renew EVANSVILLE

Investing in clean water resources

Volume 1
Final Integrated Overflow Control Plan

Unifying Document for the Long-Term Control Plan, Sanitary Sewers Remedial Measures Plan, and Wastewater Treatment Plant Facility Plan

Submitted

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I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and its attachments were prepared under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gather and present the information contained therein. I further certify, based on my inquiry of those individuals immediately responsible for obtaining the information, that I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

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Acronyms and Abbreviations

ACS	American Community Survey
CAC	Citizens Advisory Committee
CAFR	Comprehensive Annual Financial Report
City	City of Evansville
CMOM	Capacity, Management, Operation and Maintenance Program
CPH	cost per household
CSO	combined sewer overflow
CSS	combined sewer system
CWA	Clean Water Act
Decree	Consent Decree approved by federal court in June 2011
DPW	Department of Public Works
E. Coli	*Escherichia coliform*
EPA	U.S. Environmental Protection Agency
FCA	Financial Capability Analysis
I/I	infiltration/inflow
IDEM	Indiana Department of Environmental Management
IOCP	Integrated Overflow Control Plan
LTCP	Long-Term Control Plan
mgd	million gallons per day
MHI	Median Household Income
MSD	Metropolitan Sewer District
O&M	operation and maintenance
PE	Primary Effluent
RI	Residential Indicator
SSO	sanitary sewer overflows
SSRMP	Sanitary Sewers Remedial Measures Plan
SSS	Separate Sanitary Sewer

USACE	U.S. Army Corps of Engineers
Utility	City of Evansville Water and Sewer Utility
WWTP	wastewater treatment plant

Terminology and Naming Conventions

The following terminology is used throughout this document to describe the Evansville Water & Sewer Utility's (the Utility's) wastewater collection and treatment system:

- **Combined Sewer Overflow (CSO) Activation**: any combined sewer overflow discharge resulting in a flow of at least 0.001 million gallons per day (MGD) over the metered time step and a total volume of at least 0.1 MG. Activations also have at least 24 hours of flow less than 0.001 MGD between occurrences.
- **Bypass:** the intentional diversion of waste streams from any portion of a wastewater treatment plant (WWTP).
- **Discharge:** the release of treated or untreated waste streams from sewer infrastructure.
- **Overflow:** the discharge of untreated waste streams.

SECTION 1

Introduction

In accordance with the Consent Decree (Decree) entered into with the Indiana Department of Environmental Management (IDEM), the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Justice, the City of Evansville (City) and Evansville Water & Sewer Utility (Utility) submit for agency review this final Integrated Overflow Control Plan (IOCP). This IOCP presents the City's recommended plan to reduce sewage overflows and comply with Clean Water Act (CWA) requirements to modernize its sewer system. The IOCP integrates the combined sewer overflow (CSO) Long-Term Control Plan (LTCP), the Sanitary Sewers Remedial Measures Plan (SSRMP), and Wastewater Treatment Plant (WWTP) Facility Plan into a long-term capital plan that balances and prioritizes system improvements with available funding.

The Utility refers to the capital program described in this IOCP as ***Renew Evansville.*** Through this endeavor, the *Renew Evansville* IOCP will propose the largest investment in clean water infrastructure in the City's history and will significantly upgrade of one of the City's most important, yet unseen, assets—its sewer system.

To comply with the CWA and the federal mandate to improve the City's sewer system, on May 31, 2013, Evansville proposed a Recommended IOCP to be implemented in two phases totaling 28 years and approximately $540 million (in 2012 dollars) in capital improvements to the wastewater system. **The Recommended Plan is described in detail in Section 5 below.** EPA and IDEM rejected the Recommended Plan on June 16, 2014. After extensive discussions, the City and EPA and IDEM agreed to a Negotiated Plan to be implemented over 25 years and costing approximately $730 million in 2015 dollars. **The final Negotiated Plan is set forth in Section 6 below and supercedes the Recommended Plan.**

1.1 Background Information

The *Renew Evansville* IOCP contains projects to address the City's CSOs as well as structural and capacity problems in portions of the separate sanitary sewer system. The IOCP will achieve significant reductions in CSOs into the Ohio River and Pigeon Creek during rain and snowmelt events, and addresses backups and sewer overflows in the separate sanitary sewer system. This plan also focuses on remedying the odor and aesthetic issues in Bee Slough through the implementation of an innovative and robust CSO capture and wetland treatment system.

