

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF IOWA
EASTERN DIVISION

THE UNITED STATES OF AMERICA,)	
)	
and)	
)	
THE STATE OF IOWA,)	
)	Civil Action No. 2:11-cv-01011 EJM
Plaintiffs,)	
)	
v.)	
)	<u>CONSENT DECREE</u>
THE CITY OF DUBUQUE, IOWA,)	
)	
Defendant.)	
)	
)	
)	

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WHEREAS, Plaintiff, United States of America, by authority of the Attorney General of the United States and through the undersigned attorneys, acting at the request and on behalf of the Administrator of the United States Environmental Protection Agency (EPA), and Plaintiff State of Iowa, by authority of the Attorney General of Iowa and through the undersigned attorneys, jointly filed the Complaint on April 25, 2011, seeking injunctive relief and civil penalties against Defendant City of Dubuque (City), pursuant to Sections 309(b) and (d) of the federal Clean Water Act (CWA or the Act), 33 U.S.C. §§ 1319(b) and (d), for the City's alleged discharges of pollutants, including sewage, from its sanitary sewer system into waters of the United States in violation of Section 301 of the Act, 33 U.S.C. § 1311.

WHEREAS, the State of Iowa, is a party to this action pursuant to Section 309(e) of the CWA, 33 U.S.C. § 1319(e).

WHEREAS, the City owns and operates a publicly owned treatment works as defined at 40 C.F.R. § 403.3 that includes a Water Pollution Control Plant (WPCP) and Sewer Collection System, serving residential, commercial and industrial entities throughout the City of Dubuque.

WHEREAS, the United States alleges that Defendant has violated, and could continue to violate, Sections 301 and 402 of the Clean Water Act, 33 U.S.C. §§ 1311 and 1342, by: (1) discharging untreated sewage from its publicly owned treatment works, including but not limited to Sanitary Sewer Overflows, as defined in Section IV of this Consent Decree, into the Mississippi River and its tributary, Catfish Creek; (2) discharging pollutants from its WPCP in excess of the City's National Pollutant Discharge Elimination System (NPDES) permit, and; (3) failing to comply with the Pretreatment Requirements of the City's permit.

WHEREAS, the City submitted to the Iowa Department of Natural Resources (IDNR) on January 9, 2006, a North Fork Catfish Creek Interceptor Plan designed to eliminate Sanitary Sewer Overflows to Catfish Creek, which was approved by IDNR on January 31, 2006.

WHEREAS, the City submitted to IDNR on May 29, 2008, a Dubuque Water Pollution Control Plant Facilities Plan designed, among other goals, to eliminate violations of the effluent limits in the City's NPDES permit.

WHEREAS, IDNR approved the design for the Dubuque Water Pollution Control Plant Facilities Plan and construction has begun.

WHEREAS, the City hired a Pretreatment Coordinator on or around April 1, 2009, with the goal of ensuring compliance with the Pretreatment Requirements in the City's NPDES permit.

WHEREAS, Defendant does not admit any violations or any liability arising out of the transactions or occurrences alleged in the Complaint.

WHEREAS, the Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and will avoid litigation between the Parties and this Consent Decree is fair, reasonable, and in the public interest.

NOW THEREFORE, with the consent of the Parties, **IT IS HEREBY ADJUDGED, ORDERED, AND DECREED** as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action, pursuant to Sections 309(b), 504(a), and 505(a) of the CWA, 33 U.S.C. §§ 1319(b), 1364(a), and 1365(a), and 28 U.S.C. §§ 1331, 1345 and 1355, and over the Parties. Venue lies in this District, pursuant to Sections 309(b) and 505(c) of the CWA, 33 U.S.C. §§ 1319(b) and 1365(c), and 28 U.S.C. § 1391(b), because it is the judicial district where the City is located and

where the alleged violations occurred. For purposes of this Consent Decree, or any action to enforce this Consent Decree, the City consents to the Court's jurisdiction over the City, this Consent Decree, and any such action, and further consents to venue in this judicial district.

II. APPLICABILITY

2. The provisions of this Consent Decree shall apply to, and be binding upon the City, and its officers, directors, employees, agents, servants, successors, assigns, and all persons, firms and corporations under contract with the City to perform obligations of this Consent Decree, and upon the United States, and its agencies, departments, representatives, employees, successors, and assigns, and upon the State of Iowa, and its agencies, departments, representatives, employees, successors and assigns.
3. No transfer of ownership or operation of any portion of its publicly owned treatment works, including any portion of its WPCP or Sewer Collection System, whether in compliance with the procedures of this Paragraph or otherwise, shall relieve the City of its obligation to ensure that the provisions of this Consent Decree are implemented. At least thirty (30) Days prior to such transfer, the City shall provide a copy of this Consent Decree to the proposed transferee and shall simultaneously provide written notice of the prospective transfer, together with a copy of the proposed transfer document, to the EPA, the United States Department of Justice, and the State, in accordance with Section XVII (Notices). Any attempt to transfer ownership or operation of any portion of its publicly owned treatment works without complying with this Paragraph constitutes a violation of this Consent Decree.

4. The City shall provide a copy of this Consent Decree to all officers, employees, and agents whose duties might reasonably include compliance with any provision of this Consent Decree, as well as to any contractor or consultant retained to perform work required under this Consent Decree. The City shall condition any such future contract upon performance of the work in conformity with the provisions of this Consent Decree.
5. Any action taken by any contractor or consultant retained to implement the City's obligations under this Consent Decree shall be considered an action of the City solely for purposes of determining compliance with this Consent Decree. In an action to enforce this Consent Decree, the City shall not assert as a defense against the United States and/or State the act or failure to act by any of its officers, directors, employees, agents, contractors, consultants, successors or assigns. However, this Consent Decree shall not limit the City's right to take all appropriate action against any such person or entity that causes or contributes to the City's act or failure to act.

III. PURPOSE

6. The express purpose of the Parties entering into this Consent Decree is for the City to take all necessary measures to achieve full compliance with the Clean Water Act, the regulations promulgated thereunder, the Iowa water pollution control laws, and the City's NPDES Permit, with the goal of eliminating all Sanitary Sewer Overflows (SSOs). All plans, reports, construction, remedial maintenance, and other obligations in this Consent Decree, and under any amendment to this Consent Decree, shall have the objective of ensuring that the City complies with the CWA, all applicable federal and state regulations, and the terms and conditions of its NPDES Permit.

IV. DEFINITIONS

7. Terms used in this Consent Decree that are defined in the CWA or the regulations promulgated under the CWA shall have the meanings assigned to them in the CWA or such regulations, unless otherwise provided in this Consent Decree. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:
- a. “Building/Private Property Backup” shall mean a Sanitary Sewer Overflow in the form of wastewater release or backup into a building or onto private property that is caused by blockages, flow conditions, or other malfunctions in the publicly owned treatment works. A wastewater backup or release that is caused by blockages, flow conditions, or other malfunctions of a line that is not owned by the City is not a Building/Private Property Backup for purposes of this Decree.
 - b. “Bypass” as that term is defined in 40 C.F.R. § 122.41(m) shall mean the intentional diversion of waste streams from the WPCP.
 - c. “City” shall mean the Defendant City of Dubuque, Iowa.
 - d. “Consent Decree” or “Decree” shall mean this Consent Decree and all appendices attached hereto.
 - e. “Day” or “Days” shall mean a calendar day or calendar days unless expressly stated to be a business day. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or federal or state holiday, the period shall run until the close of business of the next business day.
 - f. “Force Main” shall mean any pipe that receives and conveys, under pressure, wastewater from the discharge side of a pump. A Force Main is intended to convey wastewater under pressure.

- g. “Gravity Sewer Line” shall mean a pipe that receives, contains and conveys wastewater not normally under pressure, but is intended to flow unassisted under the influence of gravity. Gravity sewers are typically not intended to flow full under normal operating conditions.
- h. “Infiltration” shall mean water other than wastewater that enters a sewer system (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes, as defined by 40 C.F.R. § 35.2005(b)(20).
- i. “Inflow” shall mean water other than wastewater that enters a sewer system (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm water, surface runoff, street wash waters, or drainage, as defined by 40 C.F.R. § 35.2005(b)(21).
- j. “I/I” shall mean the total quantity of water from Infiltration and Inflow without distinguishing the source.
- k. “Paragraph” shall mean a portion of this Consent Decree identified by Arabic numerals.
- l. “Parties” shall mean the United States, the State of Iowa, and the City of Dubuque, Iowa.
- m. “NPDES Permit” shall mean National Pollutant Discharge Elimination System permit number IA 0044458 issued to the City pursuant to Section 402 of the

Clean Water Act, 33 U.S.C. § 1342, for the WPCP and any future extended, modified or reissued permit.

- n. “Sanitary Sewer Overflow” or “SSO” shall mean an overflow, spill, diversion, or release of wastewater from or caused by the City’s Sewer Collection System.

This term shall include:

- i. Discharges to waters of the State or United States from the City’s Sewer Collection System; and
 - ii. Any release of wastewater from the City’s publicly owned treatment works to public or private property that does not reach waters of the United States or the State, including Building/Private Property Backups;
- o. “Section” shall mean a portion of this Consent Decree identified by a Roman numeral.
- p. “Sewer Collection System” shall mean the municipal wastewater collection and wastewater transmission systems, including all pipes, interceptors, Force Mains, Gravity Sewer Lines, lift stations, pumping stations, manholes and appurtenances thereto, that are owned or operated by the City.
- q. “Sewershed” shall mean a section of the City’s WPCP that is a distinct drainage or wastewater collection area and designated as such by the City.
- r. “State” shall mean the State of Iowa.
- s. “United States” shall mean the United States of America, acting on behalf of the Environmental Protection Agency.
- t. “Water Pollution Control Plant” or “WPCP” shall mean the sewage treatment plant (or water reclamation facility) operated by the City and located at 795

Julien Dubuque Drive, Dubuque, Iowa 52003, and all components of such sewage treatment plant.

V. REMEDIAL MEASURES AND SCHEDULES

8. The City shall carry out assessments and engineering analyses necessary to identify all measures needed to ensure that its Sewer Collection System and WPCP comply with the requirements of the Clean Water Act, the regulations promulgated thereunder, and the City's NPDES Permit and Iowa water pollution laws, and then shall implement all such measures in a timely manner, with the goal of elimination of all SSOs.

9. **Short-term Remedial Measures at the WPCP**

The City shall dispose of biosolids generated at the WPCP to prevent excessive accumulation. For the purposes of this paragraph, "excessive" shall mean an amount that could allow carryover of biosolids in the effluent. The biosolids shall be handled and disposed of in compliance with 40 CFR Part 503 (Sewage Sludge Regulations) and 567 Iowa Admin. Code 67. As required by Paragraph 63, the City shall obtain all permits and approvals required to carry out this Paragraph.

10. **Short-Term Remedial Measures for SSOs**

- a. The City shall capture overflow from the manhole located on Key Way Drive between 3500 Keymeer Drive and 3507 Keystone Drive and send the waste water for treatment to the WPCP in order to eliminate SSOs.
- b. The City shall post warning signs at all SSO sites to the extent authorized by law, except signs are not necessary for residential basement backups. The signs shall be identical to Appendix E and shall stay in place for at least six (6) months after completion of the site cleanup, unless IDNR decides in its unreviewable

discretion that the sign may be posted for a shorter time period or not at all. As needed and appropriate, the City shall use off-road cleaning and inspection equipment for the maintenance of off-road sanitary sewer lines.

11. Construction Upgrade to WPCP

The City shall complete and place in service the WPCP construction upgrade as set forth in Section 7 of the Dubuque Water Pollution Control Plant Facilities Plan ("Facilities Plan," attached here as Appendix B) no later than thirty-four (34) months from Effective Date. The Facilities Plan, attached here as Appendix B, or modified design approved by IDNR, shall be incorporated by reference and fully enforceable under the terms of this Consent Decree.

