacement Phase 1                                                       | CONV       |           |                                 |
| 241   | 10131002                           | E. Branch Muddy Ph2 Interceptor - Combined in 31006      |  |  |                            |                                 |                                        | W-103 - CD Exhibit 1 Interceptor Replacement Phase 2                                                       | CONV       |           |                                 |
| 242   | 10131003                           | E. Branch Muddy Ph3-A Pump Station - Combined in 31006   |  |  |                            |                                 |                                        | W-103 - CD Exhibit 1 Interceptor Replacement Phase 3                                                       | CONV       |           |                                 |
| 243   | 10131004                           | East Branch Muddy Ph3-B Pump Station - Combined in 31006 |  |  |                            |                                 |                                        | East Branch Muddy Ph3-B Pump Station                                                                       | CONV       |           |                                 |
| 244   | 10131006                           | East Branch Muddy Interceptor                            |  |  |                            | \$ 60,315,458                   |                                        | W-105 - Interceptor Extension                                                                              | CONV       |           |                                 |
| 245   | 10131140                           | E. Branch Ohio Rinterceptor Sewer Separation             |  |  |                            | \$ 15,848,746                   | 408, 411,<br>CSO 412, 414,<br>415, 416 | W-104 - Complete the Partial Separation in CSOs areas 408, 411, 412, 414, 415, 416                         | PS         |           | In 30840 and 30780              |
| 246   | REMAINING PHASE 2 PROJECTS/BUNDLES |                                                          |  |  |                            | \$ 1,547,526,371                |                                        |                                                                                                            |            |           |                                 |
| 247   | WWTP                               | Mill Creek Wastewater Treatment Plant                    |  |  |                            | \$ 182,720                      |                                        |                                                                                                            |            |           |                                 |
| 248   | 10144882                           | Mill Creek WWTP Chemical Enhanced Primary Treat.         |  |  |                            | \$ 164,235                      |                                        | C-402 - Enhanced Primary Treatment                                                                         | WWTP       | NOTE 1    |                                 |
| 249   | LDGU                               | Lower Duck Creek Upper                                   |  |  |                            |                                 |                                        |                                                                                                            |            |           |                                 |
| 250   | 10170920                           | Nix-Tone Parking Lot Grating                             |  |  |                            | \$ 9,985,847                    | CSO 68                                 | Storage - 2.53 MG                                                                                          | STOR       |           | 36.9                            |
| 251   | 10170960                           | Madison & Redbank Grating                                |  |  |                            | \$ 277,349                      | CSO 66                                 | Regulator Improvements - 2.7 cfs                                                                           | RI         |           | 0.0                             |
| 252   | 10171260                           | 4730 Madison Ave. Grating                                |  |  |                            | \$ 277,349                      | CSO 61                                 | Regulator Improvements - 8.2 cfs                                                                           | RI         |           | 2.1                             |
| 253   | 10171280                           | End of Harrow St. Div. Dam                               |  |  |                            | \$ 277,350                      | CSO 64                                 | Regulator Improvements - 9.7 cfs                                                                           | RI         |           | 0.1                             |
| 254   | 10171300                           | Brotherton Rd. Grating                                   |  |  |                            | \$ 277,349                      | CSO 80                                 | Regulator Improvements - 7.0 cfs                                                                           | RI         |           | 0.0                             |
| 255   | 10171320                           | 3875 Forest Hills Grating                                |  |  |                            | \$ 277,349                      | CSO 83                                 | Regulator Improvements - 11 cfs                                                                            | RI         |           | 2.7                             |
| 256   | 10171340                           | 3848 Madison Rd. Div. Dam                                |  |  |                            | \$ 277,350                      | CSO 188                                | Regulator Improvements - 8.1 cfs                                                                           | RI         |           | 4.4                             |
| 257   | 10171360                           | Ford Gate Grating                                        |  |  |                            | \$ 277,350                      | CSO 189                                | Regulator Improvements - 27 cfs                                                                            | RI         |           | 0.0                             |
| 258   | 10171440                           | Cambarwell Ave. Div. Dam                                 |  |  |                            | \$ 2,285,200                    | CSO 205                                | Partial Separation                                                                                         | PS         |           | 0.5                             |
| 259   | 10171460                           | Old Red Bank Rd. Grating                                 |  |  |                            | \$ 5,514,020                    | CSO 84                                 | Consolidate to STO @ CSO 503 1,500' of 72" sewer                                                           | STOR       | In 71520  |                                 |
| 260   | 10171480                           | 3979 Rosslyn Dr. Grating                                 |  |  |                            | \$ 19,161,278                   | CSO 136                                | Storage - 4.00 MG                                                                                          | STOR       |           | 31.0                            |
| 261   | 10171520                           | Zaeh Rd. Grating                                         |  |  |                            | \$ 5,095,999                    | CSO 503                                | Pipe Rehab Replacement and Stream Restoration                                                              | SEPI/GREEN |           | 15.1                            |
| 262   | PLUWWTP                            | Pleasant Run Wastewater Treatment Plant                  |  |  |                            |                                 |                                        |                                                                                                            |            |           |                                 |
| 263   | 10145540                           | WWTP Joint MSD/ Butler County Facility                   |  |  |                            | \$ 100,354,974                  |                                        | Pleasant Run Flow Diversion from Mill Creek - Joint MSD/Butler Co. Facility                                | WWTP       | NOTE 1    |                                 |
| 264   | RL                                 | Reading Lower                                            |  |  |                            |                                 |                                        |                                                                                                            |            |           |                                 |
| 265   | 10140340                           | Ronald Reagan & Reading Rd.                              |  |  |                            | \$ 1,402,999                    | SSO 1001, 1020                         | Replacement collector following original alignment - 4336 ft of 12-21"                                     | CONV       | 2 yr      |                                 |
| 266   | 10142060                           | 214 Clark St. Grating                                    |  |  |                            | \$ 277,351                      | CSO 507                                | Regulator Improvements-0.9 cfs                                                                             | RI         |           | 0.4                             |
| 267   | 10142080                           | Gebert St. Grating                                       |  |  |                            | \$ 277,350                      | CSO 509                                | Regulator Improvements-3.0 cfs                                                                             | RI         |           | 0.1                             |
| 268   | 10142100                           | 531 Davis Street Grating                                 |  |  |                            | \$ 277,350                      | CSO 511                                | Regulator Improvements-4.49 cfs                                                                            | RI         |           | 0.0                             |
| 269   | 10142140                           | Reading Rd. @ Galbreath                                  |  |  |                            | \$ 3,854,201                    | CSO 510                                | Partial Separation                                                                                         | PS         |           | 2.2                             |
| 270   | 10142160                           | Southern Ave. Grating                                    |  |  |                            | \$ 277,350                      | CSO 510A                               | Regulator Improvements- 0.6 cfs                                                                            | RI         |           | 0.1                             |
| 271   | 10142180                           | 245 Clark St. Overflow                                   |  |  |                            | \$ 948,900                      | CSO 508                                | Partial Separation                                                                                         | PS         |           | 1.3                             |
| 272   | LDU                                | Little Duck Regulators                                   |  |  |                            |                                 |                                        |                                                                                                            |            |           |                                 |
| 273   | 10171040                           | Camargo & East Fork Grating                              |  |  |                            | \$ 277,345                      | CSO 69                                 | Regulator Improvements - 8.4 cfs Relocated Completed CIP 96-12                                             | RI         |           | 0.0                             |
| 274   | 10171080                           | Plainville & Indian Hill                                 |  |  |                            | \$ 277,345                      | CSO 71                                 | Regulator Improvements - 2.0 cfs Relocated Completed CIP 96-12                                             | RI         |           | 0.3                             |
| 275   | 10171100                           | 4800 Jameson Grating                                     |  |  |                            | \$ 277,344                      | CSO 72                                 | Regulator Improvements -1.7 cfs                                                                            | RI         |           | 0.1                             |
| 276   | 10171120                           | 6402 Roe St. Grating                                     |  |  |                            | \$ 277,345                      | CSO 74                                 | Regulator Improvements -3.2 cfs                                                                            | RI         |           | 0.7                             |
| 277   | 10171140                           | 6333 Roe St. Grating                                     |  |  |                            | \$ 277,344                      | CSO 75                                 | Regulator Improvements -7.9 cfs                                                                            | RI         |           | 1.3                             |
| 278   | 10171160                           | Bramble & Homer Grating                                  |  |  |                            | \$ 277,344                      | CSO 78                                 | Regulator Improvements - 5.5 cfs                                                                           | RI         |           | 1.3                             |
| 279   | 10171180                           | 3980 South Whetzel Grating                               |  |  |                            | \$ 277,344                      | CSO 78                                 | Regulator Improvements - 7.9 cfs                                                                           | RI         |           | 0.3                             |
| 280   | 10171200                           | Southern Ave. Grating                                    |  |  |                            | \$ 277,346                      | CSO 79                                 | Regulator Improvements - 7.0 cfs                                                                           | RI         |           | 1.5                             |