This major capital program will include:

- Dramatic upgrades to existing sewer infrastructure
- Construction of new sewer infrastructure, including projects to address Bee Slough
- Sustainable and "green" stormwater control infrastructure solutions
- Improvements to the Utility's operation and maintenance (O&M) practices

1.1.1 Combined Sewer Overflows and Regulatory Requirements

Approximately 100 years ago, Evansville and many other cities across the United States began building sewers to carry stormwater away from homes, businesses, and streets to nearby rivers and streams. Later, when indoor plumbing was introduced, homes and businesses connected their sewage lines to those same storm sewers, making them "combined" sewers (sewer pipes

that by design carried both stormwater and wastewater to adjacent waterways). In the mid-20th century, Evansville and other cities upgraded the sewer infrastructure to include intercepting sewers along rivers and other waterways that route a portion of these flows to WWTP). In dry weather, wastewater is sent to WWTPs for treatment. During rain events or snowmelt, CSOs occur when the amount of stormwater runoff and sanitary waste exceeds the capacity of the pipes, resulting in overflows into local water bodies. The required capital plan to address CSOs is referred to as the CSO LTCP. As previously stated, the LTCP, am SSRMP, and a Facility Plan for the East and West WWTPs comprise Evansville's IOCP, which is a comprehensive, overarching plan to dramatically upgrade the City's sewer system to address sewer system overflows.

The LTCP addresses the problem of CSOs discharging waste and pollutants into rivers and streams, typically during wet weather events when rain water enters and overwhelms the system. Until the 1950s, overflows from combined sewers was an accepted practice in communities as both stormwater and wastewater were collected in the same pipe and transported to waterways for disposal during wet weather. Communities across the country with combined sewer systems are now required to develop long-term CSO control plans with the goal of reducing the number, duration, and volume of overflows and coming into compliance with the CWA and EPA's 1994 Combined Sewer Overflow Control Policy. Indiana has over 100 communities with CSOs and over 1,000 communities across the country are working to develop, fund and implement LTCPs, all at varying levels of completeness.

1.1.2 Evansville CSOs and Plan to Address Them

In Evansville, approximately 2 billion gallons of combined wastewater and stormwater leave the sewer system through 22 outfalls in a Typical Year and are dumped without treatment directly into the Ohio River and Pigeon Creek. Overflows can occur with as little as 0.1 inch of rainfall, and the City experiences approximately 50 days of CSOs in a Typical Year. Consequently, during rain events raw sewage and other items in the sewer system are dumping into and polluting our waterways.

The City's commitment to address sewer overflows and improve operations are set forth in a federal Decree, or agreement, entered into in 2010 between the City, EPA and the Indiana Department of Environmental Management that resolved certain allegations that the City was violating the CWA. The Decree was approved by a federal court in June 2011.

Under the Negotiated IOCP, the Evansville Water and Sewer Utility will address and dramatically reduce the number of CSOs that occur in the City through 25-year implementation plan. When complete, the plan will reduce overflows from approximately 50 activations per year to 4 during a Typical Year and increase the combined sewer system's percent capture from 35 to 98 percent and will protect water quality. EPA's CSO Control Policy seeks to have cities reduce overflows to 0 to 12 activations per year and increase percent capture to 75 to 100 percent. The CWA requires protection of water quality. Therefore, the proposed LTCP meets the regulatory thresholds put forth by EPA and the CWA. It is worth noting that the complete elimination CSOs is cost prohibitive and simply not practical, so residual CSOs will occur during some large storm events. The cost of the LTCP portion of the IOCP over 25 years at $729 million.

The City's initially proposed plan reduced the number of system-wide CSOs to 12 CSO activations in a Typical Year because this level of control would maximize the water quality benefits on Pigeon Creek and the Ohio River. A robust water quality analysis of Pigeon Creek

and the Ohio River has shown that the waterways are significantly impaired when they reach the City and reducing the City's CSO activations to less than 12 in a Typical Year result in no additional days of water quality compliance for *Escherichia coliform (E. Coli)* bacteria (determined to be the only pollutant of concern) during the recreational season, from April to October.