12. Construction Upgrade to Sewer Collection System

- a. The City certifies, in accordance with Paragraph 87, that it has completed and placed into service the construction upgrade of the North Fork Catfish interceptor sewer, as recommended in the North Fork Catfish Creek Sanitary Trunk Sewer Study ("Interceptor Plan," attached here as Appendix C). The Interceptor Plan shall be incorporated by reference and fully enforceable under the terms of this Consent Decree.
- b. The City shall complete I&I isolation flow metering within all five sanitary Sewersheds as recommended in the Dubuque Comprehensive Sanitary Sewer Master Plan – Recommendations for Future RDII Investigations ("I&I Reduction Plan," attached here as Appendix D). The I&I reduction Plan shall be incorporated by reference and fully enforceable under the Consent Decree according to the following schedule:

Sewershed	Metering finished	Source identification finished	Corrective actions sent for approval
11	12/31/10	9/30/11	12/31/11
12	12/31/11	6/30/12	12/31/12
7	12/31/12	6/30/13	12/31/13
5	12/31/13	6/30/14	12/31/14
10	12/31/14	6/30/15	12/31/15

- c. The City certifies, in accordance with Paragraph 87, that flow meters were installed within the first Sewershed in time to collect data during 2010 rains.
- d. The City shall complete I&I source identification activities such as manhole inspections, sewer televising, smoke testing, dye testing, home inspections as necessary to identify sources of I&I within twelve (12) months of completing the I&I isolation flow metering from each Sewershed, in accordance with the schedule in subparagraph (b).
- e. The City shall provide a report outlining corrective actions to be taken and a schedule for such actions to eliminate and/or reduce I&I in that Sewershed, within six (6) months after completing the I&I source identification activities described above, in accordance with the schedule in subparagraph (b). The City's report shall be submitted for EPA and the State's approval, pursuant to Section VII (Review and Approval Procedures).
- f. The City shall implement the I&I corrective actions upon and pursuant to EPA and IDNR's approval of the schedule and the City's acquisition of the necessary construction permits,

13. Collection System Management, Operation and Maintenance (CMOM)

a. Collection System Management, Operation and Maintenance (CMOM) Program:

Within ninety (90) Days after the Effective Date of the Consent Decree the City shall submit to EPA for review and approval in accordance with the requirements of Section VII (Review and Approval Procedures), a CMOM program designed to:

- i. Eliminate SSOs from the City's collection system through adequate staffing, training and resources sufficient to minimize infiltration, inflow, and loss of water from the system, and maximize conveyance of wastewater to the treatment plant;
- ii. Implement an immediate response program to ensure quick mitigation of all SSOs, including Building / Private Property Backups (unless caused by blockage in the homeowner's lateral connection); and
- iii. Continuously prioritize areas of the collection system that need to be addressed via short term and long term solutions based in part on consideration of the frequency of SSOs and problems identified in specific areas of the collection system as identified in Paragraph 12.

b. Collection System Management, Operation, and Maintenance Program

Implementation: The City shall implement the CMOM Program within two (2) calendar months of approval by EPA.

14. Certification of Legal Authority

The City hereby certifies that it has sufficient legal authority to:

- a. Regulate volumes and content of wastewater from satellite municipalities and private sources;
 - b. Require that sewers and connections be properly designed and constructed;
 - c. Ensure that there is proper installation, testing and inspection of new and rehabilitated sewers;
 - d. Allow and require implementation of the general and specific prohibitions of the pretreatment program as defined in 40 C.F.R. § 403.5; and
 - e. Prohibit Inflow and provide mechanisms for requiring its removal.
15. The City shall provide to EPA and IDNR written certification, pursuant to Paragraph 87, that all remedial measures required by Section V have been completed and placed into service no later than June 30, 2016.

VI. DEMONSTRATION AND ELIMINATION OF SSOs

16. Following completion of the remedial measures required by Section V in accordance with the approved schedules, the City shall demonstrate for one year that all SSOs caused by insufficient capacity of the Sewer Collection System and bypasses have been eliminated. Any SSOs or bypasses caused by severe natural conditions (such as hurricanes, widespread flooding, an event triggering a declaration of disaster, and other similar conditions) shall be excluded from the foregoing requirement.
17. If following completion of the measures required by Section V, the City experiences any SSOs caused by insufficient capacity of the Sewer Collection System or any bypasses, then the City must within six (6) calendar months after the date of the SSO or bypass, submit to EPA for approval a Remedial Plan and Schedule with the goal of

eliminating all bypasses and all SSOs caused by insufficient capacity of the Sewer Collection System.

- a. The Remedial Plan and Schedule must follow sound engineering practices and the guidance provided in the appropriate sections of *Handbook: Sewer System Infrastructure Analysis and Rehabilitation*, EPA/625/6-91/030, 1991; *Existing Sewer Evaluation and Rehabilitation*, WEF MOP FD-6, 1994; and *A Guide to Short Term Flow Surveys of Sewer Systems*, WRC Engineering (Undated).
 - b. The Remedial Plan and Schedule shall include a schedule for completing the additional measures proposed therein that is as expeditious as possible. After completing the remedial projects in the Remedial Plan and Schedule, the demonstration provisions of Paragraph 16 shall again apply for the full period of one year, subject to the above exclusion for any SSOs or bypasses caused by severe natural conditions.
18. If following completion of the measures required by Section V, the City experiences O&M related SSOs, then the City shall, no later than three (3) calendar months after the date of the SSO, submit a Remedial Plan and Schedule to correct the O&M deficiency that led to the SSO and submit a report to EPA and IDNR, as required in Sections VII (Review and Approval Procedures) and VIII (Reporting Requirements), and the demonstration provisions of this Section shall again apply for the full period of one year.

VII. REVIEW AND APPROVAL PROCEDURES

19. After review of any plan, report, or other item that the City is required to submit for approval to EPA pursuant to this Consent Decree, and after consultation with IDNR, EPA

shall notify the City in writing that EPA (a) approves the submission, in whole or in part; (b) approves the complete submission or portions of the submission upon specified conditions; (c) disapproves the submission, in whole or in part, specifying the portion(s) of the submission that EPA disapproves; or (d) any combination of the above.

20. If the submission is approved pursuant to Paragraph 19(a), the City must perform all actions required by the plan, report, or other document, in accordance with the schedules and requirements of the plan, report, or other document, as approved. If the submission is conditionally approved or approved only in part, pursuant to Paragraph 19(a) or (b), the City shall, upon written direction from EPA, take all actions required by the approved plan, report, or other item that EPA determines are technically severable from any disapproved portions, subject to the City's right to dispute only the specified conditions or the disapproved portions, under Section XIV of this Decree (Dispute Resolution).
21. If the submission is disapproved in whole or in part pursuant to Paragraph 19(c), the City shall, within forty-five (45) Days or such other time as EPA and the City agree to in writing, correct all deficiencies and resubmit the plan, report, or other item, or disapproved portion thereof, for approval, in accordance with the preceding Paragraphs. If the resubmission is approved in whole or in part, the City shall proceed in accordance with the preceding Paragraph.
22. Any stipulated penalties applicable to the original submission, as provided in Section XI of this Decree (Stipulated Penalties), shall accrue during the 45-Day period or other specified period, but shall not be payable unless the resubmission is untimely or is disapproved in whole or in part. However, if the original submission was so deficient as to constitute a material breach of the City's obligations under this Decree, the stipulated

penalties applicable to the original submission shall be due and payable notwithstanding any subsequent resubmission.

23. If a resubmitted plan, report, or other item, or portion thereof, is disapproved in whole or in part, EPA may again require the City to correct any deficiencies, in accordance with the preceding Paragraphs, or may itself correct any deficiencies, subject to the City's right to invoke Dispute Resolution and the right of the EPA to seek stipulated penalties as provided in the preceding Paragraphs.
24. All plans, reports, and other items required to be submitted to EPA under this Consent Decree shall, upon approval or modification by EPA, be enforceable under this Consent Decree. In the event EPA approves or modifies a portion of a plan, report or other item required to be submitted to EPA under this Consent Decree, the approved or modified portion shall be enforceable under this Consent Decree.

VIII. REPORTING REQUIREMENTS

25. The City must submit a report to EPA and IDNR each March 31 and September 30 after the Effective Date. This Semiannual Report shall include the information set forth below regarding events or activities performed in the prior six (6) months (or, in the case of the first Semiannual Report, activities performed since the Date of Lodging).
 - a. For each SSO, the City must report the following information:
 - i. The specific (and general) location (i.e., street address and Sewershed);
 - ii. Actual or best estimate of the duration of overflow, including the actual or best estimated start date and stop date and the start time and stop time;
 - iii. Actual or best estimated volume of overflow, including actual flow metering data, where applicable, or method used to estimate volume;

- iv. The water body reached by the overflow event;
 - v. The suspected cause(s);
 - vi. Description of the SSO's effects on public health and water quality of the receiving water body, including receiving water sampling results and the presence of putrescent, unsightly or harmful bottom deposits, oil, scum and floating debris, unsightly color or turbidity, of offensive odors;
 - vii. Any and all measures taken by the City to minimize the duration and/or impacts;
 - viii. Any specific measures taken to stop the overflow event; and
 - ix. Any specific measures the City intends to use to prevent recurrence and a schedule of major milestones for those measures.
- b. The Semiannual Report must also contain a summary of the status and progress of all projects and programs required by Section V (Remedial Measures and Schedules) and VI (Demonstration and Elimination of SSOs) of this Decree, including, but not limited to:
- i. Construction upgrades;
 - ii. A summary of all information required to be submitted under its NPDES Permit in accordance with the requirements of the permit; and
 - iii. A list of all NPDES violations that have occurred at the City's WPCP within the 6-month period being reported. This listing shall include the date of the violation, the parameter exceeded, the permit limit, the reported amount, the cause, and any additional relevant information included on the DMR or in its cover letter (i.e., claim of upset, etc.).

26. All reports required to be submitted in this Section must contain a certification signed by a responsible official of the City in accordance with Paragraph 87.
27. The City must maintain copies of all written submissions prepared pursuant to this Section for five years after termination of the Decree.
28. The reporting requirements of this Consent Decree do not relieve the City of any reporting obligations required by the CWA or implementing regulations, by the City's NPDES Permit, or by any other federal, state, or local law, regulation, permit, or other requirement.
29. Any information provided pursuant to this Consent Decree may be used by the United States or the State in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law.

IX. CIVIL PENALTY

30. Within thirty (30) Days after the Effective Date of this Consent Decree, the City shall pay the sum of \$205,000 as a civil penalty, together with interest accruing from the date on which this Consent Decree is lodged with the Court, at the rate specified in 28 U.S.C. § 1961 as of the Date of Lodging.
31. The City shall pay 50% of the civil penalty due by FedWire Electronic Funds Transfer (EFT) to the U.S. Department of Justice in accordance with written instructions to be provided to the City, following entry of the Consent Decree, by the Financial Litigation Unit of the U.S. Attorney's Office for the Northern District of Iowa. Any payments received after 4:00 pm Eastern Time will be credited on the next business Day. At the time of payment, the City shall send a copy of the EFT authorization form and the EFT transaction record, together with a transmittal letter, which shall state that the payment is

for the civil penalty owed pursuant to the Consent Decree in United States of America and the State of Iowa v. City of Dubuque, and shall reference the civil action number, 2008V00041, and DOJ case number 90-5-1-1-09339, to the United States in accordance with Section XVII of this Consent Decree (Notices); by email to acctsreceivable.CINWD@epa.gov; and by mail to:

EPA Cincinnati Finance Office
26 Martin Luther King Drive
Cincinnati, Ohio 45268

32. The City shall pay 50% of the civil penalty due by mailing a check payable to the “State of Iowa” to:

David R. Sheridan
Environmental Law Division
Lucas State Office Bldg.
321 E. 12th Street, Room 018
Des Moines, IA 50319

33. The City shall not deduct any penalties paid under this Decree pursuant to this Section or Section XI (Stipulated Penalties) in calculating its federal or state income tax.

X. SUPPLEMENTAL ENVIRONMENTAL PROJECT

34. The City shall implement a Supplemental Environmental Project (“SEP”), which has the objective of securing significant environmental or public health protection and improvements. Under the SEP, the City shall reconstruct four (4) alleys in the City of Dubuque using permeable interlocking concrete pavers. The permeable pavement will allow for ground infiltration of stormwater designed to keep stormwater out of the publicly owned treatment works. A detailed description of the SEP is attached as Appendix F.

35. **SEP Work Plan.** Within thirty (30) days of the Effective Date of the Consent Decree, the City shall submit a SEP Work Plan to EPA for review and approval. The SEP Work Plan shall include a proposed schedule for completion of the SEP. In any event, the SEP shall be completed no later than December 31, 2014. The City shall satisfactorily complete the SEP in accordance with the schedule and requirements in the approved SEP Work Plan.
36. The City is responsible for satisfactory completion of the SEP in accordance with the requirements of this Consent Decree. The City may use contractors or consultants in planning and implementing the SEP.
37. With regard to the SEP, the City certifies the truth and accuracy of each of the following:
- a. that all cost information provided to EPA in connection with EPA's approval of the SEP is complete and accurate and that the City in good faith estimates that the cost to implement the SEP is \$300,000;
 - b. that, as of the date of executing this Decree, the City is not required to perform or develop the SEP by any federal, state, or local law or regulation and is not required to perform or develop the SEP by agreement, grant, or as injunctive relief awarded in any other action in any forum;
 - c. that the SEP is not a project that the City was planning or intending to construct, perform, or implement other than in settlement of the claims resolved in this Decree;
 - d. that the City has not received and will not receive credit for the SEP in any other enforcement action; and
 - e. that the City will not receive any reimbursement for any portion of the SEP from any other person.

38. SEP Completion Report. Within thirty (30) days after completion of the SEP, the City shall submit a SEP Completion Report to the United States, in accordance with Section XVII of this Consent Decree (Notices). The SEP Completion Report shall contain the following information:

- a. a detailed description of the SEP as implemented;
- b. a description of any problems encountered in completing the SEP and solutions thereto;
- c. an itemized list of all eligible SEP costs expended;
- d. certification that the SEP has been fully implemented pursuant to the provisions of this Consent Decree; and
- e. a description of the environmental and public health benefits resulting from implementation of the SEP.

39. EPA may, in its sole discretion, require information in addition to that described in the preceding Paragraph, in order to evaluate Defendant's SEP Completion Report.

40. After receiving the SEP Completion Report, the United States shall notify Defendant whether or not Defendant has satisfactorily completed the SEP. The City will be deemed to have satisfactorily completed the SEP when (1) EPA determines that the City made good faith efforts to spend the entire \$300,000 estimated SEP cost; (2) Dubuque certifies, with supporting documentation, that at least \$300,000 has been disbursed to pay for the SEP; and (3) EPA has approved the completed SEP. If Defendant has not completed the SEP in accordance with this Consent Decree, stipulated penalties may be assessed under Section XI of this Consent Decree.