## ATTACHMENT 2

| INDEX |          | Sunk Costs<br>2006 Dollars | Remaining Costs<br>2006 Dollars | CSO SSO Identifier               | Description / Design<br>(NOTE4)                                                                                     | Technology   | Plan<br>CAPP | Plan<br>Remaining<br>CSO<br>(MG/year) |
|-------|----------|----------------------------|---------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------|--------------|--------------|---------------------------------------|
| 281   | 10171220 |                            | \$ 277,343                      | CSO 656                          | Regulator Improvements Remove downstream flow restriction @ Beechmont Sluice Gate                                   | RI           |              | In 71920                              |
| 282   | LDGR     |                            |                                 |                                  |                                                                                                                     |              |              |                                       |
| 283   | 10171380 |                            | \$ 2,180,499                    | CSO 85                           | Full Separation                                                                                                     | FS           |              | 0.0                                   |
| 284   | 10171400 |                            | \$ 2,327,200                    | CSO 86                           | Partial Separation CIP 93-02 HWDW Relocate                                                                          | PS           |              | 1.9                                   |
| 285   | 10171500 |                            | \$ 277,349                      | CSO 472                          | Regulator Improvements                                                                                              | RI           |              | 28.5                                  |
| 286   | ICWWTP   |                            |                                 |                                  |                                                                                                                     |              |              |                                       |
| 287   | 10110000 |                            | \$ 299,238                      |                                  | Opt. Existing Facility, 8.2 - 10.8 MGD                                                                              | Optimization | NOTE 1       |                                       |
| 288   | 10110020 |                            | \$ 1,042,000                    | PSO 877                          | 1.5 MG Storage w/inlet 3.6 MGD pumps and FM for wet weather flow                                                    | STOR         | 2 yr         |                                       |
| 289   | AC       |                            |                                 |                                  |                                                                                                                     |              |              |                                       |
| 290   | 10141160 |                            | \$ 824,968                      | SSO 1032                         | Replace collector following original alignment - 1783 ft of 12-18"                                                  | CONV         | 2 yr         |                                       |
| 291   | 10142460 |                            | \$ 277,332                      | CSO 505                          | Regulator Improvements - 8.3 cfs                                                                                    | RI           |              | 0.0                                   |
| 292   | 10142480 |                            | \$ 277,332                      | CSO 505                          | Regulator Improvements - 8.3 cfs                                                                                    | RI           |              | 0.3                                   |
| 293   | 10142500 |                            | \$ 1,953,100                    | CSO 506                          | Partial Separation                                                                                                  | PS           |              | 1.3                                   |
| 294   | CRU      |                            |                                 |                                  |                                                                                                                     |              |              |                                       |
| 295   | 10142520 |                            | \$ 277,350                      | CSO 535                          | Regulator Improvements - 3.25 cfs                                                                                   | RI           |              | 0.0                                   |
| 296   | 10142540 |                            | \$ 277,350                      | CSO 560                          | Regulator Improvement - 3.25 cfs                                                                                    | RI           |              | 0.0                                   |
| 297   | 10142580 |                            | \$ 928,701                      | CSO 537                          | Partial Separation                                                                                                  | PS           |              | 0.2                                   |
| 298   | 10141140 |                            | \$ 784,079                      | SSO 1029                         | Replace collector following original alignment - 3005 ft of 15-21"                                                  | CONV         | 2 yr         |                                       |
| 299   | 10145600 |                            | \$ 65,128,882                   | Anthony Wayne Interceptor System | Future Wet Weather Facility to provide system capacity in the Mill Creek Interceptor System                         |              |              |                                       |
| 300   | 10140880 |                            | \$ 3,181,999                    | SSO 568, 569                     | CIP 2006-25 (in planning)                                                                                           | CONV         | 2 yr         |                                       |
| 301   | 10141100 |                            | \$ 7,287,254                    | SSO 1029                         | Replace collector following original alignment - 15,563 ft of 21-48", Tunnel 200 ft of 42"                          | CONV         | 2 yr         |                                       |
| 302   | TWLL     |                            |                                 |                                  |                                                                                                                     |              |              |                                       |
| 303   | 10141020 | \$ 2,358                   | \$ 17,353,571                   | SSO 640                          | Below ground Storage, protects trunk sewer - 5.9 MG                                                                 | STOR         | 2 yr         |                                       |
| 304   | 10140820 | \$ 2,406                   | \$ 5,893,498                    |                                  | Replace collector following original alignment - 12,950 ft of 15-60", Tunnel 220 ft of 18-42"                       | CONV         |              |                                       |
| 305   | MA       |                            |                                 |                                  |                                                                                                                     |              |              |                                       |
| 306   | 10170180 |                            | \$ 2,150,290                    | SSO 1008                         | Replace existing pipe - Approx. 2600 LF of 18-27"                                                                   | CONV         | 2 yr         |                                       |
| 307   | 10170180 |                            | \$ 3,023,001                    | SSO 1008                         | Replace existing pipe - Approx. 7300 LF of 15-21"                                                                   | CONV         | 2 yr         |                                       |
| 308   | 10170320 |                            | \$ 1,359,644                    |                                  | Replace existing pipe - Approx. 1700 LF of 18"                                                                      | CONV         |              |                                       |
| 309   | 10170340 |                            | \$ 1,795,303                    |                                  | Replace existing pipe - Approx. 3600 LF of 18-18"                                                                   | CONV         |              |                                       |
| 310   | GCA      |                            |                                 |                                  |                                                                                                                     |              |              |                                       |
| 311   | 10170120 |                            | \$ 3,524,420                    | SSO 588                          | Replace existing pipe - Approx. 4000 LF of 27-30"                                                                   | CONV         | 2 yr         |                                       |
| 312   | 10170140 |                            | \$ 1,329,768                    | SSO 588                          | Replace existing pipe - Approx. 4100 LF of 15-27"                                                                   | CONV         | 2 yr         |                                       |
| 313   | 10170220 |                            | \$ 17,284,000                   |                                  | Regional Storage - 4.6 MG                                                                                           | STOR         |              |                                       |
| 314   | 10170240 |                            | \$ 18,560,565                   |                                  | Replace existing pipe - Approx. 9600 LF of 15-48"                                                                   | CONV         |              |                                       |
| 315   | 10170260 |                            | \$ 2,259,465                    |                                  | Replace existing pipe - Approx. 3000 LF of 48"                                                                      | CONV         |              |                                       |
| 316   | 10170280 |                            | \$ 2,682,335                    |                                  | WIBs - Replace existing pipe - Approx. 4100 LF of 27-54"                                                            | CONV         |              |                                       |
| 317   | 10170890 |                            | \$ 17,781,369                   | CSO 182                          | EHRT - 44.3 MGD Community Priority (NOTE 2)                                                                         | EHRT         |              | 18.3                                  |
| 318   | 10170900 |                            | \$ 277,729                      | CSO 476                          | Regulator Improvements - 49.2 cfs Premised on operational changes at WWTP Four Mile P.S.                            | RI           |              | 2.4                                   |
| 319   | 10170860 |                            | \$ 819,293                      | PSO 861                          | Prospect Woods PS Upgrade                                                                                           | PSU          | 2 yr         |                                       |
| 320   | W        |                            |                                 |                                  |                                                                                                                     |              |              |                                       |
| 321   | 10140620 |                            | \$ 24,900,000                   |                                  | Partially buried Storage - Protects Interceptors; 9.4 MG, gravity in & out                                          | STOR         |              |                                       |
| 322   | 10141040 |                            | \$ 6,799,999                    |                                  | New parallel sewer to follow original alignment - 11,238 ft of 18-42"                                               | CONV         |              |                                       |
| 323   | 10141320 |                            | \$ 609,699                      | PSO 794                          | Sensitive Receiving Stream                                                                                          | CONV         | 2 yr         |                                       |
| 324   | 10140800 |                            | \$ 5,198,070                    | SSO 812, 1003                    | PS Elim. PSO 794, w/sewer Replace collector following original alignment - 12,395 ft of 12-48", Tunnel 80 ft of 36" | CONV         | 2 yr         |                                       |
| 325   | DAL      |                            |                                 |                                  |                                                                                                                     |              |              |                                       |
| 326   | 10172000 |                            | \$ 277,730                      | CSO 669                          | Regulator Improvement                                                                                               | RI           |              | 0.0                                   |
| 327   | D        |                            |                                 |                                  |                                                                                                                     |              |              |                                       |
| 328   | 10170980 |                            | \$ 277,349                      | CSO 554                          | Regulator Improvements - 4.1 cfs                                                                                    | RI           |              | 0.0                                   |
| 329   | 10171000 |                            | \$ 6,200,543                    | CSO 555                          | Sewer Separation                                                                                                    | PS           |              | 8.9                                   |
| 330   | 10171020 |                            | \$ 11,779,329                   | CSO 556                          | Storage - 2.90 MG                                                                                                   | STOR         |              | 17.5                                  |
| 331   | RR       |                            |                                 |                                  |                                                                                                                     |              |              |                                       |
| 332   | 10130440 |                            | \$ 3,293,342                    |                                  | Replace Interceptor in Wulff Run - 4500 ft of 24"                                                                   | CONV         |              |                                       |