The negotiated LTCP is comprised of a combination of remote storage, green sustainable infrastructure, increased treatment plant capacity (set forth in Volume 4 of the IOCP), three remote high-rate treatment facilities, sewer separation in some areas, better control of existing flow to maximize existing sewer pipes, and a large wetland to address and treat overflows at Bee Slough, essentially eliminating the old concrete slough as a holding area for untreated sewage. The engineering team developing the plan evaluated thousands of options and combinations solutions to arrive at a plan that will make dramatic improvements to the sewer system to comply with the federal mandate and CWA while attempting to keep costs as low as possible for rate payers. The plan and engineering analysis to arrive at the projects and technologies to accomplish this goal are set forth below in detail in Volume 2, The Long-Term Control Plan.

1.1.3 Sanitary Sewer Remedial Measures Plan

In addition to reducing releases from the combined sewer system, the IOCP will also address overflows and backups that occur in parts of the separate sanitary sewer system, referred to as sanitary sewer overflows (SSOs). In the Decree, EPA requires the Utility to eliminate anticipated SSOs. The plan to address SSOs is the SSRMP, which is detailed in Volume 3 of the IOCP.

The ultimate goal of the Utility's SSRMP is to prevent SSOs that may occur as a result of the sewer systems' inability to transport anticipated peak wet weather flows corresponding to the selected design storm to the sewer system trunk sewers or the WWTPs. The SSRMP focuses on reducing inflow and infiltration (I/I) of stormwater into the separate sanitary sewer pipes and SSO remediation.

Based on the results of the flow monitoring, assessments of the separate sanitary system, hydraulic modeling work, and the analyses completed to develop the SSRMP, the City is using an adaptive management approach to SSO control that focuses on continuous improvement and effective asset management. The SSRMP approach can be summarized as follows:

1. Invest in improvements early in the IOCP to remedy known defects and bottlenecks in the separate sanitary system.

2. Continue and expand the ongoing sewer assessment and flow monitoring program to identify and remove inflow sources and to verify the existence and extent of capacity limitations/ bottlenecks, with priority given to areas with reported SSOs that were identified through the flow monitoring and hydraulic modeling efforts as having potential SSOs.

3. Refine and recalibrate the hydraulic models on an ongoing basis to accurately assess and understand the benefits of I/I removal and wet-weather flow changes, and closely monitor and model areas with forecasted growth to ensure that adequate dry- and wet-weather capacity is available to convey flows without SSOs.

4. Implement additional, but yet to be determined capacity improvement, storage, or pumping improvement projects if sewer rehabilitation and I/I reduction efforts are not effective at controlling or eliminating SSOs and hydraulic capacity limitations.

The SSRMP portion of the Negotiated IOCP amounts to $52 million in capital improvements over the 25-year IOCP implementation schedule.

1.1.4 *Renew Evansville* Questions and Answers

Below are common questions and answers regarding *Renew Evansville*:

What is *Renew Evansville*?

In 2013, the Utility is planning what will be the largest capital improvement project in the City's history. This program (*Renew Evansville*) is in response to a state and federal mandate and will significantly upgrade one of Evansville's most important, yet unseen, assets…—its sewer system.

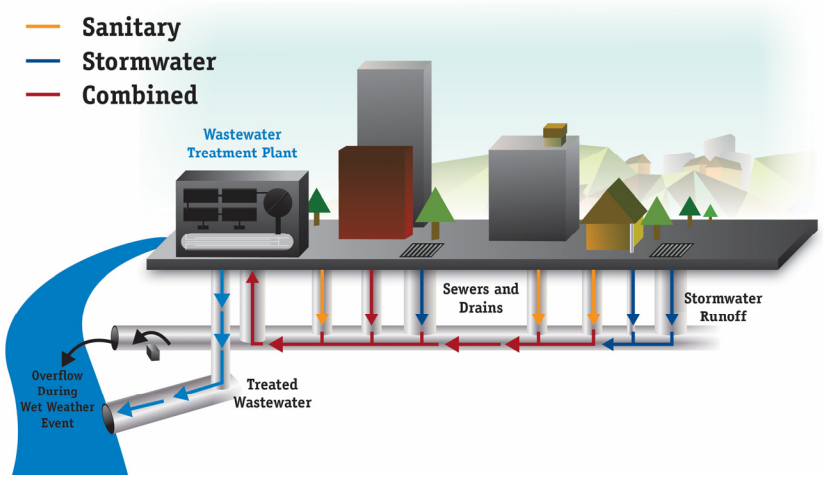
Renew Evansville is the Utility's plan to improve our City's sewer system and ensure compliance with the CWA.