41. Disputes concerning the satisfactory performance of the SEP and the amount of eligible SEP costs may be resolved under Section XIV of this Consent Decree (Dispute Resolution). No other disputes arising under this Section shall be subject to Dispute Resolution.
42. Each submission required under this Section X shall be signed by a City official with knowledge of the SEP and shall bear the certification language set forth in Section XVIII.
43. Any public statement, oral or written, in print, film, or other media, made by Defendant making reference to the SEP under this Decree shall include the following language:
“This project was undertaken in connection with the settlement of an enforcement action, United States and State of Iowa v. City of Dubuque, Iowa, taken on behalf of the U.S. Environmental Protection Agency and the State of Iowa under the Clean Water Act.”
44. For federal income tax purposes, Defendant agrees that it will neither capitalize into inventory or basis nor deduct any costs or expenditures incurred in performing the SEP.

XI. STIPULATED PENALTIES

45. **Failure to Submit Timely and Complete Documents.** The City shall pay stipulated penalties to the United States and the State, as set forth below, for each Day it fails to submit and/or complete any plans, reports or other submittals required under this Decree by the specified due dates or to make any required material changes to those documents within the required time frames. The stipulated penalties for failure to meet each document submission date shall be as follows:

<u>Period of Noncompliance</u>	<u>Penalty per Violation per Day</u>
1st to 5 th Day	\$250.00
5th to 30th Day	\$1,000.00
31st to 60th Day	\$2,500.00
more than 60 Days	\$5,000.00

46. **Remedial Requirements.** The City shall pay stipulated penalties to the United States and the State as set forth below for each Day for each violation the City fails to satisfy any of the remedial requirements of Paragraphs 9, 10, 11, 12, 13, or 15 of this Consent Decree. The stipulated penalties for failure to meet each such requirement shall be as follows:

<u>Period of Noncompliance</u>	<u>Penalty per Violation per Day</u>
1st to 30th Day	\$1,000.00
31st to 60th Day	\$3,000.00
more than 60 Days	\$5,000.00

47. **SSOs.** For each SSO, the City shall pay a stipulated penalty of \$1,000.00 per violation per Day to the United States and the State.
48. **Bypasses.** For each bypass before, during, and after construction of the WPCP upgrade, the City shall pay a stipulated penalty of \$1,000.00 per violation per Day to the United States and the State.
49. **Effluent/Emissions Limits.**
- Until the WPCP upgrade is completed and put into service as required by Paragraph 11, the City shall pay stipulated penalties to the United States and the

State for each Day for each violation of a requirement of any of the City's

NPDES Permits, as follows:

<u>Period of Noncompliance</u>	<u>Penalty Per Violation Per Day</u>
1st through 14th Day	\$100.00
15th through 30th Day	\$300.00
31st Day and beyond	\$500.00

- b. After the WPCP upgrade is completed and put into service as required by Paragraph 11, the City shall pay stipulated penalties to the United States and the State for each Day for each violation of a requirement of any of the City's NPDES Permits, as follows:

<u>Period of Noncompliance</u>	<u>Penalty Per Violation Per Day</u>
1st through 14th Day	\$1,000.00
15th through 30th Day	\$3,000.00
31st Day and beyond	\$5,000.00

50. **Reporting Requirements.** The City shall pay stipulated penalties to the United States and the State for each Day for each violation of the reporting requirements of Section VIII of this Consent Decree:

<u>Period of Noncompliance</u>	<u>Penalty Per Violation Per Day</u>
1st through 14th Day	\$500.00
15th through 30th Day	\$1,000.00
31st Day and beyond	\$2,000.00

51. **Delay in Payment of Penalty:** The City shall pay to the United States and the State a stipulated penalty of \$2,000 for each Day that the City is late in paying the civil penalty required under Section IX.
52. **All Other Violations:** The City shall pay to the United States and the State a stipulated penalty of \$1,500.00 per violation per Day for any violation of the Consent Decree that is not specified in this Section.
53. Stipulated penalties shall automatically begin to accrue on the first Day the City fails either to meet any of the schedules of performance required by this Consent Decree or to satisfy any obligation or requirement of this Consent Decree and shall continue to accrue through the final Day of correction of the noncompliance or completion of the activity. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Decree.
54. The City shall pay stipulated penalties to the United States and the State within thirty (30) Days of receipt of a written demand by either Plaintiff. The City shall pay 50% of the total stipulated penalty amount due to the United States and 50% to the State. The Plaintiff making a demand for payment of a stipulated penalty shall simultaneously send a copy of the demand to the other Plaintiff. Payment of stipulated penalties as set forth above shall be in addition to any other rights or remedies which may be available to the United States or the State by reason of the City's failure to comply with requirements of this Consent Decree, and any applicable Federal, State or local laws, regulations, NPDES Permit and all other applicable permits.
55. Stipulated penalties shall continue to accrue as provided in Paragraph 53, during any Dispute Resolution, but need not be paid until the following:

- a. If the dispute is resolved by agreement or by a decision of EPA that is not appealed to the Court, the City shall pay accrued penalties determined to be owing, together with interest, to the Plaintiffs within thirty (30) Days of the effective date of the agreement or the receipt of EPA's decision.
 - b. If the dispute is appealed to the Court and the United States prevails in whole or in part, the City shall pay all accrued penalties determined by the Court to be owing, together with interest, within sixty (60) Days of receiving the Court's decision or order, except as provided in subparagraph c, below.
 - c. If any Party appeals the District Court's decision, the City shall pay all accrued penalties determined to be owing, together with interest, within fifteen (15) Days of receiving the final appellate court decision.
56. The City shall pay stipulated penalties owing to the Plaintiffs in the manner set forth and with the confirmation notices required by Section IX (Civil Penalty), except that the transmittal letters shall state that the payment is for stipulated penalties and shall state for which violation(s) the penalties are being paid.
57. If the City fails to pay stipulated penalties according to the terms of this Consent Decree, the City shall be liable for interest on such penalties, as provided for in 28 U.S.C. § 1961, accruing as of the date payment became due. Nothing in this Section shall be construed to limit the United States or the State from seeking any remedy otherwise provided by law for the City's failure to pay any stipulated penalties.
58. Subject to the provisions of Section XII of this Consent Decree (Effect of Settlement/Reservation of Rights), the stipulated penalties provided for in this Consent Decree shall be in addition to any other rights, remedies, or sanctions available to the

United States and/or the State for the City's violation of this Consent Decree or applicable law. Where a violation of this Consent Decree is also a violation of Section 301 or 402 of the CWA, 33 U.S.C. §§ 1311 and 1342, and the regulations promulgated thereunder, the City shall be allowed a credit, for any stipulated penalties paid, against any statutory penalties imposed for such violation.

XII. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

59. This Consent Decree resolves the claims for civil penalties for the violations alleged in the Complaint through the Date of Lodging.
60. The United States and the State reserve all rights against the City with respect to any violations by the City that occur after the Date of Lodging, and/or for any violations of the CWA or applicable state law not specifically alleged in the Complaint, whether they occurred before or after the Date of Lodging.
61. The United States and the State further reserve all legal and equitable remedies available to enforce the provisions of this Consent Decree, except as expressly stated in Paragraph 59. This Consent Decree shall not be construed to limit the rights of the United States or the State to obtain penalties or injunctive relief under the CWA or implementing regulations, or under other federal or state laws, regulations, or permit conditions, except as expressly specified in this Consent Decree. The United States and the State reserve all rights against the City with respect to criminal liability. The United States and the State further reserve all legal and equitable remedies to address any imminent and substantial endangerment to the public health or welfare or the environment arising at, or posed by, the City's publicly owned treatment works, whether related to the violations addressed in this Consent Decree or otherwise.

62. In any subsequent administrative or judicial proceeding initiated by the United States or the State for injunctive relief, civil penalties, other appropriate relief relating to the City's publicly owned treatment works or violations under the Complaint, the City shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, *res judicata*, collateral estoppel, issue preclusion, claim preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States or the State in the subsequent proceeding were or should have been brought in the instant case, except with respect to claims that have been specifically resolved pursuant to Paragraph 59.
63. This Consent Decree is not and shall not be construed as a permit or a modification of any permit, under any federal, State, or local laws or regulations. The City is responsible for achieving and maintaining complete compliance with all applicable federal, State, and local laws, regulations, and permits; and the City's compliance with this Consent Decree shall be no defense to any action commenced pursuant to any such laws, regulations, or permits. The United States and the State do not, by their consent to the entry of this Consent Decree, warrant or aver in any manner that the City's compliance with any aspect of this Consent Decree will result in compliance with provisions of the CWA or with any other provisions of federal, State, or local laws, regulations, or permits. Notwithstanding EPA and IDNR's review or approval of any plans, reports, policies or procedures developed pursuant to or as a result of this Consent Decree, the City shall remain solely responsible for any non-compliance with the terms of this Consent Decree, all applicable permits, as well as all federal and state laws and regulations promulgated under those laws.

64. The City's duty to comply with the terms of this Consent Decree is not conditioned on the receipt of any federal or state funds or the City's financial capabilities. Failure to comply is not excused by lack of federal or state grant funds, or by the processing of any applications for the same, or by the City's financial capabilities.
65. This Consent Decree does not limit or affect the rights of the Parties against any third parties not party to this Consent Decree, nor does it limit the rights of third parties not party to this Consent Decree, against the City, except as otherwise provided by law. This Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third party not party to this Consent Decree.

XIII. FORCE MAJEURE

66. "Force Majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of the City, of any entity controlled by the City, or of the City's contractors, that delays or prevents the performance of any obligation under this Consent Decree despite the City's best efforts to fulfill the obligation. The requirement that the City exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any such event (a) as it is occurring and (b) after it has occurred to prevent or minimize any resulting delay to the greatest extent possible. "Force Majeure" does not include unanticipated or increased expenses or costs associated with implementation of this Consent Decree, changed financial circumstances, or other financial or budgetary issues.
67. Failure to apply for a required permit or approval, or to provide in a timely manner all information required to obtain a permit or approval necessary to meet the requirements of this Consent Decree, are not Force Majeure events. However, failure of a permitting

authority to issue a necessary permit in a timely fashion is an event of Force Majeure where the failure of the permitting authority to act is beyond the control of the City, and the City demonstrates that it has taken all steps available to it to obtain the necessary permit or approval, including but not limited to:

- a. Promptly providing reasonably known permitting or approval authorities with copies of this Consent Decree, when lodged, and briefing each such authority, both orally and with written materials if necessary, on the projects and schedules contained therein in order to coordinate permitting submittals and approvals;
- b. submitting a complete permit application by the deadlines set forth in this Consent Decree;
- c. responding to requests for additional information by the permitting or approval authority in a timely fashion;
- d. making regular inquiry, approximately every forty-five (45) Days, both verbally and in writing, with the permitting or approval authority after initial or supplemental permit filings, to determine the status of the permit or approval application;
- e. seeking relief from higher management officials within the permitting or approval authority where permit processing delays threaten to cause noncompliance with any deadline in this Consent Decree;
- f. accepting lawful permit or approval terms and conditions; and
- g. prosecuting appeals of any unlawful terms and conditions imposed by the permitting or approval authority in an expeditious fashion.

68. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a Force Majeure event, the City shall provide notice orally or by electronic mail to the EPA and IDNR in accordance with Section XVII (Notices), within 72 hours of when the City first knew that the event might cause a delay. Within seven (7) Days thereafter, the City shall provide in writing to the EPA and IDNR, in accordance with Section XVII (Notices), an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; the City's rationale for attributing such delay to a Force Majeure event if it intends to assert such a claim; and a statement as to whether, in the opinion of the City, such event may cause or contribute to an endangerment to public health, welfare or the environment. The City shall include with any notice all available documentation supporting the claim that the delay was attributable to a Force Majeure. Failure to comply with the above requirements shall preclude the City from asserting any claim of Force Majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. The City shall be deemed to know of any circumstance of which the City, any entity controlled by the City, or the City's contractors knew or should have known.
69. If the United States agrees that a Force Majeure event has occurred, after a reasonable opportunity for review and comment by the State, the United States may agree to extend the time for the City to perform the obligation(s) under this Consent Decree that are affected by the Force Majeure event for the time necessary to complete those

obligations. An extension of the time for performance of the obligations affected by the Force Majeure event shall not, by itself, extend the time for performance of any other obligation. The United States will notify the City in writing of the length of the extension, if any, for performance of the obligations affected by the Force Majeure event.

70. If, after a reasonable opportunity for review and comment by the State, the United States does not agree that a Force Majeure event has occurred, or does not agree to the extension of time sought by the City, the United States' position shall be binding, unless the City invokes Dispute Resolution under Section XIV (Dispute Resolution). If the City elects to invoke the dispute resolution procedures set forth in Section XIV (Dispute Resolution), it shall do so no later than fifteen (15) Days after receipt of EPA's notice. In any such proceeding, the City shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a Force Majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that the City complied with the requirements of Paragraphs 66 through 68, above. If the City carries this burden, the delay at issue shall be deemed not to be a violation by the City of the affected obligation of this Consent Decree identified to the EPA and the Court.