## ATTACHMENT 2

| INDEX | Sunk Costs   |                                           | Remaining Costs |                | CSO Identifier | Description / Design (NOTE 4)                                                  | Technology        | Plan CAPP | Plan Remaining CSO (MG/year) |
|-------|--------------|-------------------------------------------|-----------------|----------------|----------------|--------------------------------------------------------------------------------|-------------------|-----------|------------------------------|
|       | 2008 Dollars | 2006 Dollars                              | 2008 Dollars    | 2006 Dollars   |                |                                                                                |                   |           |                              |
| 333   | 10130460     | Delhi Rd & Oakwood Park Dr.               |                 |                | SSO 623        | Storage Tank capturing SSO 623 - 1.25 MG w/3 MGD pump                          | STOR              |           |                              |
| 334   | 10130500     | Delhi Rd. East to Schroer Ave.            |                 | \$ 8,389,474   |                | Replace Interceptor along original alignment through Delhi - 5500 ft of 18-24" | CONV              | 2 yr      |                              |
| 335   | 10130760     | Rapid Run & Devils Backbone               |                 | \$ 1,524,556   | CSO 523        | EHRT - 106 MGD Community Priority (NOTE 2)                                     | EHRT              |           | 55.3                         |
| 336   | TWLU         | Tributary to Winton Lake Upper            |                 |                |                |                                                                                |                   |           |                              |
| 337   | 10142260     | Daily Rd. Vortex Separator                |                 |                | CSO 532        | EHRT - 204.7 MGD Community Priority (NOTE 2)                                   | EHRT              |           | 33.9                         |
| 338   | LDC          | Lower Duck Conveyance                     |                 | \$ 63,443,831  |                |                                                                                |                   |           |                              |
| 339   | 10170200     | Wooster Pike & West St.                   |                 | \$ 1,844,357   |                | WIBs - Replace existing pipe - Approx. 2800 LF of 12-27"                       | CONV              |           |                              |
| 340   | 10170680     | Plainview Rd.                             |                 | \$ 1,580,886   |                | WIBs - Replace existing pipe - Approx. 2800 LF of 12-27"                       | CONV              |           |                              |
| 341   | SP           | Sycamore Plan                             |                 |                |                | Replace pipe - 500 ft of 18"                                                   | CONV              |           |                              |
| 342   | 10160020     | Montgomery & Deerfield                    |                 | \$ 192,639     |                | Replace existing pipe - Approx. 8800 LF of 21-27"                              | CONV              |           |                              |
| 343   | CCB          | Clough Creek B                            |                 |                |                | Replace existing pipe - Approx. 6600 LF of 15-18"                              | CONV              |           |                              |
| 344   | 10170300     | Gungadin Dr. W. of 5 Mile & Paddison      |                 | \$ 4,716,433   |                | Replace existing pipe - Approx. 2100 LF of 15"                                 | CONV              |           |                              |
| 345   | 10170360     | Concordridge Dr. & Hunley Rd.             |                 | \$ 5,019,056   |                | Replace existing pipe - Approx. 6100 LF of 21-27"                              | CONV              |           |                              |
| 346   | 10170380     | Lawyer Rd. @ Heatherwood Ln.              |                 | \$ 788,806     |                | Replace existing pipe - Approx. 5300 LF of 18-21"                              | CONV              |           |                              |
| 347   | 10170480     | Clough Pike @ Golden Gate Dr.             |                 | \$ 4,283,535   |                |                                                                                |                   |           |                              |
| 348   | 10170500     | Clough Pike @ Wolfangle Rd.               |                 | \$ 2,185,711   |                |                                                                                |                   |           |                              |
| 349   | PRWWTP       | Polk Run Wastewater Treatment Plant       |                 |                |                |                                                                                |                   |           |                              |
| 350   | 10150020     | Polk WWTP STO Storage Tank                |                 | \$ 16,936,648  |                | Storage - 6 MG (NOTE 1)                                                        | STOR              |           |                              |
| 351   | 10150015     | Polk Run WWTP Optimization PH4            |                 | \$ 8,156,003   |                | Polk Run WWTP Optimization PH4                                                 | Optimization      | NOTE 1    |                              |
| 352   | 10150080     | Polk WWTP STO Replace Pipe                |                 | \$ 5,882,872   |                | Replacement pipe - 800 ft of 30" 11 MG tank                                    | CONV/STOR         |           |                              |
| 353   | 10150100     | Polk WWTP CNV Map 015                     |                 | \$ 1,141,145   |                | Replacement pipe - 2700 ft of 15-18"                                           | CONV              |           |                              |
| 354   | 10150140     | Polk WWTP CNV Map 002                     |                 | \$ 5,424,227   |                | Replace pipe (200 ft of 18", New PS & Storage tank)                            | CONV/STOR         |           |                              |
| 355   | 10150160     | Polk WWTP CNV Map 010                     |                 | \$ 12,937,008  |                | Replace pipe - 7000 ft of 36 - 48"                                             | CONV              |           |                              |
| 356   | CA           | California Plan                           |                 |                |                |                                                                                |                   |           |                              |
| 357   | 10170400     | 5 Mile Rd. & Old Kellogg                  |                 | \$ 7,976,701   |                | Replace existing pipe - Approx. 5000 LF of 36-54"                              | CONV              |           |                              |
| 358   | 10170420     | 5 Mile Rd. & Birney Ln.                   |                 | \$ 6,037,842   |                | Replace existing pipe - Approx. 2000 LF of 42"                                 | CONV              |           |                              |
| 359   | 10170440     | 4 Mile Rd. @ I-275                        |                 | \$ 6,890,945   |                | Replace existing pipe - Approx. 1400 LF of 21-30"                              | CONV              |           |                              |
| 360   | 10170460     | Indian Creek Rd.                          |                 | \$ 3,739       |                | Seal Manhole Lids                                                              | Seal Manhole Lids |           |                              |
| 361   | 10170540     | Kellogg Ave. @ Coney Island               |                 | \$ 7,195,266   |                | Replace existing pipe - Approx. 6200 LF of 54-66"                              | CONV              |           |                              |
| 362   | WOL          | West Ohio Lower                           |                 |                |                |                                                                                |                   |           |                              |
| 363   | 10144660     | Delhi Ave. Div. Dam                       |                 | \$ 583,389     | CSO 420        | Partial Separation                                                             | PS                |           | 0.1                          |
| 364   | 10144680     | River Rd. @ Delhi Div. Dam                |                 | \$ 857,500     | CSO 421        | Partial Separation                                                             | PS                |           | 0.2                          |
| 365   | 10144760     | Bold Face Sr. Div. Dam                    |                 | \$ 96,810,228  | CSO 419        | EHRT - 275 MGD (NOTE 2)                                                        | EHRT              |           | 137.2                        |
| 366   | 10144780     | Mt. Echo Rd. Regulator                    |                 | \$ 277,350     | CSO 422        | Regulator Improvements - 22.2 cfs                                              | RI                |           | 13.4                         |
| 367   | 10144800     | Mt. Hope Ave. Regulator                   |                 | \$ 13,886,537  | CSO 423        | Storage-3.5 MG                                                                 | STOR              |           | 24.9                         |
| 368   | KRU          | Kings Run Upper                           |                 |                |                |                                                                                |                   |           |                              |
| 369   | 10142840     | Ross Run Regulator                        |                 | \$ 277,300     | CSO 485        | Regulator Improvements - 70.4 cfs                                              | RI                |           | 28.1                         |
| 370   | 10143180     | Wooden Shoe Regulator                     |                 | \$ 25,596,976  | CSO 217A       | EHRT - 75 MGD (NOTE 2)                                                         | EHRT              |           | 23.3                         |
| 371   | 10143000     | Kings Run and Spring Cove                 | \$ 13,723       | \$ 2,245,402   | CSO 466        | Partial Separation                                                             | PS                |           | 0.4                          |
| 372   | 10143040     | Ross Run Grating                          |                 | \$ 186,895,962 | CSO 487        | EHRT - 584 MGD (NOTE 2)                                                        | EHRT              |           | 289.2                        |
| 373   | 10143140     | Kings Run Regulator                       |                 | \$ 5,487,501   | CSO 483        | Partial Separation to new Interceptor connection                               | PS                |           | 15.3                         |
| 374   | HS           | Hopps Street                              |                 |                |                |                                                                                |                   |           |                              |
| 375   | 10142760     | Vinton St. Regulator                      |                 | \$ 277,301     | CSO 8          | Regulator Improvements - 1.54 cfs                                              | RI                |           | 0.9                          |
| 376   | WF           | West Fork                                 |                 |                |                |                                                                                |                   |           |                              |
| 377   | 10143680     | Powers No. 1 Grating                      |                 | \$ 277,348     | CSO 527A       | Regulator Improvements - 4.6 cfs                                               | RI                |           | 0.4                          |
| 378   | 10143700     | Beekman North Grating                     |                 | \$ 277,350     | CSO 528A       | Regulator Improvements - 3.0 cfs                                               | RI                |           | 0.2                          |
| 379   | 10143720     | Beekman South Grating                     |                 | \$ 277,350     | CSO 528B       | Regulator Improvements - 6.5 cfs                                               | RI                |           | 0.9                          |
| 380   | 10143740     | Liewellen Grating                         |                 | \$ 359,200     | CSO 529B       | Regulator Improvements - 3.9 cfs                                               | RI                |           | 0.1                          |
| 381   | 10143760     | Hoffner Grating                           |                 | \$ 895,800     | CSO 123        | Partial Separation                                                             | PS                |           | 0.0                          |
| 382   | 10143780     | Hays Grating                              |                 | \$ 1,337,900   | CSO 127        | Partial Separation                                                             | PS                |           | 0.2                          |
| 383   | 10143800     | Todd No. 2 Grating                        |                 | \$ 85,000,001  | CSO 128        | Partial Separation                                                             | PS                |           | 0.3                          |
| 384   | 10143860     | Butler/Todd 1/7 win Grating               |                 |                | CSO 130        | Conveyance to Tunnel at Mill Creek, 12,600' of 84" sewer                       | CONV              |           | 66.3                         |
| 385   | 10143820     | Badgley Run Grating - Incl. with 10143820 |                 |                | CSO 125        | Conveyance to Tunnel at Mill Creek, 12,600' of 84" sewer, Cost in CSO 130      | CONV              |           | 68.9                         |



## ATTACHMENT 2

| INDEX |          | Sunk Costs<br>2006 Dollars | Remaining Costs<br>2006 Dollars | CSO SSO Identifier | Description / Design (NOTE4)                                                         | Technology | Plan CAPP | Plan Remaining CSO (MG/year) |
|-------|----------|----------------------------|---------------------------------|--------------------|--------------------------------------------------------------------------------------|------------|-----------|------------------------------|
| 386   | 10143840 |                            |                                 | CSO 126            | Conveyance to Tunnel at Mill Creek, 12,600' of 84" sewer, Cost in CSO 130            | CONV       |           | 33.2                         |
| 387   | 10143880 |                            |                                 | CSO 203            | Conveyance to Tunnel at Mill Creek, 12,600' of 84" sewer, Cost in CSO 130            | CONV       |           | 5.4                          |
| 388   | 10143900 |                            |                                 | CSO 117A           | Conveyance to Tunnel at Mill Creek, 12,600' of 84" sewer, Cost in CSO 130            | CONV       |           | 9.4                          |
| 389   | EL       |                            |                                 |                    |                                                                                      |            |           |                              |
| 390   | 10142640 |                            | \$ 1,019,100                    | CSO 544            | Partial Separation                                                                   | PS         |           | 0.1                          |
| 391   | 10142660 |                            | \$ 510,101                      | CSO 553            | Partial Separation                                                                   | PS         |           | 0.4                          |
| 392   | 10142700 |                            | \$ 75,985,178                   | CSO 181            | EHRT - 230 MGD (NOTE 2)                                                              | EHRT       |           | 215.1                        |
| 393   | EO1U     |                            |                                 |                    |                                                                                      |            |           |                              |
| 394   | 10144160 |                            |                                 | CSO 430            | In-line Storage in existing piping (also 431 & 432)                                  | STOR       |           | 27.8                         |
| 395   | 10144180 |                            |                                 | CSO 432            | In-line Storage in existing piping (also 430 & 431A)                                 | STOR       |           | 5.2                          |
| 396   | 10144200 |                            | \$ 2,702,301                    | CSO 431A           | In-line Storage in existing piping (also 430 & 432) Dewater pump station for 2.0 MGD | STOR       |           | 102.5                        |
| 397   | EO2      |                            |                                 |                    |                                                                                      |            |           |                              |
| 398   | 10144220 |                            | \$ 277,350                      | CSO 449            | Regulator Improvement - 1.0 cfs                                                      | RI         |           | 0.1                          |
| 399   | 10144240 |                            | \$ 277,349                      | CSO 453A           | Regulator Improvement - 2.6 cfs                                                      | RI         |           | 0.3                          |
| 400   | 10144260 |                            | \$ 1,530,200                    | CSO 447            | Partial Separation                                                                   | PS         |           | 0.1                          |
| 401   | 10144320 |                            | \$ 277,350                      | CSO 452            | Regulator Improvement - 8.5 cfs                                                      | RI         |           | 4.1                          |
| 402   | 10144340 |                            | \$ 27,874,917                   | CSO 461            | EHRT - 120 MGD (NOTE 2)                                                              | EHRT       |           | 119.2                        |
| 403   | 10144360 |                            | \$ 277,350                      | CSO 464            | Regulator Improvement - 6.4 cfs                                                      | RI         |           | 3.6                          |
| 404   | 10144380 |                            | \$ 277,350                      | CSO 465            | Regulator Improvement - 2.0 cfs                                                      | RI         |           | 1.0                          |
| 405   | 10144400 |                            | \$ 277,349                      | CSO 469E           | Regulator Improvements - 5.8 cfs                                                     | RI         |           | 2.8                          |
| 406   | 10144420 |                            | \$ 277,350                      | CSO 468E           | Regulator Improvement - 2.6 cfs                                                      | RI         |           | 1.6                          |
| 407   | WOU      |                            |                                 |                    |                                                                                      |            |           |                              |
| 408   | 10144700 |                            | \$ 381,500                      | CSO 668            | Partial Separation                                                                   | PS         |           | 0.5                          |
| 409   | 10144720 |                            | \$ 97,801                       | CSO 426A           | Full Separation                                                                      | FS         |           | 0.3                          |
| 410   | 10144740 |                            | \$ 1,682,099                    | CSO 426B           | Partial Separation                                                                   | PS         |           | 0.5                          |
| 411   | 10144820 |                            | \$ 4,337,794                    | CSO 424            | Partial Separation                                                                   | PS         |           | 5.2                          |
| 412   | 10144860 |                            | \$ 277,351                      | CSO 425B           | Regulator Improvement - 1.7 cfs Overcontrol @ CSO 419                                | RI         |           | 8.5                          |
| 413   | EO1LW    |                            |                                 |                    |                                                                                      |            |           |                              |
| 414   | 10144020 |                            | \$ 277,333                      | CSO 435            | Regulator Improvements-11.2 cfs                                                      | RI         |           | 6.6                          |
| 415   | 10144040 |                            | \$ 2,635,500                    | CSO 433            | Partial Separation                                                                   | PS         |           | 1.0                          |
| 416   | 10144060 |                            | \$ 824,599                      | CSO 434            | Partial Separation                                                                   | PS         |           | 0.2                          |
| 417   | 10144120 |                            | \$ 785,300                      | CSO 489            | Partial Separation                                                                   | PS         |           | 0.1                          |
| 418   | 10144140 |                            | \$ 4,587,403                    | CSO 436            | Partial Separation                                                                   | PS         |           | 8.4                          |
| 419   | CRL      |                            |                                 |                    |                                                                                      |            |           |                              |
| 420   | 10142560 |                            | \$ 2,876,601                    | CSO 480            | Partial Separation                                                                   | PS         |           | 0.9                          |
| 421   | 10142600 |                            | \$ 8,274,751                    | CSO 171            | Storage - 2.00 MG                                                                    | STOR       |           | 23.0                         |
| 422   | KRL      |                            |                                 |                    |                                                                                      |            |           |                              |
| 423   | 10142680 |                            | \$ 277,301                      | CSO 026A           | Regulator Improvements - 7.1 cfs                                                     | RI         |           | 0.0                          |
| 424   | 10142690 |                            | \$ 1,159,300                    | CSO 480            | Partial Separation                                                                   | PS         |           | 1.3                          |
| 425   | EO3W     |                            |                                 |                    |                                                                                      |            |           |                              |
| 426   | 10144440 |                            | \$ 8,473,599                    | CSO 455            | Partial Separation                                                                   | PS         |           | 3.3                          |
| 427   | 10144460 |                            | \$ 1,469,000                    | CSO 456            | Partial Separation                                                                   | PS         |           | 1.0                          |
| 428   | 10144480 |                            | \$ 1,323,000                    | CSO 457            | Partial Separation                                                                   | PS         |           | 0.2                          |
| 429   | 10144520 |                            | \$ 541,896                      | CSO 658            | Full Separation                                                                      | FS         |           | 0.0                          |
| 430   | 10144560 |                            | \$ 136,000                      | CSO 454B           | Full Separation                                                                      | FS         |           | 0.0                          |
| 431   | 10144580 |                            | \$ 1,272,000                    | CSO 457A           | Full Separation                                                                      | FS         |           | 0.5                          |
| 432   | 10144600 |                            | \$ 19,890,435                   | CSO 458            | Storage - 6.0 MG Consolidate with CSO 460                                            | STOR       |           | 10.1                         |
| 433   | 10144640 |                            | \$ 277,350                      | CSO 454A           | Regulator Improvement - 5.5 cfs                                                      | RI         |           | 12.7                         |
| 434   | EO1LE    |                            |                                 |                    |                                                                                      |            |           |                              |
| 435   | 10144000 |                            | \$ 277,331                      | CSO 438A           | Regulator Improvements-52.4 cfs                                                      | RI         |           | 8.9                          |
| 436   | 10144100 |                            | \$ 3,683,099                    | CSO 438            | Partial Separation                                                                   | PS         |           | 14.3                         |
| 437   | NBL      |                            |                                 |                    |                                                                                      |            |           |                              |
| 438   | 10143200 |                            | \$ 277,300                      | CSO 19             | Regulator Improvement - 7.6                                                          | RI         |           | 0.9                          |
| 439   | EU       |                            |                                 |                    |                                                                                      |            |           |                              |
| 440   | 10142620 |                            | \$ 277,301                      | CSO 37             | Regulator Improvements - 6.2 cfs                                                     | RI         |           | 1.3                          |