What is the CWA?

The CWA, originally enacted in 1972, is enforced by EPA and IDEM. It mandates the control of sewer overflows across the United States. Specifically, the CWA requires that the City develop a long-term plan to control CSOs, consistent with applicable water quality standards.

What are CSOs?

Approximately 100 years ago, Evansville and more than 1,000 other cities across the United States began building sewers to carry stormwater away from homes, businesses, and streets. Later, with indoor plumbing, homes and businesses connected their sewage lines into those same storm sewers, making them "combined" sewers. In the mid-20th Century, these cities upgraded the sewer infrastructure to include intercepting sewers along rivers and other waterways that route a portion of these flows to WWTPs. CSOs occur when the amount of stormwater runoff and sanitary wastewater exceeds the capacity of the sewer infrastructure. In dry weather, wastewater is sent to WWTPs. During rain events or snowmelt, the pipes cannot contain the stormwater/snowmelt, resulting in overflows into local water bodies. This was the way sewer systems were designed to operate until the mid-1950s, when most state and local public health agencies began requiring new sewers to be separate from stormwater systems.



Why must CSOs be reduced?

CSOs contain municipal and industrial wastes, floating debris, and disease-causing bacteria, among other things. Those pollutants are harmful to the environment and humans, and can prevent people from using the waters for recreation and other purposes. Federal and state agencies are requiring that cities across Indiana and the nation address CSO discharges by

committing to large, long-term corrective capital programs. In essence, we have to rebuild our sewer infrastructure in Evansville.

How did CSOs become a problem for Evansville?

As previously noted, approximately 100 years ago, Evansville and many other cities across the United States began building sewers to carry stormwater away from homes, businesses, and streets. Later, with indoor plumbing, homes and businesses connected their sewage lines into those same storm sewers, making them "combined" sewers. WWTPs were constructed in the 1940s and 1950s to treat the waste, but in times of heavy rainfall or snowmelt, by design, wastewater overflowed into local water bodies. In 1994, EPA issued the National CSO Control policy, which was subsequently incorporated into Section 402(q) of the CWA. The policy requires the control of CSO discharges.

In the past decade, Evansville has invested more than $120 million to improve its sewer system. While these projects are largely eliminating the decades-old problem of flooding on the southeast side of Evansville and have expanded the capacity of its WWTPs, much work remains to address CSOs and other sewer system problems.

Why did the Department of Justice and EPA review Evansville's sewer system?

Since the mid-1990s, EPA has worked with the Department of Justice and state departments of environmental management to review CSO discharges across the United States. Indiana has CSOs in approximately 100 cities. EPA pursued consent decrees, which are binding legal agreements, with 10 of those cities, including Evansville. The other cities are addressing CSOs through agreements with the state. Regardless of whether the agreements are with federal or state regulators, all cities must work to reduce CSOs.

What was the result of EPA review?

The Utility agreed to the terms of the Decree with EPA, the Department of Justice, and IDEM in November 2010. That agreement was approved by a federal court in June 2011. The Decree requires specific elements and timeframes for Evansville's plan to significantly reduce its CSOs and address SSOs. That action plan has been formalized and is referred to as *Renew Evansville*.

What are the highlights of the Decree?

The Decree addresses:

- Immediate upgrades to existing infrastructure
- Development of a long-term capital plan to address CSOs as well as overflows and backups in parts of the separate sanitary sewer system
- Sustainable and green infrastructure solutions
- A regular and repeating sewer inspection and cleaning program

What happens if the Utility does not complete the infrastructure improvements on time?

Cities that do not meet the terms of a consent decree face fines and penalties. Many of these fines range from $1,000 to $8,000 for each day the terms are not met.

Have other cities entered into similar agreements with EPA? Have their programs been as large as the one the Utility is developing?