XIV. DISPUTE RESOLUTION

71. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. The City's failure to seek resolution of a

dispute under this Section shall preclude the City from raising any such issue as a defense to an action by the Plaintiffs to enforce any obligation of the City arising under this Consent Decree. This Section does not apply to disputes between the City and the State of Iowa (or its agencies and subdivisions) regarding permits and/or regulatory compliance.

72. **Informal Dispute Resolution Between Plaintiffs and City.** Any dispute subject to Dispute Resolution under this Consent Decree shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when one party sends the other parties a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed twenty (20) Days from the date the dispute arises, unless that period is modified by written agreement. If the City and the Plaintiffs cannot resolve a dispute by informal negotiations, then the position advanced by the Plaintiffs shall be considered binding unless, within thirty (30) Days after the conclusion of the informal negotiation period, the City invokes formal dispute resolution procedures as set forth below.

73. **Formal Dispute Resolution Between Plaintiffs and City.** The City shall invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by serving on the Plaintiffs a written Statement of Position regarding the matter in dispute. The Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting the City's position and any supporting documentation relied upon by the City.

74. The Plaintiffs shall serve its Statement of Position within forty-five (45) Days of receipt of the City's Statement of Position. The Plaintiffs' Statement of Position shall include,

but need not be limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by the Plaintiffs. The Plaintiffs' Statement of Position shall be binding on the City, unless the City files a motion for judicial review of the dispute in accordance with the following Paragraph.

75. The City may seek judicial review of the dispute by filing with the Court and serving on the Plaintiffs, in accordance with Section XVII of this Consent Decree (Notices), a motion requesting judicial resolution of the dispute. The motion must be filed within ten (10) Days of receipt of the Plaintiffs' Statement of Position pursuant to the preceding Paragraph. The motion shall contain a written statement of the City's position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Consent Decree.
76. The Plaintiffs shall respond to the City's motion within the time period allowed by the Local Rules of this Court. The City may file a reply memorandum, to the extent permitted by the Local Rules.
77. Any dispute brought under Paragraph 73, the City shall have the burden of demonstrating, based on the administrative record, that the position of the United States is arbitrary and capricious or otherwise not in accordance with law.
78. Nothing in this section shall be construed to limit the rights of any other party to this Consent Decree to pursue any and all available claims and remedies against the City for violation of the terms of the Consent Decree, including the right to seek costs of litigation for such enforcement activities.

XV. RIGHT OF ENTRY AND RECORD RETENTION

79. The EPA, IDNR, and their representatives, including attorneys, contractors, and consultants, shall each have the right of entry into the premises of any City property at all reasonable times, upon presentation of credentials, to:
- a. monitor the progress of activities required under this Consent Decree;
 - b. verify any data or information submitted to the United States or the State in accordance with the terms of this Consent Decree;
 - c. obtain samples and, upon request, splits of any samples taken by the City or its representatives, contractors, or consultants;
 - d. observe performance tests;
 - e. obtain documentary evidence, including photographs and similar data; and
 - f. assess the City's compliance with this Consent Decree, its NPDES Permits, the CWA or applicable State law.
80. Until five years after the termination of this Consent Decree, the City shall retain, and shall instruct its contractors and agents to preserve, all non-identical copies of all documents, reports, data, records, or other information (including documents, records, or other information in electronic form) in its or its contractors' or agents' possession or control, or that come into its or its contractors' or agents' possession or control, and that relate in any manner to the City's performance of its obligations under this Consent Decree, including any underlying research and analytical data. This information-retention requirement shall apply regardless of any contrary City, corporate or institutional policies or procedures. At any time during this information-retention period, upon request by the United States or the State, the City shall provide copies of

any documents, reports, analytical data, or other information required to be maintained under this Paragraph.

81. At the conclusion of the information-retention period provided in the preceding Paragraph, the City shall notify the United States and the State at least ninety (90) Days prior to the destruction of any documents, records, or other information subject to the requirements of the preceding Paragraph and, upon request by the United States or the State, the City shall deliver any such documents, records, or other information to the EPA or IDNR.
82. This Consent Decree in no way limits or affects the EPA or the State's right to enter or access the property of the City, to obtain information, to conduct inspections, to require monitoring, and to obtain information from the City, as authorized by law, nor does it limit or affect any duty or obligation of the City to maintain documents, records, or other information imposed by applicable law.

XVI. COSTS OF SUIT

83. The Parties shall bear their own costs of this action, including attorneys' fees, except that the United States and the State of Iowa shall be entitled to collect the costs (including attorneys' fees) incurred in any action necessary to collect any portion of the civil penalty or any stipulated penalties due but not paid by the City.

XVII. NOTICES

84. Unless otherwise specified herein, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and addressed as follows:

To the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-1-1-09339

To EPA:

Chief, Water Enforcement Branch
Water, Wetlands, and Pesticides Division
U.S. Environmental Protection Agency, Region 7
901 North 5th Street
Kansas City, Kansas 66101

and

Chris Muehlberger
Office of Regional Counsel
U.S. Environmental Protection Agency, Region 7
901 North 5th Street
Kansas City, Kansas 66101

To the State:

David R. Sheridan
Assistant Attorney General
Environmental Law Division
Iowa Department of Justice
Lucas State Office Building
321 East 12th Street, Room 018
Des Moines, Iowa 50319

To IDNR:

Joseph Sanfilippo
Environmental Program Supervisor
Iowa Department of Natural Resources
909 West Main, Suite 4
Manchester, Iowa 52057

To the City:

City Manager

City Hall
50 W. 13th Street
Dubuque, Iowa 52001-4864

and

City Attorney
City Hall
50 W. 13th Street
Dubuque, Iowa 52001-4864

85. Any Party may, by written notice to the other Parties, change its designated notice recipient or notice address provided above.
86. Notices submitted pursuant to this Section shall be deemed submitted upon mailing, unless otherwise provided in this Consent Decree or by mutual agreement of the Parties in writing.

XVIII. CERTIFICATION

87. Any report, plan, notice, or any other document submitted by the City to the United States or the State pursuant to this Consent Decree shall be signed by an official of the City and include the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

This certification requirement does not apply to emergency or similar notifications where compliance would be impractical.

88. The City shall not object to the admissibility into evidence of any report, plan, notice, or any other document prepared in accordance with this Consent Decree or the information contained in said reports in any proceeding to enforce this Consent Decree.

XIX. EFFECTIVE DATE

89. The Effective Date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court or a motion to enter the Consent Decree is granted, whichever occurs first as recorded on the Court's docket.

XX. RETENTION OF JURISDICTION

90. The Court shall retain jurisdiction over this case until termination of this Consent Decree, for the purpose of resolving disputes arising under this Decree or entering orders modifying this Decree, pursuant to Sections XIII and XXI, or effectuating or enforcing compliance with the terms of this Decree.

XXI. MODIFICATION

91. The terms of this Consent Decree, including the attached appendices, may be modified only by a subsequent written agreement signed by all the Parties. Where the modification constitutes a material change to this Consent Decree, it shall be effective only upon approval by the Court.
92. Any disputes concerning modification of this Consent Decree shall be resolved pursuant to Section XIV of this Consent Decree (Dispute Resolution), provided, however, that, instead of the burden of proof provided by Paragraph 77 the Party seeking the modification bears the burden of demonstrating that it is entitled to the requested modification in accordance with Federal Rule of Civil Procedure 60(b).

XXII. TERMINATION

93. The City may serve upon the United States and the State a Request for Termination, together with all necessary supporting documentation, certifying that the City has satisfied all of its obligations under the Consent Decree, including:
- a. Completion of all requirements of Section V (Remedial Measures and Schedules) of this Consent Decree, and that it has achieved and maintained satisfactory compliance with this Consent Decree and its NPDES Permit for a period of twelve (12) consecutive months following completion of its requirements under Section V;
 - b. Compliance with all other requirements of this Consent Decree; and
 - c. Payment in full of all civil penalties and any accrued stipulated penalties as required by this Consent Decree.
94. After the City submits a Request for Termination, if the United States after consultation with the State determines that the Consent Decree may be terminated, the Parties shall submit, for the Court's approval, a joint stipulation terminating the Consent Decree.
95. If the United States after consultation with the State determines that the Consent Decree cannot be terminated, the City may invoke Dispute Resolution under Section XIV of this Consent Decree. However, the City shall not seek Dispute Resolution under Paragraph 73 of Section XIV of any dispute regarding termination until at least 120 Days after service of its Request for Termination. This Consent Decree shall remain in effect pending resolution of the dispute by the Parties or the Court in accordance with the dispute resolution provisions under Section XIV of this Consent Decree.

XXIII. PUBLIC PARTICIPATION

96. This Consent Decree shall be lodged with the Court for at least thirty (30) Days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate. The City consents to entry of this Consent Decree without further notice and agrees not to withdraw from or oppose entry of this Consent Decree by the Court or to challenge any provision of the Consent Decree, unless the United States has notified the City in writing that it no longer supports entry of the Consent Decree.

XXIV. SIGNATORIES/SERVICE

97. Each undersigned representative of the City and the State, the United States Attorney for the Northern District of Iowa, and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice on behalf of the United States certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party he or she represents to this document.
98. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis.
99. The City agrees to accept service of process by mail or courier service to the address set forth in Paragraph 84 with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rules 4 and 5 of the

Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons.

XXV. INTEGRATION/APPENDICES

100. This Consent Decree and its Appendices constitute the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in the Consent Decree and supersedes all prior agreements and understandings, whether oral or written, concerning the settlement embodied herein. Other than deliverables that are subsequently submitted and approved pursuant to this Consent Decree, no other document, nor any representation, inducement, agreement, understanding, or promise, constitutes any part of this Consent Decree or the settlement it represents, nor shall it be used in construing the terms of this Consent Decree.

101. The following appendices are attached to and incorporated into this Consent Decree:

“Appendix A” is a map of the Sewersheds.

“Appendix B” is the “Facilities Plan.”

“Appendix C” is the “Interceptor Plan.”

“Appendix D” is the “I&I Reduction Plan.”

“Appendix E” is the SSO Warning sign.

“Appendix F” is a description of the SEP.

XXVI. FINAL JUDGMENT

102. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment of the Court as to the United States, the State, and the City.

Dated and entered this 27 day of June, 2011.


UNITED STATES DISTRICT JUDGE

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States of America and the State of Iowa v. City of Dubuque.

FOR THE UNITED STATES OF AMERICA

4/19/11
Date



IGNACIA S. MORENO
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice
Washington, D.C. 20530

4/21/11
Date



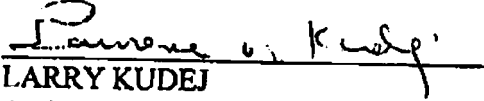
KATHERINE A. LOYD
Trial Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
1961 Stout St., 8th floor
Denver, CO 80294
(303) 844-1365
fax (303) 844-1350
kate.loyd@usdoj.gov

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States of America and the State of Iowa v. City of Dubuque.

FOR THE UNITED STATES OF AMERICA

STEPHANIE M. ROSE
United States Attorney
Northern District of Iowa

4-21-11
Date

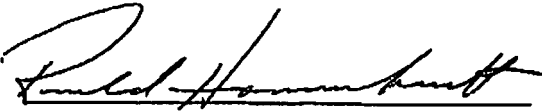

LARRY KUDEJ
Assistant United States Attorney
401 First Street SE, Suite 400
Cedar Rapids, IA 52401-1825

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States of America and the State of Iowa v. City of Dubuque.

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY


3-25-2011

Date


for KARL BROOKS
Regional Administrator
Region VII
U.S. Environmental Protection Agency
901 North 5th Street
Kansas City, Kansas 66101

3.24.11

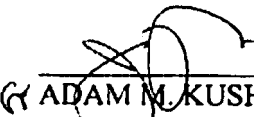
Date


CHRISTOPHER MUEHLBERGER
Attorney
Office of Regional Counsel
U.S. Environmental Protection Agency
Region VII
901 North 5th Street
Kansas City, Kansas 66101


THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States of America and the State of Iowa v. City of Dubuque.

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY


4.21.11
Date


ADAM M. KUSHNER, Director
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

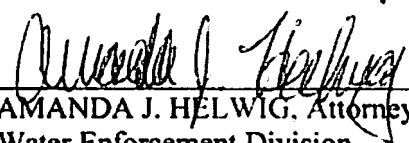
4/20/11
Date


MARK POLLINS, Director
Water Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

4/20/11
Date


LOREN DENTON, Acting Branch Chief
Municipal Enforcement Branch
Water Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

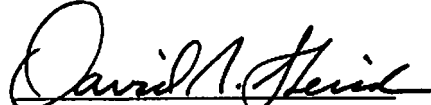
4.14.11
Date


AMANDA J. HELWIG, Attorney
Water Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States of America and the State of Iowa v. City of Dubuque.

Date

FOR THE STATE OF IOWA

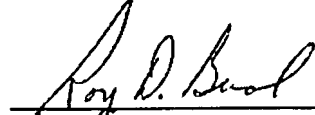


DAVID R. SHERIDAN
Assistant Attorney General
Environmental Law Division
Iowa Department of Justice
Lucas State Office Building
321 East 12th Street, Room 018
Des Moines, Iowa 50319

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States of America and the State of Iowa v. City of Dubuque.