## ATTACHMENT 2

| INDEX |                                          | Sunk  |              | Remaining    |              | CSO SSO Identifier | Description / Design (NOTE4)                        | Technology | Plan CAPP | Plan Remaining CSO (MG/year) |
|-------|------------------------------------------|-------|--------------|--------------|--------------|--------------------|-----------------------------------------------------|------------|-----------|------------------------------|
|       |                                          | Costs | 2006 Dollars | Costs        | 2006 Dollars |                    |                                                     |            |           |                              |
| 441   | 10142720                                 |       |              |              |              | CSO 39             | Partial Separation                                  | PS         |           | 2.2                          |
| 442   | 10142740                                 |       |              |              |              | CSO 488            | Over Control at 181 to eliminate conveyance element | RI         |           | 35.3                         |
| 443   | SGI                                      |       |              |              |              |                    |                                                     |            |           |                              |
| 444   | 10143360                                 |       |              |              |              | CSO 110            | Regulator Improvements - 2.30 cfs                   | RI         |           | 0.3                          |
| 445   | 10143400                                 |       |              |              |              | CSO 111            | Partial Separation                                  | PS         |           | 4.1                          |
| 446   | 10143420                                 |       |              |              |              | CSO 112            | Partial Separation                                  | PS         |           | 0.7                          |
| 447   | EO3E                                     |       |              |              |              |                    |                                                     |            |           |                              |
| 448   | 10144500                                 |       |              |              |              | CSO 459            | Partial Separation                                  | PS         |           | 0.3                          |
| 449   | 10144540                                 |       |              |              |              | CSO 687            | Partial Separation                                  | PS         |           | 2.6                          |
| 450   | 10144620                                 |       |              |              |              | CSO 460/458        | Consolidate with CSO 458                            | CONV       |           | 14.7                         |
| 451   | UNCFR                                    |       |              |              |              |                    |                                                     |            |           |                              |
| 452   | 10145380                                 |       |              |              |              |                    | To Be Determined                                    | TBD        |           |                              |
| 453   | 10143120                                 |       |              |              |              | CSO 33             | TBD                                                 | TBD        |           | 15.1                         |
| 454   | 10142800                                 |       |              |              |              | CSO 10             | TBD                                                 | TBD        |           | 81.4                         |
| 455   | 10142820                                 |       |              |              |              | CSO 11             | TBD                                                 | TBD        |           | 6.7                          |
| 456   | 10142840                                 |       |              |              |              | CSO 12             | TBD                                                 | TBD        |           | 76.4                         |
| 457   | 10142860                                 |       |              |              |              | CSO 13             | TBD                                                 | TBD        |           | 11.2                         |
| 458   | 10142880                                 |       |              |              |              | CSO 14             | TBD                                                 | TBD        |           | 15.3                         |
| 459   | 10142900                                 |       |              |              |              | CSO 15             | TBD                                                 | TBD        |           | 24.3                         |
| 460   | 10143280                                 |       |              |              |              | CSO 22             | TBD                                                 | TBD        |           | 14.5                         |
| 461   | 10143320                                 |       |              |              |              | CSO 23             | TBD                                                 | TBD        |           | 19.9                         |
| 462   | 10143300                                 |       |              |              |              | CSO 24             | TBD                                                 | TBD        |           | 36.6                         |
| 463   | 10143020                                 |       |              |              |              | CSO 482            | TBD                                                 | TBD        |           | 105.5                        |
| 464   | 10143060                                 |       |              |              |              | CSO 28             | TBD                                                 | TBD        |           | 10.3                         |
| 465   | 10143080                                 |       |              |              |              | CSO 29             | TBD                                                 | TBD        |           | 1.7                          |
| 466   | 10143100                                 |       |              |              |              | CSO 30             | TBD                                                 | TBD        |           | 24.5                         |
| 467   | 10143160                                 |       |              |              |              | CSO 025A           | TBD                                                 | TBD        |           | 8.4                          |
| 468   | 10143182                                 |       |              |              |              | CSO Esfe           | TBD                                                 | TBD        |           | -                            |
| 469   | 10143240                                 |       |              |              |              | CSO 18             | TBD                                                 | TBD        |           | 8.6                          |
| 470   | 10143260                                 |       |              |              |              | CSO 21             | TBD                                                 | TBD        |           | 31.9                         |
| 471   | 10143340                                 |       |              |              |              | CSO 017B           | TBD                                                 | TBD        |           | 2.9                          |
| 472   | TOTAL PHASE 2 WITHOUT PHASE 2 ALLOWANCES |       | \$ 182,720   | \$ 2,015,466 | \$ 833       |                    |                                                     |            |           |                              |

NOTES: 1. PROJECT COMPLETE AND IN SERVICE AT SPECIFIED CAPACITY

2. FOR ALL PROJECTS WITH EHRT TECHNOLOGY SHOWING IS REMAINING UNTREATED OVERFLOW - SEE ATTACHMENT 5.

3. INFORMATION RELATED TO THIS PROJECT IS PRELIMINARY AND SUBJECT TO CHANGE BASED ON FURTHER STUDY AS SET FORTH IN PARAGRAPH A.3. OF THE WWIP

4. CAPP DESIGN: ALL CAPP SEWER PROJECTS WILL BE DESIGNED TO MEET THE 10 YEAR DESIGN STORM EVENT. ALL CAPP PUMP STATION AND STORAGE FACILITIES WILL BE DESIGNED TO MEET THE 2 YEAR DESIGN STORM EVENT.

5. THE 2 AND 10 YEAR DESIGN STORMS ARE SCS TYPE II - 24 HOUR EVENTS.

6. FOR THESE RTC PROJECTS, THE STATED REDUCTION IN THE TYPICAL YEAR CSO DISCHARGE VOLUME SHALL ALSO BE THE PERFORMANCE CRITERIA FOR THE FACILITY.

MSDGC'S TYPICAL RAINFALL YEAR (1970). COMPLIANCE WITH THESE CRITERIA WILL BE EVALUATED BY IMPLEMENTATION OF A POST CONSTRUCTION MONITORING PROGRAM (WHICH WILL BE SUBMITTED TO THE REGULATORY AGENCIES FOR REVIEW AND APPROVAL IN ACCORDANCE WITH THE GLOBAL CONSENT DECREE) THAT WILL UTILIZE MSDGC'S HYDROLOGIC AND HYDRAULIC MODEL TO NORMALIZE THE RESULTS OF THE POST CONSTRUCTION MONITORING TO THE TYPICAL YEAR



**Table 1**  
**2006 Data**

|                          | <u>Equivalent<br/>Meters</u> | <u>Billed<br/>Volume</u><br>ccf | <u>Customer</u><br>ccf     | <u>I/I</u><br><u>Volume</u><br>ccf | <u>Total</u><br>ccf | <u>Total</u><br>ccf        |
|--------------------------|------------------------------|---------------------------------|----------------------------|------------------------------------|---------------------|----------------------------|
| <b>By Customer Class</b> |                              |                                 |                            |                                    |                     |                            |
| Resid-Q                  | 231,193                      | 16,797,000                      | 19,327,200                 | 3,840,175                          | 23,167,375          | 39,964,375                 |
| Comm-Q                   | 45,054                       | 3,475,900                       | 3,766,400                  | 794,700                            | 4,561,100           | 8,037,000                  |
| Ind-Q                    | 10,225                       | 1,013,700                       | 854,800                    | 231,800                            | 1,086,600           | 2,100,300                  |
| MF-Q                     | 22,130                       | 3,321,300                       | 1,850,000                  | 759,300                            | 2,609,300           | 5,930,600                  |
| Resid-M                  | 624                          | 1,158,400                       | 52,200                     | 264,800                            | 317,000             | 1,475,400                  |
| Comm-M                   | 5,581                        | 4,887,100                       | 466,600                    | 1,117,300                          | 1,583,900           | 6,471,000                  |
| Ind-M                    | 20,275                       | 10,188,300                      | 1,694,900                  | 2,329,300                          | 4,024,200           | 14,212,500                 |
| <b>Total</b>             | <b>335,082</b>               | <b>40,841,700</b>               | <b>28,012,125</b><br>75.0% | <b>9,337,375</b><br>25.0%          | <b>37,349,500</b>   | <b>78,191,175</b>          |
| <b>Total Residential</b> |                              | <b>21,276,700</b>               | <b>52.1%</b>               |                                    |                     | <b>47,370,375</b><br>60.6% |

**Excerpt from 2005 Rate Study.**

Wastewater collected and treated by the District consists of two elements: (1) contributed sanitary wastewater flow, and (2) infiltration/ inflow of ground water and stormwater runoff into the sewers. Contributed wastewater flow is that portion of the annual water use or other discharge of each customer class which enters the sanitary wastewater system. Estimates of the contributed volume of each class is generally based upon wastewater billing records that exclude estimated water use not reaching the wastewater system, such as that used for lawn sprinkling and car washing or included in manufactured products.