More than 1,000 cities across the United States have CSOs. Typically, the larger the city, the more robust and expensive the efforts must be to address CSOs. Approximately 10 cities in Indiana have entered into consent decrees with EPA. The other cities must still comply with the CSO policy, but their efforts are reviewed at the state level and implemented through discharge permits and/or state enforcement orders.

How does *Renew Evansville* relate to other City programs and initiatives?

The Utility will coordinate planning, design, and construction with several City departments, including those related to sustainability and maintaining streets and sidewalks.

Where can I learn more about the national challenge of updating water and sewer infrastructure?

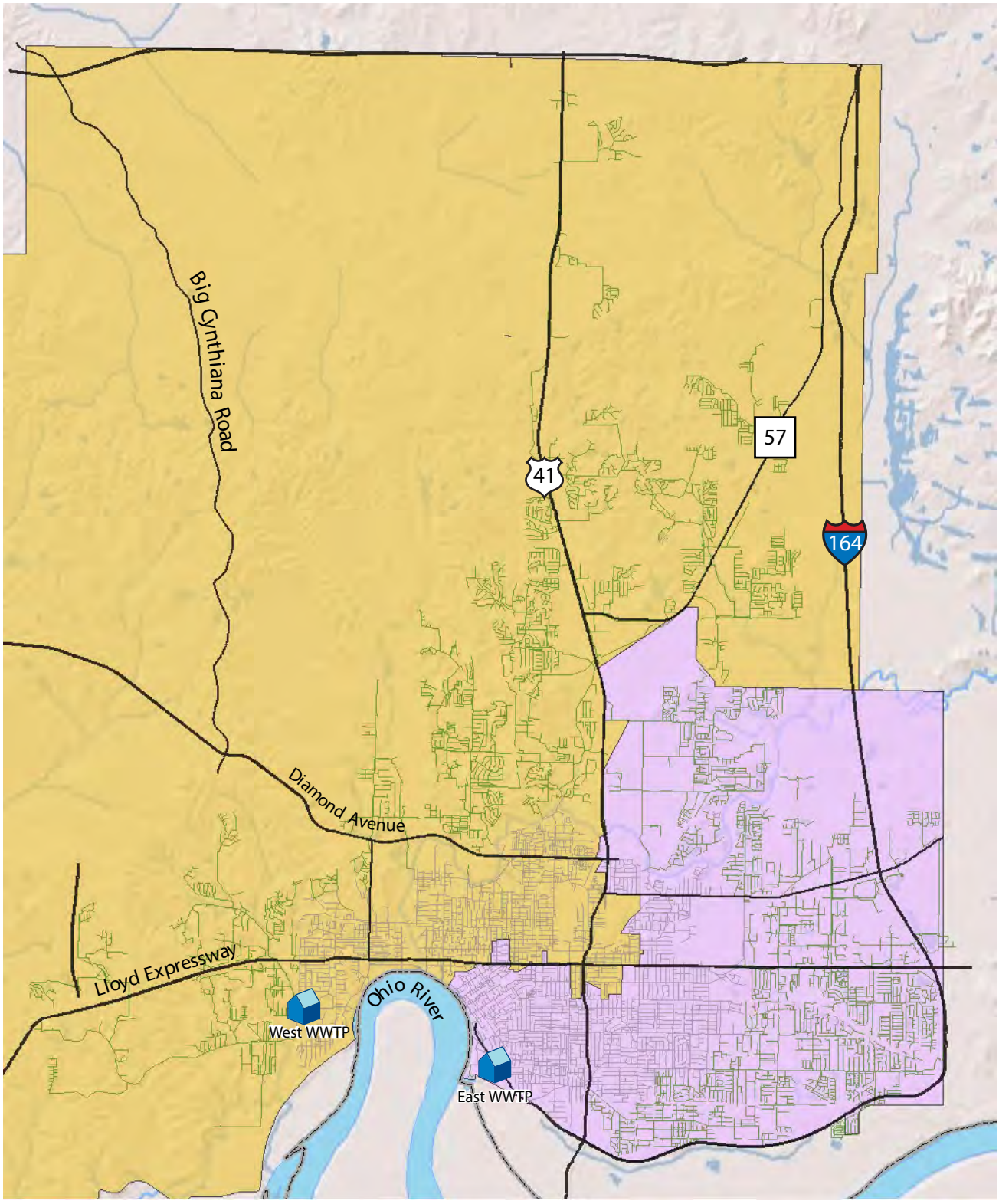
The American Water Works Association and Pennsylvania State University have documented the challenge on a national level. A 4-minute video about our aging system is available at www.liquidassets.psu.edu/liquid_trailer.wmv.