FOR THE CITY OF DUBUQUE

3/9/11
Date



ROY D. BUOL

Mayor
City Hall
50 West 13th Street
Dubuque, Iowa 52001

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Jeanne F. Schneider or Successor
City Clerk
City Hall
50 West 13th Street
Dubuque, Iowa 52001
Phone Number: 563-583-4120

EXHIBIT A

EXHIBIT B

Previous sections of this report presented background information, described and evaluated the Dubuque WPCP, projected flows and loadings, and reviewed alternatives necessary to meet the projected needs at the WPCP. This section presents a summary of the proposed modifications to the Dubuque WPCP, the proposed staging for these improvements, an overall cost summary and preliminary financing plan for the proposed improvements, and the fiscal impact of the recommended plan on the City of Dubuque's wastewater-related user rates.

7.01 RECOMMENDED PLAN SUMMARY

The recommended plan includes improvements to nearly all portions of the existing Dubuque WPCP. The City has elected to construct all the recommended facilities in a single construction project. Figure 7.01-1 presents the preliminary site plan for the recommended improvements, and Table 7.01-1 presents a summary of preliminary design conditions for the recommended plan. A brief summary of the recommended improvements is included below:

A. Influent Screening

1. Replace the existing screens with 1/4-inch fine screens (consider 1/8-inch screens).
2. Install screenings washer/compactors.

B. Grit Removal

1. Replace the existing grit classifiers.
2. Eliminate the need for dewatered grit conveying by reorienting the grit classifiers.
3. Reconfigure grit pump discharge piping.

C. Primary Treatment

1. Remove domed covers and replace with weir covers only.
2. Construct fourth primary clarifier.

D. Biological Treatment

1. Continue with HPO activated sludge, including hauling liquid oxygen to the plant.
2. Replace aeration mixers (27).
3. Replace HPO controls for all three trains.
4. Inspect concrete basins.
5. Seal concrete deck.

E. Final Clarification

1. Install new energy dissipating inlets.

TABLE 7.01-1

UNIT PROCESS TREATMENT – PRELIMINARY DESIGN CRITERIA

Design Parameter	Value
<u>Design Year</u>	2030
<u>Flows and Loading</u>	
Average Dry Weather Flow	9.14
Average Annual Flow (mgd)	10.64
Average Wet Weather Flow (mgd)	13.47
Maximum Month Flow (mgd)	13.13
Maximum Week Flow (mgd)	15.83
Maximum Day Flow (mgd)	24.50
Maximum Hourly Flow (mgd)	40.86
Average BOD (lbs/day)	36,900
Maximum Month BOD (lbs/day)	41,200
Average TSS (lbs/day)	29,400
Maximum Monthly TSS (lbs/day)	37,100
<u>Mechanically Cleaned Bar Screens (Replacement)</u>	
No. of Units	2
Size and Openings	3-ft 6-in width, 1/4-in opening size
Type	Step or perforated plate
Capacity	20.0 mgd (each unit)
<u>Grit Removal (Existing basins, Replacement Classifiers)</u>	
Number of Units	2
Type	Vortex
Capacity	34 mgd, each
<u>Primary Clarifiers (1 New)</u>	
No. of Units	4
Type	Circular
Diameter, ft	90
Side Water Depth, ft	9
Total area, ft ²	25,450
Overflow Rate, gpd/ft ²	
@ 10.64 mgd	420
@ 40.86 mgd	1,600
Anticipated BOD/TSS Removal, percent	25/68
<u>High-purity Oxygen Activated-Sludge Tanks (existing)</u>	
Number of Trains	3
Number of Tanks/Train	3
Tank Length, ft	90
Tank Width, ft	26

Design Parameter	Value
Side Water Depth, ft	12
Volume, ft ³ (total)	252,720
Design Avg. BOD Load, lb/1,000 ft ³ /day	122
Design HRT @ 10.64 mgd, hrs	4.3
No. of Mixers (Replacement)	27
Mixer Horsepower (each train), hp	
Tank 1	30/15/10
Tank 2	10/7.5/7.5
Tank 3	5/5/5
<u>Oxygen Storage (existing)</u>	
Liquid Storage Capacity, tons	44
Vaporization Capacity, tons/day	22.8
<u>Final Clarifiers (existing)</u>	
No. of Units	4
Diameter, ft	105
Side Water Depth, ft	12
Surface Area, ft ² (total)	34,640
Volume, ft ³	
Each	103,920
Total	415,680
Overflow Rate, gpd/ft ²	
@ 10.64 mgd	307
@ 40.86 mgd	1,180
Weir Length, ft	
Each	312
Total	1,248
Weir Loading Rate, gpd/ft	
@ 13.47 mgd (avg. wet weather)	10,800
<u>Effluent Disinfection (New: Reuse Existing Contact Tank)</u>	
Type	UV light; high-pressure, medium intensity
Number	2
Design Flow, mgd	40.86
Installation	In existing Chlorine Contact Tank
<u>Peak Flow Equalization (Converted Trickling Filters)</u>	
No. of Units	2
Diameter, feet	195
Total Volume, gal	~3,000,000
<u>Aerated WAS Storage</u>	
No. of Tanks	1
Dimensions	55 ft x 80 ft x 14.25 ft SWD
Volume, gallons	469,000
Max. Month WAS, lbs/day (Yield = 0.6 lbs/lb)	18,540

Design Parameter	Value
Max. Month WAS, gpd	117,000
Storage, days (1.9 percent TS @ max. month)	4.0
<u>WAS Thickening Equipment (New)</u>	
No. of Units	2 or 3
Max. Month Thickened WAS, gpd	49,400
Operating hrs/week	32
Hydraulic Loading, gpm (@ max. month)	430
Solids Loading, lbs/hr (@ max. month)	4,060
Thickened WAS, percent solids	4.5 to 6.0
<u>Blended Sludge Holding Tanks (existing)</u>	
Previous Use	Primary sludge storage
No. of Tanks	2
Total volume, gallons	293,000
Storage, days (@ max. month)	2.8
<u>Anaerobic Digestion (New)</u>	
No. of Tanks	4 (2 thermo, 2 meso)
Dimensions	
Diameter, ft	70
Maximum SWD, ft	27.5
Volume, gallons (each)	791,600
Volume, gallons (total)	3,166,500
Max. Month Blended Feed Sludge	
Volume, gpd	104,400
Total Mass, lbs/day	43,770
Volatile Solids Load, lbs/day (85% volatile)	37,200
Detention Time, days (total)	
Thermo @ Max. Month	15
Overall @ Max. Month	30
Volatile Solids Loading, lbs/1,000 ft ³ /day	
Thermo @ Max. Month	175
Overall @ Max. Month	88
<u>Biosolids Dewatering (2 New)</u>	
No. of Units	3 (2 new, 1 existing)
Type	Centrifuges
Max. Month Biosolids Feed to Centrifuges	
Volume, gpd	104,400
Mass, lbs/day	23,300
Operating hrs/week	32
Hydraulic Loading, gpm (@ max. month)	380
Solids Loading, lbs/hr (@ max. month)	5,100
Expected Cake Solids, percent	27

Design Parameter	Value
Biosolids Storage (New, Converted Bldg)	
Biosolids Cake @ Max. Month Conditions, ft ³ /day	1,330
Storage Capacity, days	14
Volume Required, ft ³	18,600
Stacking Height, ft	6
Min. Area, ft ²	3,100
Actual Area, ft ² (w/ operating room)	4,000

F. Effluent Disinfection

1. Replace chlorination and dechlorination with ultraviolet light disinfection.
2. Reuse contact tank for UV installation.

G. Effluent DO and pH Control

1. Routinely monitor the wastewater DO and pH downstream of the aeration basins to determine how DO and pH change through the remaining basins. Based on this monitoring:
 - a. Install a cascade aeration system downstream of the dechlorination basin. This will serve to increase DO and also release CO₂ to raise the effluent pH.
 - b. If needed, remove the final stage concrete deck from each HPO train, which will serve to release CO₂ and raise the effluent pH.

H. Peak Flow Management

1. Convert trickling filter structures to off-line flow equalization downstream of primary clarification.
2. Modify HPO basins to all operation in contact stabilization mode of activated sludge.

I. Sampling and Flow Metering

1. Provide two new influent samplers.
2. Provide new effluent sampler and sampling enclosure near the chlorine contact tank.

J. Residuals Management

1. Decommission the fluid bed incinerators.
2. Construct new anaerobic digestion facilities (TPAD).
3. Install new WAS thickening equipment in the existing incinerator building.
4. Rehabilitate the WAS storage tanks and provide new WAS storage aeration equipment.
5. Provide two new dewatering centrifuges; remove one existing centrifuge (use for parts) and belt filter press.
6. Convert existing incinerator building to biosolids cake storage and load-out facilities.
7. Consider electrical generation for biogas.

8. Establish contract with biosolids contractor to provide hauling, off-site storage, and land application biosolids.

K. Emergency Backup Power and Electrical Service

1. Install new emergency power generation equipment.
2. Consider two smaller generators since there are two electrical services at the plant.
3. Consider consolidating biogas electrical generation and backup power generation equipment.
4. Replace electrical switchgear and distribution equipment from the 1970s and before.

L. Administration Building, Laboratory, and Locker Rooms

1. Conduct detailed space needs study.
2. Refurbish the existing administration building.
3. Refurbish locker rooms in the administration building and the incinerator building.
4. Expand the laboratory portion of the building by approximately 700 ft².

M. Vehicle Storage and Maintenance Building

1. Construct new facility for vehicular storage and maintenance (approximately 4,800-ft²).

N. Sewer Cleaning Debris Pad

1. Construct new receiving station for sewer cleaning debris to allow dewatering and storage for this material.
2. Consider incorporating a hauled waste receiving station into this facility.

O. Odor Control

1. Provide ability to install odor control for the headworks and primary clarifiers in the future.

P. Other Equipment Replacement

1. Influent magnetic flow meters (2), effluent flow meter, and excess flow meter.
2. Primary clarifier drives.
3. Primary scum pumps.
4. Primary sludge transfer pumps.
5. RAS pump VFD replacement.
6. WAS pumps.

7. In-plant waste/recycle pumps.
8. Plant effluent/process water pump.
9. HVAC systems.

Q. Miscellaneous Piping, Valves, Mechanical and Other Components

1. Influent channel gates.
2. Primary clarifier splitter gates.
3. MLSS splitter gates.
4. Final clarifier influent splitter gates.
5. Reroute in-plant waste/recycle pump discharge upstream of the influent screens.
6. New septage/hailed waste receiving station.
7. New roofs on existing buildings.

7.02 OPINION OF CAPITAL COSTS AND PROJECT FINANCING

The opinion of capital costs for the recommended improvements is approximately \$48 million (December 2007 costs basis). Projecting this amount to an anticipated fall 2009 bid date, and applying a construction inflation rate of 4 percent annually, the anticipated total project costs are approximately \$52.2 million. Table 7.02-1 presents a summary of the opinion of capital costs.

The WPCP improvements are anticipated to be financed entirely through Iowa's State Revolving Fund (SRF) loan program. The SRF program provides 0 percent interest financing for up to three years for planning and design services. These loans can be rolled into the SRF construction loan. Construction loans are offered at 3 percent interest, typically for 20 years although terms of up to 30 years can be accommodated. In addition to the 3 percent loan interest, an administrative fee of 0.25 percent is added each year to the outstanding principal balance for administering the loan. Also, an additional 1 percent of the loan amount is included as a loan initiation fee.

Assuming a total loan amount of \$52.2 million, plus the initiation fee of \$522,000, the annual debt service payment is expected to be approximately \$3.6 million. If cogeneration equipment (generator set, heat recovery, gas conditioning) is included in the project, the anticipated loan would be increased by approximately \$1.5 to \$2.0 million, and the annual debt service would increase to approximately \$3.8 million.