Based on a historical analysis, it is estimated that the amount of flow entering the sewers through I/I will average 48 percent of the total wastewater flow reaching the treatment plants. Each customer class should bear its proportionate share of the costs associated with I/I as the wastewater system must be adequate to convey and process the total flow. Recognizing that the major cost responsibility for I/I is allocable on an individual connection basis, three-fourths of the I/I volume is allocated to customer classes based on estimated customer equivalent connections with the remaining one-fourth allocated on the basis of contributed volume.

The responsibility for collection system capacity cost varies with the estimated peak flow rates of contributed wastewater and infiltration attributable to each customer class. Infiltration/inflow is estimated to comprise 64 percent of the total peak flow.

## **Attachment 4**

|   |                                                |           | <b>2009</b>          |           | <b>2010</b>          |
|---|------------------------------------------------|-----------|----------------------|-----------|----------------------|
| 1 | <b>MSD Green program</b>                       | \$        | 8,000,000.00         | \$        | 15,000,000.00        |
| 2 | <b>System-wide RDI/I</b>                       | \$        | 2,750,000.00         | \$        | 527,600.00           |
| 3 | <b>Trenchless technology - Manholes</b>        | \$        | 1,165,800.00         | \$        | 1,235,600.00         |
| 4 | <b>Trenchless Technology - Sewers</b>          | \$        | 6,993,500.00         | \$        | 7,413,700.00         |
| 5 | <b>Urgent Capacity Response</b>                | \$        | 2,331,100.00         | \$        | 2,471,100.00         |
| 6 | <b>WIB Prevention Program</b>                  | \$        | 2,800,000.00         | \$        | 2,750,000.00         |
| 7 | <b>Wet Weather Strategy Development</b>        | \$        | 1,165,700.00         | \$        | 1,235,500.00         |
| 8 | <b>Home Sewer Treatment Systems Extensions</b> |           | \$1,969,695.00       |           | \$917,600.00         |
|   | <b>Sub Total - per year</b>                    | <b>\$</b> | <b>27,175,795.00</b> | <b>\$</b> | <b>31,551,100.00</b> |

**GREEN PROGRAM**

|   |                      | 2009            | 2010             |
|---|----------------------|-----------------|------------------|
| A | LID Demonstration    | \$ 5,000,000.00 | \$ 5,000,000.00  |
| B | Regional BMP         |                 |                  |
|   | Planning             | \$ 1,000,000.00 | \$ 2,000,000.00  |
|   | Design               | \$ 500,000.00   | \$ 3,000,000.00  |
|   | Construction         |                 | \$ 2,000,000.00  |
| C | Large Scale Projects |                 |                  |
|   | Lick Run - Planning  | \$ 1,500,000.00 | \$ 2,000,000.00  |
|   | Design               |                 | \$ 1,000,000.00  |
|   | TOTAL                | \$ 8,000,000.00 | \$ 15,000,000.00 |

# Green Demonstration Program Summary

| Project Status                                      | Project Name                      | Project Applicant        | Setting Type            | Part 1: Approved Funds | Part 1: Requested Funds | Part 2: Approved Funds | Part 2: Requested Funds | Control Type                  | Runoff Source    |
|-----------------------------------------------------|-----------------------------------|--------------------------|-------------------------|------------------------|-------------------------|------------------------|-------------------------|-------------------------------|------------------|
| IA Expression of Interest Projects in this phase: 4 |                                   |                          |                         |                        |                         |                        |                         |                               |                  |
|                                                     | Enright EcoVillage Street Bumpout | Schenk, Jim              |                         | \$0.00                 | \$0.00                  | \$0.00                 | \$0.00                  |                               | Surface          |
|                                                     | Jefferson Quad                    | University of Cincinnati | Institution Educational | \$0.00                 | \$0.00                  | \$0.00                 | \$0.00                  | To be determined              |                  |
|                                                     | Price Hill Pilot                  | MSD                      | Resident Single Family  | \$0.00                 | \$0.00                  | \$0.00                 | \$0.00                  | Curb Extension                | Surface          |
|                                                     |                                   |                          |                         |                        |                         |                        |                         | Pervious Pavement, Concrete   | Surface          |
|                                                     |                                   |                          |                         |                        |                         |                        |                         | Rain Garden: Natural          | Roof and surface |
|                                                     |                                   |                          |                         |                        |                         |                        |                         | Rainwater Harvesting: Barrels | Roof             |
|                                                     | Santa Maria Community Center      | Jess Linz                |                         | \$0.00                 | \$0.00                  | \$0.00                 | \$0.00                  | Rain Garden: Natural          | Roof             |

Notes: This is a research and development program exploring the use of green storm water controls to manage storm water in the Greater Cincinnati MSD combined sewer areas. These research projects will be monitored to determine the relative effectiveness of a wide variety of green controls in reducing the volume of storm water runoff reaching the combined sewer system. Various design variables, runoff sources, and settings are being explored through partnerships with a wide variety of public and private entities to determine which controls perform most cost effectively and could be targeted in a larger green infrastructure program. The program is set up in two phases: Part 1 Concept and Part 2 Construction. Not all proposed projects are asked to participate in this program. Only approved Part 1 project applicants are invited to submit Part 2 applications for construction. There are multiple stages in each phase and each project only occupies one stage at a time in this report. Part 1 and Part 2 projects have the numbers "1" and "2" respectively in their status designation. The green storm water controls presented in this report are preliminary until a Part 2 Construction Application has been approved and the funding allocated. Some of the Part 1 requested funding includes approximate construction costs if those costs are presented in the Part 1 Concept Application. Questions regarding these projects should be directed to the program manager.



| Project Status                    | Project Name                         | Project Applicant         | Facility Type           | Part 1 Approved Funds | Part 1 Estimated Funds | Part 2 Approved Funds | Part 2 Estimated Funds | Control Type                    | Runoff Source |
|-----------------------------------|--------------------------------------|---------------------------|-------------------------|-----------------------|------------------------|-----------------------|------------------------|---------------------------------|---------------|
| <b>IB Part 1 Application Sent</b> |                                      |                           |                         |                       |                        |                       |                        |                                 |               |
| <b>Projects in this phase: 12</b> |                                      |                           |                         |                       |                        |                       |                        |                                 |               |
|                                   | 5500 Ridge Avenue                    | Vandercar                 | Office/Retail Large     | \$0.00                | \$0.00                 | \$0.00                | \$0.00                 | Bioretention Basin              | Surface       |
|                                   |                                      |                           |                         |                       |                        |                       |                        | Rainwater Harvesting: Cistern   | Roof          |
|                                   | Amberley Village Green Project       | Amberley Village          |                         | \$0.00                | \$0.00                 | \$0.00                | \$0.00                 | Curb Extension                  | Surface       |
|                                   | CPS AMIS                             | Cincinnati Public Schools | Institution Educational | \$0.00                | \$0.00                 | \$0.00                | \$0.00                 | Bioretention Basin              | Surface       |
|                                   | CPS College Hill Elementary          | Cincinnati Public Schools | Institution Educational | \$0.00                | \$0.00                 | \$0.00                | \$0.00                 | Pervious Pavement: Concrete     | Surface       |
|                                   | CPS Daler Montessori School          | Cincinnati Public Schools | Institution Educational | \$8,860.00            | \$0.00                 | \$0.00                | \$0.00                 | Bioswale                        | Surface       |
|                                   |                                      |                           |                         |                       |                        |                       |                        | Pervious Pavement: Concrete     | Surface       |
|                                   |                                      |                           |                         |                       |                        |                       |                        | Rainwater Harvesting: Barrels   | Roof          |
|                                   | CPS New Evanston                     | Cincinnati Public Schools | Institution Educational | \$0.00                | \$0.00                 | \$0.00                | \$0.00                 | Bioswale                        | Surface       |
|                                   |                                      |                           |                         |                       |                        |                       |                        | Green Roof: Extensive (shallow) | Roof          |
|                                   |                                      |                           |                         |                       |                        |                       |                        | Pervious Pavement: Concrete     | Surface       |
|                                   | CPS Rotherberg School                | Cincinnati Public Schools | Institution Educational | \$0.00                | \$0.00                 | \$0.00                | \$0.00                 | Bioretention Basin              | Surface       |
|                                   |                                      |                           |                         |                       |                        |                       |                        | Green Roof: Modular             | Roof          |
|                                   | CPS Western Hills- Dater High School | Cincinnati Public Schools | Institution Educational | \$0.00                | \$0.00                 | \$0.00                | \$0.00                 | Bioretention Basin              |               |
|                                   | CPS Westwood Elementary              | Cincinnati Public Schools | Institution Educational | \$0.00                | \$0.00                 | \$0.00                | \$0.00                 | Green Roof: Extensive (shallow) | Roof          |
|                                   |                                      |                           |                         |                       |                        |                       |                        | Pervious Pavement: Concrete     | Surface       |
|                                   |                                      |                           |                         |                       |                        |                       |                        | Pervious Pavement: Concrete     | Surface       |
|                                   |                                      |                           |                         |                       |                        |                       |                        | Rainwater Harvesting: Barrels   | Roof          |
|                                   | Lunken Airport                       | Cincinnati DOTE           | Institution Other       | \$0.00                | \$0.00                 | \$0.00                | \$0.00                 | To be determined                |               |
|                                   | Mt. Lookout Square                   | Cincinnati DOTE           | Roads Local             | \$0.00                | \$0.00                 | \$0.00                | \$0.00                 | Pervious Pavement: Asphalt      | Surface       |
|                                   | Westwood Development                 | Duffy, Carolyn            | Office/Retail Small     | \$0.00                | \$0.00                 | \$0.00                | \$0.00                 | Pervious Pavement: Asphalt      | Surface       |