1.2 Overview of Evansville's Wastewater Infrastructure

The Utility owns, operates, and maintains wastewater facilities that serve approximately 67,800 households in the City and portions of Vanderburgh County, with a population served of over 160,000. The system contains over 800 miles of combined and separate sanitary sewer pipelines (60 percent combined and 40 percent separate), two WWTPs with a total combined dry-weather capacity of 48 million gallons per day (mgd), and 90 lift stations. The 65-square-mile service area is divided into two WWTP service areas that are separate and distinct, with no transfer of flow from one WWTP service area to the other. Figure 1-1 shows the Utility's service area.

In 2010, the Utility ended over 15 years of private management and operation of the wastewater system and brought management back under complete Utility control, which provided for a more flexible workforce and more robust, proactive inspection and maintenance of Utility assets.

The Utility's sewer system has expanded into a network of both sanitary and combined sewers, diversion structures, and other flow control devices. In the East and West Combined Sewer systems (CSSs), dry-weather flows are conveyed to the east or west WWTP for treatment prior to their ultimate discharge to the Ohio River. During wet-weather events, when the total combined sewage flow exceeds the capacity of the sewer, a mixture of sewage and stormwater runoff may be discharged to Pigeon Creek, Bee Slough, and the Ohio River. The CSS service areas are approximately 25 percent of the service area and encompass approximately 16 square miles. Presently, there are 22 CSO outfalls, all of which are summarized in Table 1-1.



Legend

- Wastewater Treatment Plant
- West WWTP Service Area
- East WWTP Service Area
- Separate Sanitary Sewer Area
- Hydrography
- Major Road
- Indiana State Boundary