7.03 OPINION OF OPERATION, MAINTENANCE, AND REPLACEMENT COSTS

The recommended plan will have an impact on the overall operating budget for the Dubuque WPCP. Table 7.03-1 presents the proposed operating budget for fiscal year 2013 (July 2012-June 2013), which is the first full year of operation of the facilities in the recommended plan. This table presents only the key changes between the proposed 2006/2007 budget and the projected 2012/2013 budget. The remaining budget elements are anticipated to remain the same but are adjusted for inflation at an assumed inflation rate of 2.5 percent annually. Key changes in the proposed budget include a minor

TABLE 7.02-1

OPINION OF CAPITAL COSTS

Project Component	Opinion of Capital Cost
Influent Screening	
Equipment and Channel Modifications	\$510,000
Grit Removal	
Grit Classifiers and Conveyor Modifications	\$105,000
Primary Treatment	
Dome Removal and New Covers	\$203,000
4th Primary Clarifier (equipment and structure)	\$1,200,000
HPO Activated Sludge	
New Mixers, Drives, and Motors	\$1,438,000
New Controls	\$547,000
Concrete Deck Restoration	\$350,000
Final Clarifiers	
New LA-EDI and Stilling Wells	\$227,000
Disinfection	
UV Equipment and Tank Modifications	\$901,000
DO and pH Limits	
Cascade Aeration	\$70,000
Monitoring Equipment	\$25,000
Peak Flow Management	
Equalization Tank and Splitter Structure Modifications	\$500,000
Contact Stabilization Modifications	\$200,000
Residuals Management	
Stabilization System	\$8,939,000
Dewatering, Thickening, and Conveying Equipment and Storage	\$2,192,000
WAS Storage Aeration Equipment	\$318,000
Building Modifications (Allowance)	\$500,000
Sampling	
Influent Samplers	\$18,000
Effluent Samplers and FRP Bldg	\$25,000

Emergency Backup Power	
Generators	\$480,000
Miscellaneous Equipment Replacement	\$ 770,000
Subtotal Equipment and Structures	\$19,518,000
Undefined Subcontract Work	
Site Work	\$976,000
HVAC	\$1,366,000
Mechanical	\$3,904,000
Electrical	\$3,904,000
Allowances	
Miscellaneous Demolition	\$250,000
Miscellaneous Piping, Valves, and Mechanical Components	\$500,000
Electrical Service	\$200,000
MCC Replacement	\$500,000
Admin. Bldg Refurbishment (80'x35'x2 floors)	\$700,000
Admin Bldg. Lab Addition (35X20x2 floors)	\$315,000
Solids Processing Bldg Locker Room Refurbishment	\$100,000
Vehicle Storage and Maintenance Building (3-bay; 80'x60')	\$720,000
Sewer Cleaning Debris Pad	\$50,000
Septage Receiving Station	\$75,000
Subtotal	\$33,078,000
Contractors General Conditions	\$2,646,000
Subtotal	\$35,724,000
Technical Services and Contingencies	\$12,503,000
TOTAL OPINION OF CAPITAL COSTS (December 2007 \$)	\$48,227,000

TABLE 7.03-1

OPINION OF ANNUAL O&M COSTS - POST CONSTRUCTION

Category	2006-2007 O&M Budget	2012-2013 O&M Budget with Project and Inflation
Wages	\$ 943,838	\$ 1,015,000
Retirement Benefits	126,206	135,000
Health Benefits	221,873	238,000
Other Employee Expenses	4,649	5,000
Supplies and Services	10,081	12,000
Printing and Publishing	1,585	2,000
Insurance Taxes and Damage	195,213	226,000
Travel Related Costs	10,875	13,000
Utilities and Property Maintenance	399,520	389,000
Electricity	84,200	69,000
Natural Gas	71,495	83,000
Other	15,851	18,000
Maintenance and Operating		
Liquid O ₂	323,802	406,000
Incinerator Fuel	248,920	-
Other	494,741	574,000
Contractual Services		
Existing	82,896	96,000
New Residuals	-	-
Disposal	2,718	328,000
Overhead/Stores/Garage	61,000	3,000
Vehicles	47,369	71,000
Tools/Construction Equipment	2,200	55,000
Other Equipment	500	3,000
Safety Equipment	82,896	1,000
Total Expense Budget	\$ 3,349,532	\$ 3,742,000

reduction in overall staffing and fringe benefits through anticipated attrition (although with inflation adjustment labor and benefits costs are still projected to be higher), a reduction in the amount of energy and fuel required for biosolids stabilization, and an increase in the costs for biosolids disposal. For fiscal year 2013, the projected annual O&M budget is approximately \$3.7 million.

If cogeneration equipment is included in the project, the annual O&M cost for the WPCP would decrease since the cogeneration facilities would provide electricity to be used at the plant. The annual electricity savings could be in the range of \$150,000 to \$200,000 less O&M costs associated with the cogeneration system.

An equipment replacement fund, while not a requirement of the SRF loan program, could be initiated by the City to provide funds for future equipment replacement. Payments to this fund would be made annually from sewer fees, and these funds would then be used in the future as needed. Preliminary payment ranges to such a fund are in the range of \$300,000 to \$500,000 annually. However, the existing WPCP budget has significant funding already included for equipment maintenance and replacement, and some of those currently budgeted items would offset the payments noted above. The actual amount budgeted for equipment replacement will be determined by the City on an annual basis.

7.04 SEWER USE RATE IMPACT OF RECOMMENDED PLAN

The current fiscal sewer use rates for the City of Dubuque are \$2.26 per 100 ft³ of water used. For a typical residential connection using 800 ft³/month, the current monthly sewer bill is approximately \$18/month. Based on the City's preliminary sewer rate analyses, implementation of the recommended plan is expected to increase average sewer use rates by 50 to 55 percent above current rates to approximately \$28/month.

7.05 PROJECT IMPLEMENTATION SCHEDULE

The preliminary project implementation schedule is included below and assumes a single construction project. In addition, the schedule assumes an approximate two-month review and approval duration by the IDNR for the facilities plan and future design documents.

Facilities Plan Submittal to DNR	June 2008
Public Hearing	July 2008
DNR Approval	August 2008
Begin Design	August 2008
Submit Design Documents to DNR	Summer 2009
Construction Bid Date	Fall 2009
Construction Completion	December 2012

EXHIBIT C

SECTION 5 - COST OF IMPROVEMENTS

5.1 NORTH FORK CATFISH CREEK

For the North Fork Catfish Creek sewer it is recommended that a 24" relief sewer be constructed from downstream manhole 1 to manhole 31 located on Key Way just north of Keystone Drive and that the 12" existing sewer, from the same manholes, be abandoned. This is approximately 7942 feet of pipe and will require approximately 31 manholes. The material selection of the sewer can be either thick walled PVC or Lined Reinforced Concrete Pipe (LCRP). The costs on these materials can vary dependent upon available. Because of the rock envelope required for PVC the costs of installation are typically very close. Veenstra and Kimm, Inc. recommends bidding either to ensure the most competitive construction cost. Table 1 shows the estimated costs for the relief sewer improvement on North Fork Catfish Creek. The total estimated engineers opinion of cost in 2005 dollars is approximately \$1.6M.

<u>Description</u>	<u>Units</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>
1. 24" Sanitary Sewer In Place	LF	8000	\$100.00	\$ 800,000.00
2. Sanitary Sewer 48" Shallow Manhole	EA	31	\$3,500.00	\$ 108,500.00
3. Street Crossings (bored)	LF	300	\$250.00	\$ 75,000.00
4. Restoration of ROW	LS	1	\$30,000.00	\$ 30,000.00
Total Relief Sewer Const Est				\$ 1,013,500.00
Contingency (20%)				\$ 202,700.00
ROW Acquisition (20%)				\$ 202,700.00
Engineering and Design Cost				\$ 101,350.00
Const Services (Contract Admin & Inspection)				\$ 50,675.00
Total Project Estimated Cost				\$ 1,570,925.00

Table 1

VEENSTRA & KIMM, INC.

EXHIBIT D

Sanitary Sewer Interceptor Inflow and Infiltration Metering Study

Recommendations for Future RDII Investigations

June 30, 2009

MSA

PROFESSIONAL SERVICES

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STUDY REPORT FOR
SANITARY SEWER INTERCEPTOR INFLOW AND INFILTRATION
METERING STUDY

CITY OF DUBUQUE, IOWA

PREPARED FOR: City of Dubuque
50 W. 13th Street
Dubuque, IA 52001

PREPARED BY: MSA Professional Services
2901 International Lane, Suite 300
Madison, WI 53704
(608) 242-7779

MSA PROJECT NO: 4920601

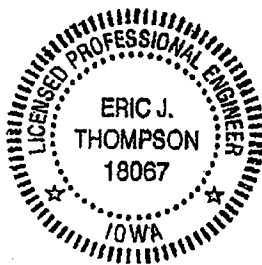
 SEAL	<p>I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.</p> <p><i>E. Thompson</i> 6-30-09 Eric J. Thompson Date License Number 18067 My license renewal date is December 31, 2009 Pages or sheets covered by this seal:</p> <p><u>ENTIRE BOUND REPORT (11 PAGES TEXT, 3 FIGURES, 231 GRAPHS IN APPENDIX)</u> <u>EJT.</u></p>

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City of Dubuque Flow Metering Program	1
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Success of I/I reduction Programs	10
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Appendix

Rainfall and Flow Meter Data

1. Introduction

Most sanitary sewer systems are designed for the peak diurnal wastewater flows with an allowance for infiltration and inflow. Typically, however, the infiltration and inflow allowance used in the original design of older sewer systems is significantly below the wet weather flows these systems actually experience. It is not uncommon for wet-weather peak flows to be an order of magnitude larger, or ten or more times the peaking factor, than the average daily flow of wastewater. Such large peak flows are primarily due to the numerous defects in the collection system caused by system deterioration and illegal connections over the years. In addition to excessive infiltration and inflow, a sewer system capacity can be taxed by population growth resulting in flows that exceed design flows.

Most capacity-related Sanitary Sewer Overflows (SSOs) are generally wet-weather related events. This memorandum documents the findings of a flow-metering study conducted on the trunk lines of the publicly owned sanitary sewer system in the City of Dubuque. The metering study included the installation of six flow meters at eleven locations throughout the City for a period of 11 months. Data collected from the flow meters was compared to data collected from three rainfall gauges owned and operated by the City. This data was used to determine the system response to rainfall events (wet weather) in terms of inflow and infiltration (RDII) and was used to characterize and prioritize portions of the sewer system for additional RDII studies. Upon completion of more localized studies, it is anticipated that the City of Dubuque will undertake RDII reduction projects to reduce wet weather flows within the sanitary sewer system.

2. City of Dubuque Flow Metering Program

During 2006 and 2007 the City of Dubuque operated six flow meters installed at eleven locations throughout system of sanitary sewer interceptors.

Table 1 below documents the dates and durations of the installation of each meter while **Map-1** on the following page identifies the location of each meter installation site.

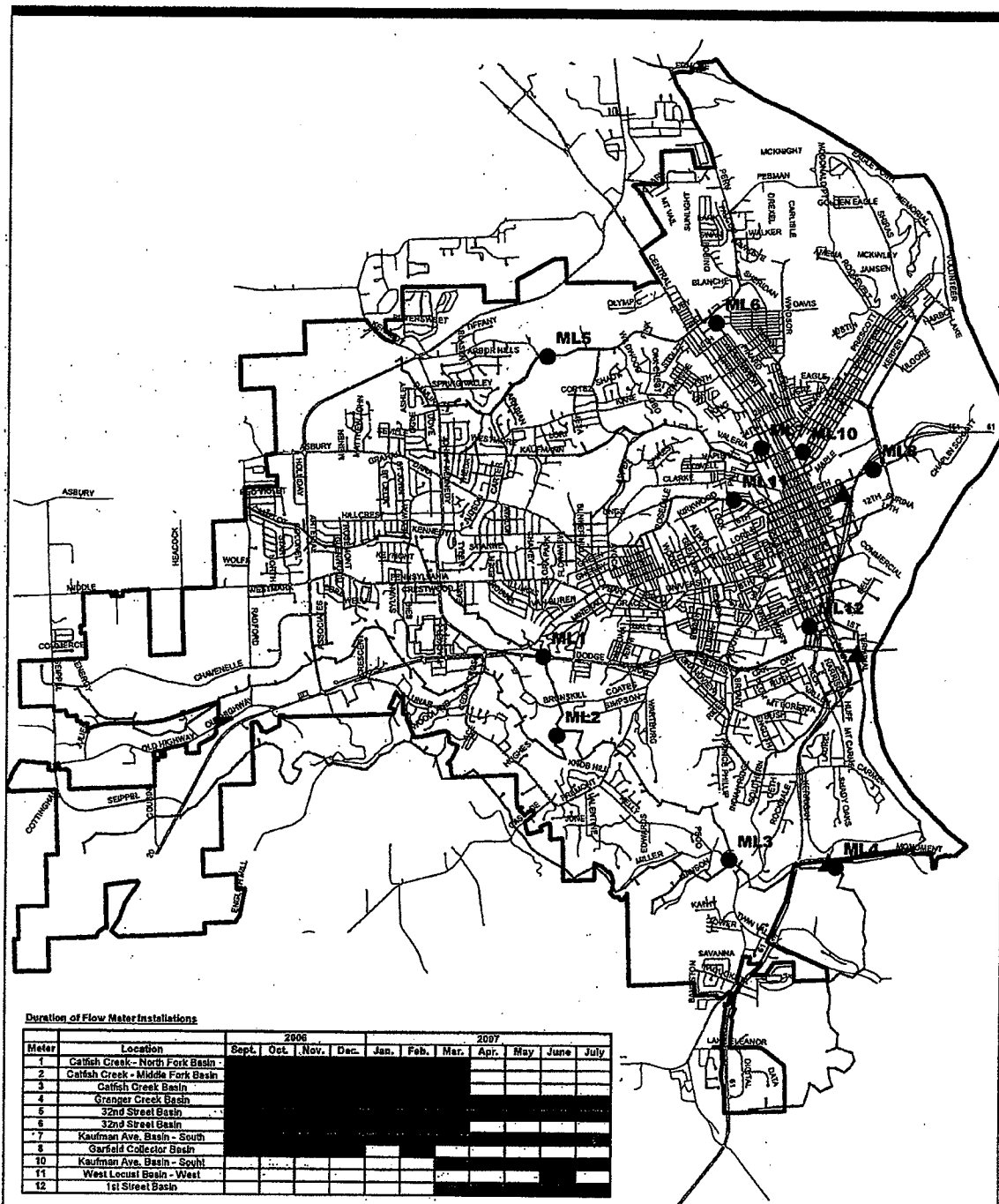
Table 1
Summary of Flow Meter Installations
City of Dubuque Comprehensive Sanitary Sewer Master Plan Project

Meter	Location	2006				2007						
		Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July
1	Catfish Creek - North Fork Basin											
2	Catfish Creek - Middle Fork Basin											
3	Catfish Creek Basin											
4	Granger Creek Basin											
5	32nd Street Basin											
6	32nd Street Basin											
7	Kaufman Ave. Basin - South											
8	Garfield Collector Basin											
10	Kaufman Ave. Basin - Sout											
11	West Locust Basin - West											
12	1st Street Basin											

The flow meters were area-velocity style meters and collected data for flow depth and velocity at 15-minute increments. This data was converted internally by the meter to produce volumetric flow rates, also on a 15-minute incremental basis.