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| Project Status | Project Name | Project Applicant | Setting Type | Part 1<br>Requested<br>Funds | Part 1<br>Approved<br>Funds | Part 2<br>Requested<br>Funds | Part 2<br>Approved<br>Funds | Control Type | Runoff Source |
|----------------|--------------|-------------------|--------------|------------------------------|-----------------------------|------------------------------|-----------------------------|--------------|---------------|
|----------------|--------------|-------------------|--------------|------------------------------|-----------------------------|------------------------------|-----------------------------|--------------|---------------|

**Projects in this phase: 3**

**ID Part I Under First Review**

|                              |                                 |                            |  |              |        |             |        |                             |                  |
|------------------------------|---------------------------------|----------------------------|--|--------------|--------|-------------|--------|-----------------------------|------------------|
| City of Wyoming Rain Gardens | Wyoming Environmental Commis    | Institution Govt Municipal |  | \$0.00       | \$0.00 | \$10,000.00 | \$0.00 | Rain Garden: Natural        | Surface          |
| Evanston Aquatic Center      | Cincinnati Recreation Commissio |                            |  | \$15,000.00  | \$0.00 | \$0.00      | \$0.00 | Bioretention Basin          | Surface          |
|                              |                                 |                            |  |              |        |             |        | Pervious Pavement: Concrete | Surface          |
|                              |                                 |                            |  |              |        |             |        | Pervious Pavement: Pavers   | Surface          |
| Green Streets                | City of Cincinnati              | Roads Local                |  | \$241,000.00 | \$0.00 | \$0.00      | \$0.00 | Bioretention Trench         |                  |
|                              |                                 |                            |  |              |        |             |        | Curb Extension              |                  |
|                              |                                 |                            |  |              |        |             |        | Pervious Pavement: Concrete | Roof and surface |
|                              |                                 |                            |  |              |        |             |        | Rain Garden: Urban Planter  |                  |

**IE Part I Information Needed**

**Projects in this phase: 6**

|                          |                                   |                          |  |             |        |        |        |                                 |                  |
|--------------------------|-----------------------------------|--------------------------|--|-------------|--------|--------|--------|---------------------------------|------------------|
| Barrett Condo Green Roof | Barrett, Catherine                | Resident Multiple Family |  | \$15,000.00 | \$0.00 | \$0.00 | \$0.00 | Green Roof: Extensive (shallow) | Roof             |
| Dent                     | Dent, Wade                        | Resident Multiple Family |  | \$0.00      | \$0.00 | \$0.00 | \$0.00 | Rainwater Harvesting: Cistern   | Roof             |
| Green Off the Grid       | Cincinnati State Technical Colleg | Institution Educational  |  | \$0.00      | \$0.00 | \$0.00 | \$0.00 | To be determined                | Roof and surface |
| O'Neal Green Roof 1      | O'Neal, Todd                      | Resident Single Family   |  | \$10,000.00 | \$0.00 | \$0.00 | \$0.00 | Green Roof: Extensive (shallow) | Roof             |
| O'Neal Green Roof 2      | O'Neal, Todd                      | Resident Multiple Family |  | \$0.00      | \$0.00 | \$0.00 | \$0.00 | Green Roof: Extensive (shallow) | Roof             |
| The Arbors               | City Lands Development            | Resident Single Family   |  | \$21,000.00 | \$0.00 | \$0.00 | \$0.00 | Pervious Pavement: Asphalt      | Surface          |
|                          |                                   |                          |  |             |        |        |        | Rain Garden: Natural            | Surface          |

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| Project Status                   | Project Name | Project Applicant | Staging Type        | Part 1 Requested Funds | Part 1 Approved Funds | Part 2 Requested Funds | Part 2 Approved Funds | Control Type                    | Runoff Source    |
|----------------------------------|--------------|-------------------|---------------------|------------------------|-----------------------|------------------------|-----------------------|---------------------------------|------------------|
| <b>IF Part 1 Under Revision</b>  |              |                   |                     |                        |                       |                        |                       |                                 |                  |
| <b>Projects in this phase: 4</b> |              |                   |                     |                        |                       |                        |                       |                                 |                  |
| American Can Site Development    |              | American Can LLC  | Office/Retail Large | \$44,000.00            | \$0.00                | \$0.00                 | \$0.00                | Bioswale                        | Surface          |
|                                  |              |                   |                     |                        |                       |                        |                       | Green Roof: Extensive (shallow) | Roof             |
|                                  |              |                   |                     |                        |                       |                        |                       | Pervious Pavement: Asphalt      | Surface          |
|                                  |              |                   |                     |                        |                       |                        |                       | Pervious Pavement: Concrete     | Surface          |
|                                  |              |                   |                     |                        |                       |                        |                       | Pervious Pavement: Grids        | Surface          |
|                                  |              |                   |                     |                        |                       |                        |                       | Pervious Pavement: Pavers       | Surface          |
|                                  |              |                   |                     |                        |                       |                        |                       | Rain Garden: Natural            | Surface          |
|                                  |              |                   |                     |                        |                       |                        |                       | To be determined                | Surface          |
|                                  |              |                   |                     |                        |                       |                        |                       | Bioswale                        | Roof and surface |
|                                  |              |                   |                     |                        |                       |                        |                       | Rainwater Harvesting: Barrels   | Roof             |

|                                             |                           |                            |              |        |        |        |        |                  |                  |
|---------------------------------------------|---------------------------|----------------------------|--------------|--------|--------|--------|--------|------------------|------------------|
| Burnet Woods Park CSO Control               | Cincinnati Park Board     | Large Open Areas           | \$172,000.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | To be determined | Surface          |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
| Cincinnati Business Development & Permit Co | City of Cincinnati        | Institution Govt Municipal | \$0.00       | \$0.00 | \$0.00 | \$0.00 | \$0.00 | Bioswale         | Roof and surface |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
| CPS Pleasant Ridge Montessori               | Cincinnati Public Schools | Institution Educational    | \$0.00       | \$0.00 | \$0.00 | \$0.00 | \$0.00 | Bioswale         | Surface          |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |
|                                             |                           |                            |              |        |        |        |        |                  |                  |

|                                  |                           |                            |              |             |             |        |        |                            |         |
|----------------------------------|---------------------------|----------------------------|--------------|-------------|-------------|--------|--------|----------------------------|---------|
| <b>II Part 1 Approved</b>        |                           |                            |              |             |             |        |        |                            |         |
| <b>Projects in this phase: 3</b> |                           |                            |              |             |             |        |        |                            |         |
| 1600 East Street Rain Garden     | MSDGC                     | Institution Govt Municipal | \$369,659.00 | \$15,000.00 | \$0.00      | \$0.00 | \$0.00 | Rain Garden: Natural       | Surface |
|                                  |                           |                            |              |             |             |        |        |                            |         |
| Christ Hospital Bioswales        | Christ Hospital           | Institution Hospital/Churc | \$4,800.00   | \$4,800.00  | \$43,000.00 | \$0.00 | \$0.00 | Biodivulution Bash         | Surface |
|                                  |                           |                            |              |             |             |        |        |                            |         |
| CPS Kligour Elementary           | Cincinnati Public Schools | Institution Educational    | \$25,000.00  | \$25,000.00 | \$0.00      | \$0.00 | \$0.00 | Pervious Pavement: Asphalt | Surface |
|                                  |                           |                            |              |             |             |        |        |                            |         |

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| Project Status              | Project Name                                 | Project Applicant                | Siting Type                | Part 1                    |                   | Part 2             |                   | Control Type                                                     | Runoff Source    |
|-----------------------------|----------------------------------------------|----------------------------------|----------------------------|---------------------------|-------------------|--------------------|-------------------|------------------------------------------------------------------|------------------|
|                             |                                              |                                  |                            | Requested<br>Funds        | Approved<br>Funds | Requested<br>Funds | Approved<br>Funds |                                                                  |                  |
| IJ Part I Not Approved      |                                              |                                  |                            | Projects in this phase: 4 |                   |                    |                   |                                                                  |                  |
|                             | 1600 Gest Street BMP Study                   | MSDGC                            | Institution Govt Municipal | \$185,000.00              | \$0.00            | \$0.00             | \$0.00            | To be determined                                                 | Roof and surface |
|                             | Mt. Washington Green Demonstration Project   | Hillside Trust                   | Institution Hospital/Churc | \$0.00                    | \$0.00            | \$0.00             | \$0.00            | Bioswale                                                         | Surface          |
|                             | Spring Grove Avenue Rain Gardens             | Cincinnati DOTE                  | Roads Local                | \$86,000.00               | \$0.00            | \$0.00             | \$0.00            | Rain Garden: Natural                                             | Surface          |
|                             | Springfield Township Schools Green Curriculu | GAIA Foundation                  |                            | \$1,800.00                | \$0.00            | \$0.00             | \$0.00            | Other                                                            |                  |
| IL Part I Funding Agreement |                                              |                                  |                            | Projects in this phase: 1 |                   |                    |                   |                                                                  |                  |
|                             | Union Terminal Green Roof                    | Cincinnati Museum Center         | Institution Govt Municipal | \$31,919.00               | \$10,000.00       | \$212,795.00       | \$0.00            | Green Roof: Extensive (shallow)<br>Rainwater Harvesting: Barrels | Roof<br>Roof     |
| IM Part I Complete          |                                              |                                  |                            | Projects in this phase: 2 |                   |                    |                   |                                                                  |                  |
|                             | CPS School Study                             | Cincinnati Public Schools        | Institution Educational    | \$0.00                    | \$0.00            | \$0.00             | \$0.00            | Other                                                            |                  |
|                             | Fire Station 51 Rain Garden                  | Cincinnati City Facility Managem | Institution Govt Municipal | \$0.00                    | \$0.00            | \$0.00             | \$0.00            | Rain Garden: Natural                                             | Surface          |

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| Project Status                |           | Project Name                  |                            | Project Applicant |             | Siting Dist  |           | Part 1   |           | Part 2   |           | Part 2   |           | Control Type |                                 | Runoff Source    |                  |
|-------------------------------|-----------|-------------------------------|----------------------------|-------------------|-------------|--------------|-----------|----------|-----------|----------|-----------|----------|-----------|--------------|---------------------------------|------------------|------------------|
| Approved                      | Submitted | Approved                      | Submitted                  | Approved          | Submitted   | Approved     | Submitted | Approved | Submitted | Approved | Submitted | Approved | Submitted | Approved     | Submitted                       | Approved         | Submitted        |
| 2A Part 2 Application Sent    |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
| Projects in this phase: 9     |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
| American Red Cross Building   |           | American Red Cross            | Institution Other          | \$22,300.00       | \$22,300.00 | \$0.00       | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00       | Biofiltration Trench            | Surface          | Surface          |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
| CPS Clark Montessori          |           | Cincinnati Public Schools     | Institution Educational    | \$19,000.00       | \$19,000.00 | \$0.00       | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00       | Biofiltration Basin             | Surface          | Surface          |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
| CPS Hartwell                  |           | Cincinnati Public Schools     | Institution Educational    | \$26,200.00       | \$26,200.00 | \$0.00       | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00       | Green Roof: Extensive (shallow) | Roof             | Roof             |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
| CPS North Avondale Montessori |           | Cincinnati Public Schools     | Institution Educational    | \$9,800.00        | \$9,800.00  | \$0.00       | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00       | Bioswale                        | Surface          | Surface          |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
| CPS Sands Montessori          |           | Cincinnati Public Schools     | Institution Educational    | \$14,500.00       | \$14,500.00 | \$0.00       | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00       | Bioswale                        | Surface          | Surface          |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
| Hixson Building               |           | Hixson Properties LLC         | Office/Retail Large        | \$0.00            | \$0.00      | \$500,000.00 | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00       | Green Roof: Intensive (deep)    | Roof             | Roof             |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
| Osborn Alley                  |           | Cincinnati DOTE               | Roads Local                | \$6,000.00        | \$6,000.00  | \$75,000.00  | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00       | Other                           | Roof and surface | Roof and surface |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
| Pleasant Ridge Park           |           | Pleasant Ridge Community Coun | Institution Hospital/Churc | \$6,500.00        | \$5,000.00  | \$0.00       | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00       | Rain Garden: Natural            | Surface          | Surface          |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
| Zoo African Savannah          |           | Cincinnati Zoo                | Institution Hospital/Churc | \$20,000.00       | \$20,000.00 | \$0.00       | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00   | \$0.00    | \$0.00       | Bioswale                        | Surface          | Surface          |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |
|                               |           |                               |                            |                   |             |              |           |          |           |          |           |          |           |              |                                 |                  |                  |

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| Project Status | Project Name         | Project Address | Setting Type                | Part 1 Requested Fund | Part 1 Approved Fund | Part 2 Requested Fund | Part 2 Approved Fund | Control Type                  | Runoff Source |
|----------------|----------------------|-----------------|-----------------------------|-----------------------|----------------------|-----------------------|----------------------|-------------------------------|---------------|
|                | Zoo African Savannah | Cincinnati Zoo  | Institution Hospital/Church | \$20,000.00           | \$20,000.00          | \$0.00                | \$0.00               | Pervious Pavement: Asphalt    | Surface       |
|                |                      |                 |                             |                       |                      |                       |                      | Pervious Pavement: Concrete   | Surface       |
|                |                      |                 |                             |                       |                      |                       |                      | Rainwater Harvesting: Cistern | Roof          |

### 2C Part 2 Technical Review

| Projects in this phase: 1 |                           |                         |             |             |              |        |        |                                 |         |
|---------------------------|---------------------------|-------------------------|-------------|-------------|--------------|--------|--------|---------------------------------|---------|
| CPS Telt IT               | Cincinnati Public Schools | Institution Educational | \$13,800.00 | \$13,800.00 | \$465,000.00 | \$0.00 | \$0.00 | Green Roof: Extensive (shallow) | Roof    |
|                           |                           |                         |             |             |              |        |        | Rain Garden: Natural            | Surface |

### 2D Part 2 Cost Review

| Projects in this phase: 1 |                |             |        |        |              |        |        |                             |         |
|---------------------------|----------------|-------------|--------|--------|--------------|--------|--------|-----------------------------|---------|
| Oakley Square             | Cincinnati DOT | Roads Local | \$0.00 | \$0.00 | \$252,000.00 | \$0.00 | \$0.00 | Pervious Pavement: Concrete | Surface |
|                           |                |             |        |        |              |        |        | Rain Garden: Urban Planter  | Surface |

### 2E Part 2 Information Needed

| Projects in this phase: 1        |                     |                         |             |             |              |        |        |                                 |                  |
|----------------------------------|---------------------|-------------------------|-------------|-------------|--------------|--------|--------|---------------------------------|------------------|
| Green Station (aka Off the Grid) | Civic Garden Center | Special Learning Center | \$30,000.00 | \$30,000.00 | \$500,000.00 | \$0.00 | \$0.00 | Bioretention                    | Surface          |
|                                  |                     |                         |             |             |              |        |        | Green Roof: Extensive (shallow) | Roof             |
|                                  |                     |                         |             |             |              |        |        | Green Roof: Intensive (deep)    | Roof             |
|                                  |                     |                         |             |             |              |        |        | Green Roof: Modified            | Roof             |
|                                  |                     |                         |             |             |              |        |        | Pervious Pavement: Asphalt      | Surface          |
|                                  |                     |                         |             |             |              |        |        | Pervious Pavement: Concrete     | Surface          |
|                                  |                     |                         |             |             |              |        |        | Pervious Pavement: Pavers       | Surface          |
|                                  |                     |                         |             |             |              |        |        | Rain Garden: Natural            | Surface          |
|                                  |                     |                         |             |             |              |        |        | Rainwater Harvesting: Barrels   | Roof             |
|                                  |                     |                         |             |             |              |        |        | Rainwater Harvesting: Cistern   | Roof and surface |

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| Project Status                          | Project Name       | Project Applicant | Setting Type               | Part 1: Estimated Fund | Part 1: Approved Fund | Part 2: Requested Fund | Part 2: Approved Fund | Control Type                  | Runoff Source    |
|-----------------------------------------|--------------------|-------------------|----------------------------|------------------------|-----------------------|------------------------|-----------------------|-------------------------------|------------------|
| <b>2) Part 2 Funding Agreement</b>      |                    |                   |                            |                        |                       |                        |                       |                               |                  |
| <b>Projects in this phase: 1</b>        |                    |                   |                            |                        |                       |                        |                       |                               |                  |
|                                         | Comer Alley        | Cincinnati DOTE   | Roads Local                | \$0.00                 | \$0.00                | \$31,000.00            | \$31,000.00           | Pervious Pavement: Pavers     | Roof and surface |
| <b>2) Part 2 Implementation</b>         |                    |                   |                            |                        |                       |                        |                       |                               |                  |
| <b>Projects in this phase: 1</b>        |                    |                   |                            |                        |                       |                        |                       |                               |                  |
|                                         | Zoo Main Entry     | Cincinnati Zoo    | Institution Hospital/Churc | \$15,000.00            | \$15,000.00           | \$380,460.00           | \$301,783.00          | Bioswale                      | Surface          |
|                                         |                    |                   |                            |                        |                       |                        |                       | Pervious Pavement: Concrete   | Surface          |
|                                         |                    |                   |                            |                        |                       |                        |                       | Pervious Pavement: Pavers     | Surface          |
|                                         |                    |                   |                            |                        |                       |                        |                       | Rain Garden: Natural          | Surface          |
|                                         |                    |                   |                            |                        |                       |                        |                       | Rainwater Harvesting: Barrels | Roof             |
|                                         |                    |                   |                            |                        |                       |                        |                       | Rainwater Harvesting: Cistern | Roof             |
| <b>4A Not Interested in MSD Program</b> |                    |                   |                            |                        |                       |                        |                       |                               |                  |
| <b>Projects in this phase: 1</b>        |                    |                   |                            |                        |                       |                        |                       |                               |                  |
|                                         | ASIDACO Green Roof | ASIDACO           |                            | \$0.00                 | \$0.00                | \$0.00                 | \$0.00                |                               | Roof             |

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| Project Status | Project Name | Project Applicant | Setting Type | Part 1<br>Requested<br>Funds | Part 2<br>Anticipated<br>Funds | Part 2<br>Approved<br>Funds | Control Type | Runoff Source |
|----------------|--------------|-------------------|--------------|------------------------------|--------------------------------|-----------------------------|--------------|---------------|
|----------------|--------------|-------------------|--------------|------------------------------|--------------------------------|-----------------------------|--------------|---------------|

#### 4B Referred to Cincinnati Green Roof Program Projects in this phase: 11

|                                             |                                    |                            |  |        |        |        |                                 |      |
|---------------------------------------------|------------------------------------|----------------------------|--|--------|--------|--------|---------------------------------|------|
| 700 Broadway Green Roof                     | KZF                                | Office/Retail Small        |  | \$0.00 | \$0.00 | \$0.00 | Green Roof: Extensive (shallow) | Roof |
| Cincinnati Permit Building Green Roof       | City of Cincinnati Building and Pe | Institution Govt Municipal |  | \$0.00 | \$0.00 | \$0.00 | Green Roof: Extensive (shallow) | Roof |
| Craig Green Roof                            | Craig/PB World                     |                            |  | \$0.00 | \$0.00 | \$0.00 | Green Roof: Extensive (shallow) | Roof |
| Cunningham Green Roof & Rainwater Detention | Cunningham, Kenneth                |                            |  | \$0.00 | \$0.00 | \$0.00 | Green Roof: Extensive (shallow) | Roof |
| De Groot Green Roof & Rain Gardens          | DeGroot, Joan                      | Resident Single Family     |  | \$0.00 | \$0.00 | \$0.00 | Green Roof: Extensive (shallow) | Roof |
|                                             |                                    |                            |  |        |        |        | Rain Garden: Natural            |      |
| Gadkins Green Roof                          | Gadkins                            | Resident Single Family     |  | \$0.00 | \$0.00 | \$0.00 | Green Roof: Extensive (shallow) | Roof |
| Geeding Residence Green Roof                | Dan Geeding                        | Resident Single Family     |  | \$0.00 | \$0.00 | \$0.00 | Green Roof: Extensive (shallow) | Roof |
| Spark Green Roof                            | Joanna Spark                       | Resident Single Family     |  | \$0.00 | \$0.00 | \$0.00 | Green Roof: Extensive (shallow) | Roof |
| Warm Green Roof                             | Warm/Warm Construction             |                            |  | \$0.00 | \$0.00 | \$0.00 | Green Roof: Extensive (shallow) | Roof |
| Woodys Express Car Wash                     | Larry Woodcock                     | Commercial Small           |  | \$0.00 | \$0.00 | \$0.00 | Other                           | Roof |
| Xavier Green Roof                           | Coleman, Adam                      | Institution Educational    |  | \$0.00 | \$0.00 | \$0.00 | Green Roof: Extensive (shallow) | Roof |

#### 4C External Program MSD as Partner Projects in this phase: 2

|                          |                               |                            |  |        |        |        |                      |         |
|--------------------------|-------------------------------|----------------------------|--|--------|--------|--------|----------------------|---------|
| 175 Mitchell Interchange | MSD, ODOT and Cincinnati Park | Roads Arterial             |  | \$0.00 | \$0.00 | \$0.00 | Bioretention Basin   | Surface |
| Owls Nest Rain Garden    | Cincinnati Park Board         | Institution Hospital/Churc |  | \$0.00 | \$0.00 | \$0.00 | Rain Garden: Natural | Surface |