The City of Dubuque operates three continuously recording rain gauges. These gauges are tipping-bucket gauges that record data at 5-minute increments with a minimum depth measurement of 0.01 inches. Installation of the rainfall gauges occurred in winter of 2006/2007 with data supplied for this study starting January 1, 2007. Rainfall data was obtained from the Iowa State Climatology Bureau for events prior to January 1, 2007. The data provided by the Climatology Bureau was incremental hourly data.

Rainfall data was reviewed to identify events of significance through a qualitative process which consisted mostly of determining whether a given event created a discernable effect on flow data recorded by the various flow gauges. There were 21 rainfall events selected through this process that occurred between September 19, 2006 and July 24, 2007, the period during which flow meters had been installed. The continuous record of flow data for each flow meter site was plotted against the corresponding record of rainfall data from the nearest rain gauge to the flow meter as determined by a Thiessen polygon method. The Wet Weather Flow (WWF) response (Rainfall Dependent Inflow and Infiltration, or RDII) observed in the flow record for each meter was characterized as presented in **Tables 2 and 3** below. The Dry Weather Flow (DWF) for each meter was determined by observing data from repeated weeks (Sunday through Saturday) occurrences where there was no rainfall occurring and where there was no apparent RDII response from antecedent rainfall events.



Flow Meter Locations

MAP-1

City of Dubuque

Dubuque County, Iowa

Legend

- Meter Locations
- ▲ Lift Stations
- ▭ Dubuque City Limits
- Sanitary Manholes
- Sanitary Mains
- Street CurbLines

Source:
City 3850 Data



Table 2
Flow Meter Data
DWF, WWF and Peaking Factors

		Meter Location										
		1	2	3	4	5	6	7	8	10	11	12
DWF (cfs)	DWF	1.41	0.50	0.27	0.03	0.57	1.62	0.19	1.43	3.52	0.48	0.20
WWF (cfs)	Event 1: Sept. 21-22, 2006	2.12	0.76	0.45		1.14	1.98	0.27	2.14			
	Event 2: Oct. 10-11, 2006						1.78					
	Event 3: Oct. 21, 2006	2.52		0.53		0.96	2.03	0.33	2.09			
	Event 4: Oct. 28, 2006											
	Event 5: Nov. 10, 2006	2.25	0.80	0.31		0.76		0.31	1.85			
	Event 6: Nov. 26, 2006	1.87	0.56	0.29		1.07	1.54	0.42	1.65			
	Event 7: Nov. 27-28, 2006	3.19	1.29	0.98		1.76	2.43	0.38	2.16			
	Event 8: Nov. 29, 2006	2.74	1.09	0.80		1.58	2.43	0.36	2.34			
	Event 9: Dec. 20-21, 2006	2.83	1.23	0.78		1.63		0.33	2.36			
	Event 10: Mar. 21, 2007					0.74				5.01		
	Event 11: Mar. 30, 2007					0.58				5.26		1.45
	Event 12: Apr. 3, 2007					1.83		0.33		7.35		2.50
	Event 13: Apr. 24, 2007					1.49		0.33		5.93		2.41
	Event 14: May 31, 2007					1.00		0.22		4.59		
	Event 15: June 1, 2007							0.65		7.73		1.89
	Event 16: June 2, 2007					0.89		0.31		6.31		3.28
	Event 17: June 21, 2007					0.94		0.29		7.13	0.85	
	Event 18: July 3, 2007					1.94		1.89		14.66		1.89
	Event 19: July 16, 2007 A.M.					0.76		0.45		10.29		0.65
	Event 20: July 16, 2007 P.M.					0.62		0.29		5.28		0.85
	Event 21: July 17-18, 2007					3.68		2.87		20.48		2.14
Peaking Factor	Average Peaking Factors:	1.77	1.91	2.19		2.28	1.25	3.11	1.46	2.37	1.76	9.47
	Max. Instantaneous Peaking Factor:	2.26	2.58	3.63		6.45	1.50	15.13	1.65	5.82	1.76	16.38
	Peak Hourly Volumetric Peaking Factor:	1.41	1.26	1.38		1.65	1.27	5.10	1.36	2.19	1.64	12.06

Table 3
Comparison of Wet Weather Flow Responses for Each Metershed

Metershed	Average Peaking Factor	Max. Instantaneous Peaking Factor	Peak Hourly Volumetric Peaking Factor	10-State Standard Peaking Factor	Sewershed Area (ac)	Parcels per Acre (#/ac)	MHs per Acre (#/ac)	Pipe Length Per Acre (ft/ac)	Pipe Length (ft)	Inch-Miles of Pipe (in-miles)	RDI (Max Inst.) (gpd)
1	1.77	2.26	1.41		2,451	1.66	0.04	8.39	20,564	2,496	826
2	1.91	2.58	1.26		2,661	0.34	0.04	12.56	33,406	5,802	144
3	2.19	3.63	1.38		2,808	0.23	0.04	12.14	34,102	5,849	108
4	I.D.	I.D.	I.D.		394	0.01	0.02	6.00	2,361	333	I.D.
5	2.28		1.65		1,088	1.72	0.07	16.16	17,576	2,722	874
6	1.25	1.50	1.27		1,954	0.69	0.04	8.35	16,312	2,351	668
7	3.11				319	3.51	0.08	15.48	4,936	561	3,308
8	1.46	1.65	1.36		1,078	0.74	0.05	13.32	14,353	2,162	705
10	2.37		2.19		1,133	3.18	0.08	18.36	20,804	3,834	3,453
11	1.76	1.76	1.64		443	3.06	0.09	16.17	7,161	771	712
12					313	4.37	0.08	17.08	5,351	691	3,069

Table 2 contains Dry Weather Flow (DWF) and Wet Weather Flow (WWF) responses for 21 rainfall events collected during the metering period of September 2006 to July 2007. The data is summarized according to instantaneous peak, which can be indicative of 'inflow' portions of I/I and hourly and volumetric peak for the worst event, which can be indicative of infiltration components.

Note that there is some risk in assessments using instantaneous peaks when compared to average daily DWF values because the actual instantaneous peaking factor may appear reduced if the rainfall occurs at night during a diurnal trough in flows.

Also note that the 'worst' case rainfall event was the July 16 to 18 rainfall event. This event fell according to the following distribution:

*65-hr (Total Event Duration) = 5.8 inches, Approximate return frequency = 22-yrs
24-hr = 4.25 inches, Approximate return frequency = 9-yrs
12-hr = 4.04 inches, Approximate return frequency = 14-yrs
6-hr = 3.87 inches, Approximate return frequency = 22-yrs
2-hr = 2.78 inches, Approximate return frequency = 10-yrs*

So, instantaneous peaks may be higher than what might be expected for the City given that the design service level that the City decided upon was the 5-yr event.

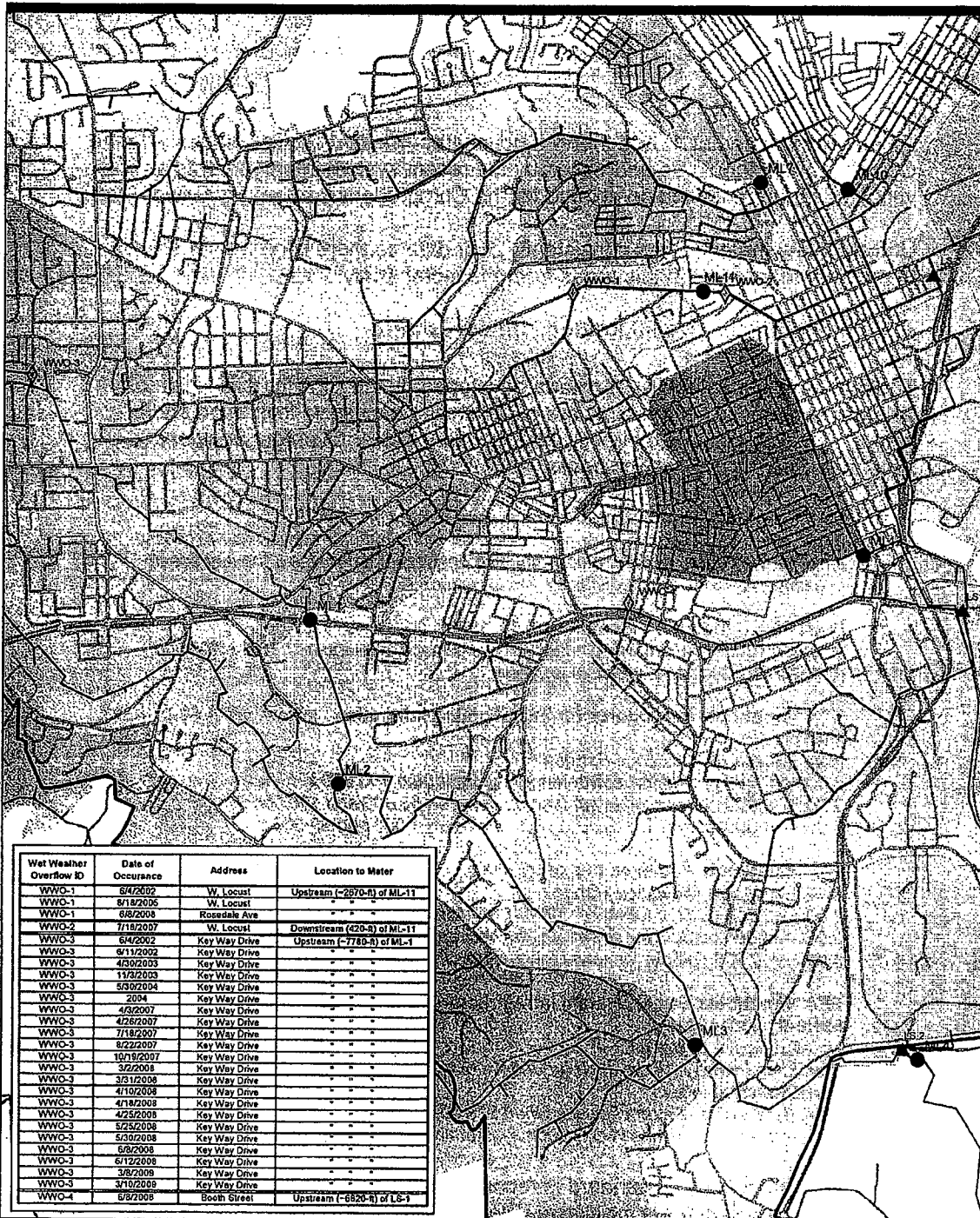
Map-2 on the preceding page identifies the portion of the City tributary to each meter location. The 'metershed' drainage area was used to determine data presented in Table 3 regarding the number of parcels per metershed, the total length of pipe per metershed, and the inch-diameter-miles of pipe per metershed.

Table 3 contains a summary of the calculated peaking factors from Table 2 and provides comparison data from various peaking-factor evaluations discussed in section 4 including the 10-State Standards and EPA RDII evaluation methods. Data in this table is useful for comparing metersheds based on system composition and response to wet weather events. The data shows that metershed 5, 7, 10, and 12 have unusually high instantaneous peaking factors and meters 7 and 12 also have unusually high volumetric peaking factors.

Note that according to data presented in section 4 below, it might appear that the RDII values shown on the far-right column of Table 3 appear to be within allowable levels. However, this data is presented for comparison purposes only since the data that was used to determine sanitary sewer length and inch-diameter-miles was from unverified legacy-GIS data.

3. Observed Sanitary Sewer Overflows

Map-3 on the following page shows areas where the City has recorded events that resulted in sanitary sewer overflows. This is restricted mostly to the Upper



Wet Weather Overflow Locations

MAP-3

City of Dubuque

Dubuque County, Iowa

Legend

- ▲ Lift Stations
- Meter Locations
- ▭ Dubuque City Limits
- Sanitary Manholes
- Sanitary Mains
- ▭ Sub-Sewersheds

Metersheds

1	6	12
2	7	Not Flowing to Meter
3	8	Wet Weather Overflow Locations
4	10	
5	11	

Source:
City Base Data



Catfish Branch (meter 1) and the W. Locust area (meter 11). The issues with the Catfish branch should be addressed by the recent system improvements as was validated in the modeling completed for the Comprehensive Sanitary Sewer Plan.

Unfortunately meter 11 has consistently poor data so there is no way to assess I/I problem magnitude in this areas from the meter study.

4. Historical Excessive Infiltration / Inflow Criteria

The following is a select list of criteria developed by the EPA for evaluation of whether sanitary sewer systems are experiencing excessive infiltration and/or inflow. This list was taken directly from *Sanitary Sewer Overflow Solutions*, American Society of Civil Engineers, April 2004.

EPA Program Requirements Memorandum (PRM 78-10, 1978)

Established 1500 gpdidm (gallons-per-day-per-inch-diameter-mile) as non-excessive leakage allowance, perform a cost effective analysis to determine if the leakage is possibly excessive and qualifies for investigation.

Draft Program Requirements (PRM 80, 1980)

Proposed 3000 gpdidm as non-excessive allowance, maximum of 30% infiltration removal for use in cost-effective analysis.

EPA Handbook: Procedures for Investigating Infiltration / Inflow, (EPA 68-01-4913, 1981)

Non- Excessive Allowance Ranges

2,000 – 3,000 gpdidm for sewer lengths greater than 100,000 If

3,000 – 5,000 gpdidm for sewer lengths between 50,000 and 100,000 If

5,000 – 8,000 gpdidm for sewer lengths between 1,000 and 50,000 If

EPA Handbook: Facilities Planning, 1981

Non- Excessive Allowance Ranges

2,000 – 3,000 gpdidm for sewer lengths greater than 100,000 If

3,000 – 6,000 gpdidm for sewer lengths between 10,000 and 100,000 If

6,000 – 10,000 gpdidm for sewer lengths less than 10,000 If

EPA Handbook: Sewer System Infrastructure Analysis and Rehabilitation (EPA 625/6-91/030, 1991)

Non-Excessive Infiltration

Preceding year's 7-14 day high ground water wastewater flow less than 120 gpcpd.

Non-Excessive Inflow

Total daily average storm flow less than 275 gpcpd.

No operational problems in collection system and WWTP.

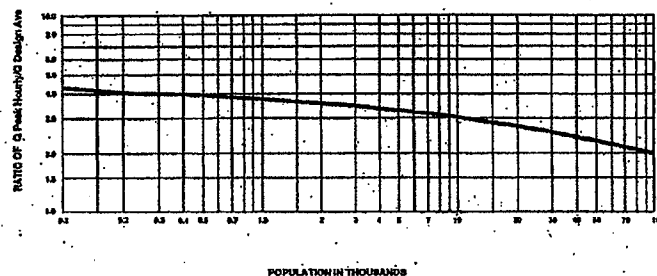
In addition, the following standard is recommended in the publication, *Recommended Standards for Wastewater Facilities, Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 2004*. This document is commonly referred to as the '10-state standards.'

Chapter 10 Engineering Reports and Facility Plans

11.243 Hydraulic Capacity for Wastewater Facilities to serve New Collection Systems.

- The sizing of wastewater facilities receiving flows from new wastewater collection systems shall be based on an average daily flow of 100 gallons per capita plus wastewater flow from industrial plants and commercial facilities.
- The 100 gal/cap/d figure shall be used which, in conjunction with a peaking factor from Figure 1, is intended to cover normal infiltration for systems built with modern construction techniques.

FIGURE 1.
RATIO OF PEAK HOURLY FLOW TO DESIGN AVERAGE FLOW



Q peak hourly: Maximum Rate of Wastewater Flow (Peak Hourly Flow)

Q design ave: Design Average Daily Wastewater Flow

Source: $Q \text{ Peak Hourly} / Q \text{ Design Ave} = \frac{10 + \sqrt{P}}{4 + \sqrt{P}}$... (P = population in thousands)

Pick, G.M. and Gray, J.D. "Water Supply and Wastewater Disposal"
1st Ed., John Wiley & Sons, Inc., New York (1952), p. 128

5. Success of I/I reduction Programs

Although it is feasible to identify sources of I/I, it can be difficult to estimate the magnitude of individual sources and the potential success rate of rehabilitation projects on I/I reduction. The Environmental Protection Agency's (EPA) *Evaluation of Infiltration/Inflow Program Final Report, 1991* extensively evaluated the productiveness of I/I analysis and sewer rehabilitation. The first finding of the report says: "The EPA program was implemented to eliminate excessive I/I - generally this has not been accomplished." This stresses the caution that should be applied to I/I or Sanitary Sewer Evaluation Survey (SSES) estimates. They are not precise calculations. In many cases, I/I has continued to be excessive following rehabilitation. The limited success in removal of I/I is due to the multitude of opportunities in which I/I can enter the sanitary sewer system. Flow reductions are generally overstated because difficulties in estimating I/I arise when accounting for year-to-year environmental variations.

According to the EPA, the largest I/I sources in rehabilitated sewers are house service connections and non-rehabilitated pipe joints. While replacement of the sanitary sewer mains undoubtedly help reduce I/I into the sanitary sewer system, excessive RDII flows may continue to be a problem following completion of the improvements.

Experience in other communities the size of Dubuque indicates that I/I are typically only reduced by 10 to 15% through improvements to the public sanitary sewer system. A more comprehensive approach that also addresses laterals and sump pump cross connections will improve the likelihood of higher levels of reduction.

6. RDII Contributions from Public vs. Private Sewer Systems

Experience analyzing RDII in sanitary sewer systems shows that a variable amount of flow comes from private services. Determining the quantity based on past experience is not valid for estimating RDII in the City of Dubuque. There are two reasons for this; the first is that, generally speaking, there is too much variability from system to system; quantifying RDII amounts is difficult unless each service is metered. Since that is not feasible, smoke and dye testing is used to determine which services are contributing to large quantities of I/I. This can determine inflow from illegal cross connections of sump pumps, roof drains, and floor drains, or from old and deteriorated service laterals. It will assist in showing which particular private connections are the 'big offenders' but will not provide quantitative data suggesting 'how big'.

The second reason that past experience cannot be applied to Dubuque is simple due to the fact that there is limited data available describing the complete extent of the sanitary sewer collection system. For example, under a previous engineering study, the City surveyed the entire trunk interceptor system and the first pipe segment for branch sewers, so there is a high level of confidence in the data describing the manholes and pipe connections for 62 miles of the sanitary sewer system. However, there is virtually no data available on the condition of pipes between manholes. The City also has a GIS database of information containing geometric descriptions of approximately 200 additional miles of branch lines, but there is little data beyond alignment, length, and diameter in this database. Presumably all the information in this system relates to publicly owned sewers, but that is not clearly indicated. There is currently no information available regarding the location, length, diameter, or condition of privately owned systems that connect to the public system.

7. Alternatives for Investigating Infiltration and Inflow

It is assumed that, because the City of Dubuque owns several flow meters that the City will continue flow metering within areas of concern. Beyond this additional flow monitoring, the existing sewer system can be further evaluated by various observation techniques, in order to quantify the extent of impact throughout various priority areas. Observation techniques include physical surveys, manhole inspections, smoke testing, dye testing, and televising. Each is discussed further below:

a) Physical Survey

A physical survey of the sewer system is performed to isolate obvious problem areas and to determine the general condition of the sewer. The physical survey includes above ground evaluations and observations to evaluate such conditions as topography, streets, alleys, access to manholes, etc. Potential problem areas, such as waterways, river crossings, natural ponding areas, etc. are also identified. This activity is similar to that conducted for the sanitary sewer interceptors as part of the survey tasks of the Comprehensive Sanitary Sewer Master Plan project recently completed by the City.

b) Manhole Inspection

Manhole inspections include examining the physical conditions of manholes and documenting observations made. Manhole defects are documented, including:

- Broken, Cracked or missing manhole covers
- Broken or cracked frames;
- Deteriorated or defective cones
- Deteriorated or defective wall segments
- Root Intrusion; and / or
- Deteriorated or defective pipe seals;

c) Home Inspections

Home inspections involve door-to-door canvassing to check for floor drain or sump pump connections to the sanitary sewer system.

d) Smoke Testing of Sewer Segments

Smoke testing is an inexpensive and quick method for determining and detecting sources of inflow within sewer systems. A non-toxic, non-staining low-pressure smoke is pumped through a manhole into the sewer pipe for distances up to 600 feet. Smoke plumes from manholes and from the ground indicate defects in manholes, sewer lines, and sewer laterals through which I/I may enter the sewer. Many inflow sources can be located in this manner, including:

- Roof Leaders,
- Cellar, yard and area drains;
- Foundation drains;
- Abandoned building sewers;
- Faulty sewer connections;
- Illegal connections;

- Sewer Cross connections;
- Structural damages; and
- Leaky joints

Smoke testing is also a procedure to assist in localizing the areas to televise to find the exact locations of faulty joints and pipes. This is primarily completed for public sewer mains and manholes, but can be used to determine breaks in private laterals.

e) Dye Testing

Dye testing can be used to further investigate areas of inflow when possible contribution sources did not become evident through conventional smoke testing. Dye can be added to roof drains, sump pumps, etc. and used in conjunction with televising; televising would be used to monitor the sewer mains to determine if the dye was flowing into the main sewer lines, thus showing illegal cross connections.

f) Televising

Televising is a procedure where a video camera is pulled through sewer mains and assists in determining exact locations of failures in pipes and manholes. Televising can be used alone or in conjunction with dye testing. Televising is the best way to localize the areas of infiltration.

8. Recommendations

Four problem metersheds (5, 7, 10 & 12) were identified when comparing peaking factors and metershed data. A fifth problem metershed is known due to reported complaints; that being metershed 11.

It is recommend that additional I/I studies for the previously listed sewersheds be conducted according to the following orders of priority:

- #1 - Metershed 11, simply because of known problems.
- #2 - Metershed 12, because of very high volumetric and instantaneous peaking factors.
- #3 - Metershed 7, because of very high volumetric and instantaneous peaking factors (although less than meter 12)
- #4 - Metershed 5, because of high instantaneous peaking factors
- #5 - Metershed 10, also because of high instantaneous peaking factors.

In addition to redeployment of flow meters within these basins, it is recommended that the City conduct additional studies including smoke testing, televising, and, if necessary, dye testing.

It is recommended that smoke testing be utilized in each prioritized sub-basin. It is an easy, inexpensive way to determine large contributors of inflow. This should also be used in conjunction with manhole inspection and a physical survey of the sub-basins.

Once sub-basins have been prioritized it is recommended to complete televising in the biggest problem areas of each sub-basin to determine exact locations of needed repair. If further investigation is needed, dye testing should be used in a case by case basis to determine if specific storm or drain connections are illegally connected to the sanitary sewer system.

EXHIBIT E

CAUTION!

This area may be contaminated due to a temporary overflow from a sanitary sewer. Please stay clear of the area and avoid physical contact, as it may pose a health risk.

PRECAUCIÓN!

Esta área puede estar contaminada debido a un desbordamiento temporal de un alcantarillado sanitario. Por favor, manténgase alejado de la zona y evite el contacto físico ya que puede suponer riesgo para la salud.

EXHIBIT F

Water quality protection through "Green Alleys"—Revised January 2011

Description of Project: The Green Alley Project would involve the reconstruction of four (4) alleys in the City of Dubuque using permeable interlocking concrete pavers. The identified alleys are approximately 300 feet long and 20 feet wide. The permeable pavement design includes a 2-foot thick stone sub-base that would ensure the infiltration of stormwater. In addition to the permeable pavement, the aging sanitary sewer main and service lines within the alley ROW would be replaced at the same time, although the cost of such replacement is not being included in the costs associated with the proposed SEP.

Category of SEP: Pollution Prevention. The infiltration of storm water will reduce runoff, treat the rain as it filtrates through the sand, and recharge aquifers. As they provide for the infiltration of stormwater runoff, permeable pavers have a high removal of both soluble and particulate pollutants, where they become trapped, absorbed, or broken down in the underlying soil layers. The conservative design pollutant removal rates for total phosphorus and total nitrogen is 80% and as high as 90% for heavy metals.

Anticipated Cost and Timeline:

It is anticipated that the alleys could be reconstructed with new utilities and permeable pavement for approximately \$760,000, of which ~~\$300,000~~ is for the construction of the permeable alley. This work would start in calendar year 2011 and be completed by the end of calendar year 2014.

SEP Required Characteristics:

1) Is there a relationship between the underlying violation and the human health or environmental benefits that will result from the SEP? Yes. Construction of the permeable alleys will reduce the peak flow of runoff to the Mississippi River while at the same time reducing the pollutant load associated with stormwater runoff that discharges into the Mississippi. Replacing the aged sanitary sewer line and services will reduce the infiltration of stormwater into the sanitary sewer system which can lead to sanitary sewer overflows.

2) How does this SEP improve, protect or reduce risks to public health or the environment? Infiltration of storm water reduces the peak discharges that may reach the storm sewer. The first flush of pollutants is also reduced due to filtering of the water through a stone and sand filter bed. Replacing aged sanitary sewer lines minimizes the infiltration of groundwater into the sanitary sewer system which can contribute to sanitary sewer overflows.

3) Is the SEP not "otherwise legally required" of the Community? No. The construction of permeable alleys and the resulting filtration of stormwater is not required of the community.

SEP Required Guidelines:

1) Would the SEP be consistent with the intent and/or requirements of the Clean Water Act? Yes. The reduction of first flush pollutants associated with stormwater runoff that discharges into receiving waters is in the spirit of the Clean Water Act.

2) Does the SEP advance at least one of the objectives of the Clean Water Act? Yes, protection of water quality.

3) Is the EPA being requested to pay any role in managing or controlling the funds used for this SEP? No. The EPA is not requested to play any role.

681022.1