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| Project Status                   | Project Name                  | Project Applicant             | Setting Type      | Part 1: Approved Budget | Part 2: Approved Budget | Part 2: Required Fund | Part 2: Approved Fund | Part 2: Current Type          | Runoff Source |
|----------------------------------|-------------------------------|-------------------------------|-------------------|-------------------------|-------------------------|-----------------------|-----------------------|-------------------------------|---------------|
| <b>4D Project Not Eligible</b>   |                               |                               |                   |                         |                         |                       |                       |                               |               |
| <b>Projects in this phase: 2</b> |                               |                               |                   |                         |                         |                       |                       |                               |               |
|                                  | Argo Retention Lake           | Argo, David                   |                   | \$0.00                  | \$0.00                  | \$0.00                | \$0.00                | Other                         |               |
|                                  | Childrens Home Green Controls | Children's Home of Cincinnati | Institution Other | \$0.00                  | \$0.00                  | \$0.00                | \$0.00                | Rain Garden: Natural          | Surface       |
|                                  |                               |                               |                   |                         |                         |                       |                       | Rainwater Harvesting: Barrels | Roof          |

### Green Demonstration Program Summaries

| Number of Projects in Concept Phase |            | Number of Projects in Design or Construction Phase |            |
|-------------------------------------|------------|----------------------------------------------------|------------|
| Project Status                      | # Projects | Project Status                                     | # Projects |
| 1D Part 1 Under First Review        | 3          | 2C Part 2 Technical Review                         | 1          |
| 1E Part 1 Information Needed        | 8          | 2D Part 2 Cost Review                              | 1          |
| 1F Part 1 Under Revision            | 4          | 2E Part 2 Information Needed                       | 1          |
| 1I Part 1 Approved                  | 3          | 2I Part 2 Funding Agreement                        | 1          |
| 1L Part 1 Funding Agreement         | 1          | 2J Part 2 Implementation                           | 1          |
| 2A Part 2 Application Sent          | 9          |                                                    |            |
| <b>Projects in Concept Phase</b>    | <b>26</b>  | <b>Projects in Design/Construction Phase</b>       | <b>5</b>   |

|                                       |                        |                |                                            |                        |                |
|---------------------------------------|------------------------|----------------|--------------------------------------------|------------------------|----------------|
| Concept Phase Funding Requested as of | 05/21/2009 10:37:45 AM | \$1,414,128.00 | Construction Phase Funding Requested as of | 05/21/2009 10:37:45 AM | \$2,449,255.00 |
| Concept Phase Funding Approved as of  | 05/21/2009 10:37:45 AM | \$236,400.00   | Construction Phase Funding Approved as of  | 05/21/2009 10:37:45 AM | \$332,783.00   |

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## Regional BMP's

Regional BMPs relate to green infrastructure projects affecting larger sewer sheds with anticipated stormwater capture benefits of greater than 10 million gallons.

## Regional BMP's

| 2009  | T.O No.   | Project Name                                                  | Phase | Planning Cost | Design Cost | Construction Cost | Total Cost  |
|-------|-----------|---------------------------------------------------------------|-------|---------------|-------------|-------------------|-------------|
| 1     | 078090007 | Kings Run - Stream Removal                                    | P + D | \$49,900      | \$50,000    |                   | \$99,900    |
| 2     | 028090006 | St Leo - Stream Removal                                       | P     | \$80,000      |             |                   | \$80,000    |
| 3     | 118090004 | CSO #410 - Stream Removal                                     | P + D | \$77,109      | \$77,000    |                   | \$154,109   |
| 4     | 108090003 | CSO #416 - Stream Removal<br>(Gilday Park Bioretention Basin) | P + D | \$80,559      | \$80,000    |                   | \$160,559   |
| 5     |           | 4609 Crawford - Stream Removal                                | P     | \$80,000      |             |                   | \$80,000    |
| 6     |           | 4815 Winton Road                                              | P     | \$80,000      |             |                   | \$80,000    |
| 7     |           | 2888 Marshall Ave                                             | P     | \$80,000      |             |                   | \$80,000    |
| 8     |           | 3071 Massachusetts Ave                                        | P     | \$80,000      |             |                   | \$80,000    |
| 9     |           | Blair Basin                                                   | P     | \$80,000      |             |                   | \$80,000    |
| 10    |           | MH42202005                                                    | P     | \$80,000      |             |                   | \$80,000    |
| 11    |           | MH45608036                                                    | P     | \$80,000      |             |                   | \$80,000    |
| 12    |           | MH47611006                                                    | P     | \$80,000      |             |                   | \$80,000    |
| 13    |           | MH42203004                                                    | P     | \$80,000      |             |                   | \$80,000    |
| 14    |           | MH42109031                                                    | P     | \$80,000      |             |                   | \$80,000    |
| 15    |           | MH40802001                                                    | P     | \$80,000      |             |                   | \$80,000    |
| total |           |                                                               |       | \$877,668     | \$157,000   | \$0               | \$1,374,568 |

## 2010

|   |           |                                |     |          |          |             |             |
|---|-----------|--------------------------------|-----|----------|----------|-------------|-------------|
| 1 | 078090007 | Kings Run - Stream Removal     | C   |          |          | \$3,300,000 | \$3,300,000 |
| 2 |           | St Leo - Stream Removal        | D   |          | \$80,000 |             | \$80,000    |
| 3 |           | 4609 Crawford - Stream Removal | D   |          | \$80,000 |             | \$80,000    |
| 4 |           | 4815 Winton Road               | D   |          | \$80,000 |             | \$80,000    |
| 5 |           | 2888 Marshall Ave              | D   |          | \$80,000 |             | \$80,000    |
| 6 |           | 3071 Massachusetts Ave         | D   |          | \$80,000 |             | \$80,000    |
| 7 |           | Blair Basin                    | D   |          | \$80,000 |             | \$80,000    |
| 8 |           | 2856 Fischer Place (park)      | P+D | \$80,000 | \$80,000 |             | \$160,000   |
| 9 |           | 3301 Beekman St                | P+D | \$80,000 | \$80,000 |             | \$160,000   |

|       |  |                                    |     |           |             |             |             |
|-------|--|------------------------------------|-----|-----------|-------------|-------------|-------------|
| 10    |  | 4932 Kirby Road                    | P+D | \$80,000  | \$80,000    |             | \$160,000   |
| 11    |  | 4481 Colerain Ave (from Airt Park) | P+D | \$80,000  | \$80,000    |             | \$160,000   |
| 12    |  | MH42202005                         | D   |           | \$80,000    |             | \$80,000    |
| 13    |  | MH45608036                         | D   |           | \$80,000    |             | \$80,000    |
| 14    |  | MH47611006                         | D   |           | \$80,000    |             | \$80,000    |
| 15    |  | MH42203004                         | D   |           | \$80,000    |             | \$80,000    |
| 16    |  | MH42109031                         | D   |           | \$80,000    |             | \$80,000    |
| 17    |  | MH40802001                         | D   |           | \$80,000    |             | \$80,000    |
| 18    |  | MH42315049                         | P+D | \$80,000  | \$80,000    |             | \$160,000   |
| 19    |  | MH47615013                         | P+D | \$80,000  | \$80,000    |             | \$160,000   |
| 20    |  | MH42805028                         | P+D | \$80,000  | \$80,000    |             | \$160,000   |
| 21    |  | MH45402004                         | P+D | \$80,000  | \$80,000    |             | \$160,000   |
| total |  |                                    |     | \$640,000 | \$1,600,000 | \$3,300,000 | \$5,540,000 |

## Long Term Projects

| Description                             |                                  | 2009            | 2010            |
|-----------------------------------------|----------------------------------|-----------------|-----------------|
| Land use/Community coordination         | Regional Planning Commission     | \$ 150,000.00   | \$ 175,000.00   |
| Breen BMP's Inform/Influence            | Ohio State University            | \$ 250,000.00   | \$ 275,000.00   |
| Research Support                        | University of Cincinnati         | \$ 200,000.00   | \$ 500,000.00   |
| Water quantity/quality monitoring       | USGIS/Federal EPA Joint Research | \$ 200,000.00   | \$ 300,000.00   |
| Lick Run/Muddy Creek Sewershed Planning | Strand/AECOM/Human Nature        | \$ 700,000.00   | \$ 750,000.00   |
| Lick Run- Design                        |                                  | \$              | \$ 700,000.00   |
| Muddy West - Design                     |                                  | \$              | \$ 300,000.00   |
| Sub Total                               |                                  | \$ 1,500,000.00 | \$ 3,000,000.00 |



## **Attachment 5**

### **EHRT Design and Performance Criteria**

Defendants agree to construct, according to the Design and Performance Criteria stated below, two Enhanced High Rate Treatment (as defined in Paragraph A.2 of the Final WWIP, "EHRT") Projects in Phase 1 of the WWIP. The two Phase 1 EHRT projects are 1) the EHRT Pilot Project at Werk and Westbourne, Project Number 10130740, and 2) the EHRT facility proposed as part of the LMCPR, which is subject to continuing study under the LMC Action Plan (collectively, the projects are "the Phase 1 EHRT Projects"). The Phase 1 EHRT Projects will confirm the treatment performance of the EHRT technology of high rate sedimentation treatment, with disinfection treatment and dechlorination during the recreational season.

After construction, the Phase 1 EHRT Projects will be operated and studied. The results of the studies shall be submitted to the Regulators. The design for EHRT facilities to be constructed in Phase 2 will be based on the Design Criteria below, the results of the performance studies on the Phase 1 EHRT Projects and applicable requirements of federal and state law.

#### **Design Criteria Applicable to All EHRT Facilities:**

##### **A. Design Numeric Criteria Goals**

- (1) **High Rate Sedimentation Treatment.** The EHRT facility shall be designed with the goal of achieving during the Recreation Season (May 1 to October 30) an average total suspended solids (TSS) removal rate of 70% at its design flow rate or below for all events in which the average influent solids exceed 150 mg/l, and for events in the Recreation Season in which the average influent TSS concentration is less than 150 mg/l an average effluent TSS concentration of no more than 45 mg/l.
- (2) **Disinfection Treatment.** The EHRT facility shall be designed with goals of:
  - (a) Achieving a mean of 3 to 4 log reduction of E. coli for all events during the Recreation Season at the design flow rate or below.; and
  - (b) Complying with water quality-based E. coli limitations (or other then-applicable bacteriological parameters) and disinfection residuals requirements at its design flow and all flow rates below that design flow rate.

##### **B. Design Criteria Specifics for Unit Processes**

Each EHRT facility shall include the following unit processes:

- (1) Fine screens
- (2) Coagulant-assisted sedimentation

- (3) Coagulant feed and storage
- (4) Hypochlorite disinfection
- (5) Disinfectant feed and storage
- (6) Disinfectant removal (e.g., dechlorination)

C. Each EHRT facility shall be designed with the following attributes:

- (1) Effective mixing at each point of chemical addition;
- (2) Separate sedimentation and disinfection contact zones;
- (3) A minimum total nominal detention time of 27 minutes;
- (4) A minimum nominal disinfection contact time of 10 minutes; and
- (5) A maximum nominal sedimentation zone surface loading rate of 7,000 gpd/square foot.

Performance Criteria Applicable to All EHRT Facilities: Discharges from each EHRT facility shall comply with all requirements of state and federal law applicable to such discharges, and all requirements of state and federal permits applicable to such discharges.