6,000 Feet

North

Figure 1-1

Evansville Sewer Service Areas

Integrated Overflow Control Plan

May 31, 2013

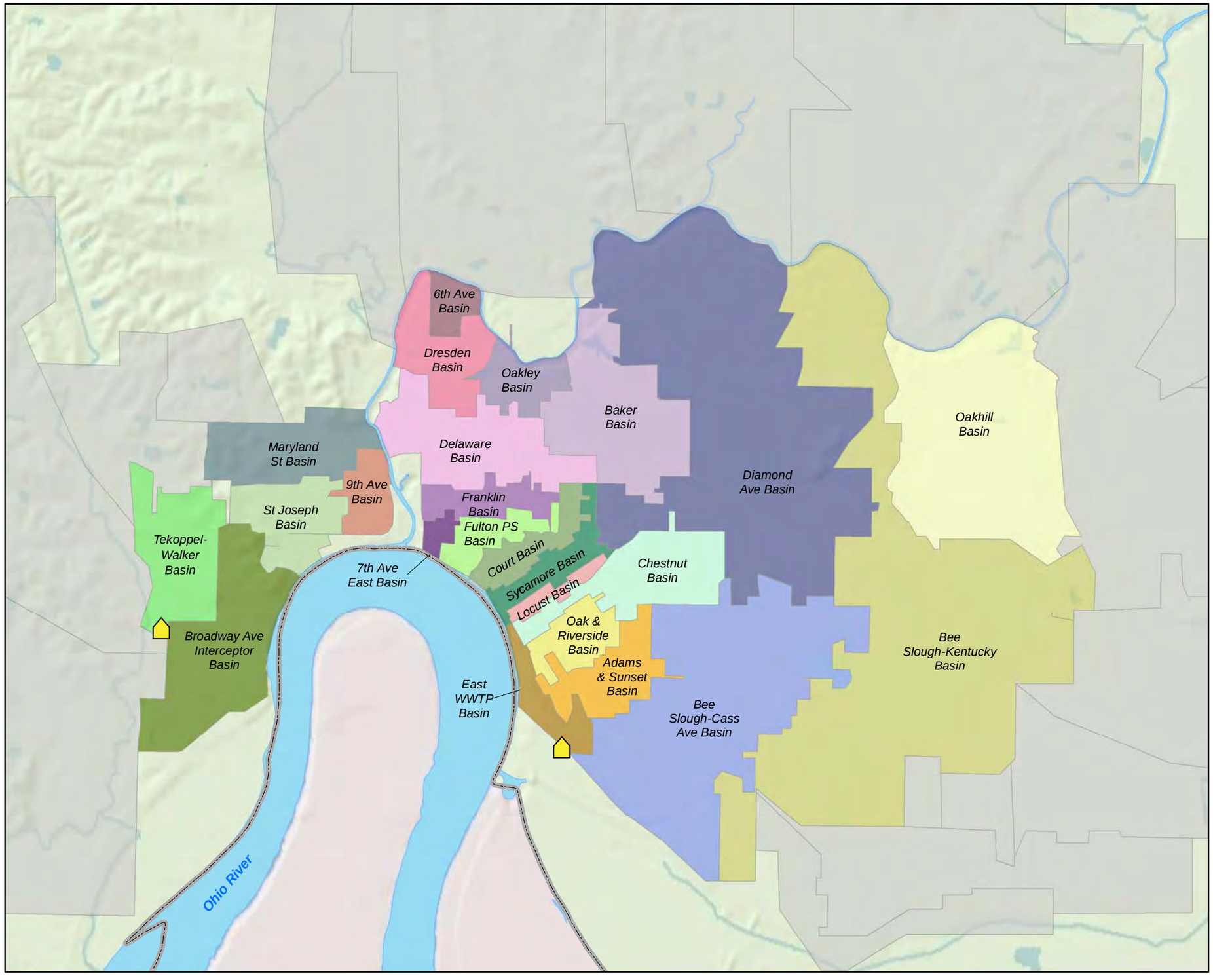
Table 1-1 Summary of CSO Outfalls

CSO	Name	Receiving Water	Service Area
001	Kentucky Avenue	Bee Slough	East
002	Cass Avenue	Bee Slough	East
103	Junction Box Prior to WWTP Headworks	Ohio River	East
004	Adams	Bee Slough	East
008	Chestnut Street	Ohio River	East
010	Dress Plaza	Ohio River	East
011	Oak Hill/Weinbach	Pigeon Creek	East
038	Oak/Riverside	Ohio River	East
006	Fulton Avenue Pumping Station	Ohio River	West
009	7th Avenue West	Ohio River	West
012	Maryland Street-West Bank	Pigeon Creek	West
013	Delaware Street	Pigeon Creek	West
014	Dresden Street	Pigeon Creek	West
015	7th Avenue East	Ohio River	West
016	Franklin Street	Pigeon Creek	West
017	6th Avenue	Pigeon Creek	West
018	Oakley Street	Pigeon Creek	West
020	9th Avenue	Ohio River	West
022	St. Joseph Avenue	Ohio River	West
123	West Plant CSO	Ohio River	West
024	Baker Street	Pigeon Creek	West
025	Diamond Avenue	Pigeon Creek	West

Figure 1-2 shows the entire CSS area. The City and Vanderburgh County are protected from Ohio River and Pigeon Creek flooding by a flood protection system that consists of an earthen-levee and floodwall system, and a system of wet-weather flow control gates and pump stations that pump water "over" the levee during elevated river and creek levels. Figure 1-3 shows the flood protection system in relation to the CSOs.

1.3 History of Overflow Control Plan Development

As previously noted, the Utility agreed in November 2010 to the terms of the Decree with the State of Indiana and EPA resolving a dispute and litigation regarding alleged CWA violations. On June 22, 2011, the Federal District Court for the Southern District of Indiana approved the Decree. The Decree requires the Utility to develop and implement an IOCP to address sewer system overflows and to develop and implement measures to properly operate and maintain



LEGEND

- Wastewater Treatment Plant
- Trunk/Interceptor Sewer
- Sewer Segment

CSS Basins

- 6th Ave Basin
- 7th Ave East Basin
- 9th Ave Basin
- Adams & Sunset Basin
- Baker Basin
- Bee Slough-Cass Ave Basin
- Bee Slough-Kentucky Basin
- Broadway Ave Interceptor Basin
- Chestnut Basin
- Court Basin
- Delaware Basin
- Diamond Ave Basin
- Dresden Basin
- East WWTP Basin
- Franklin Basin
- Fulton PS Basin
- Locust Basin
- Maryland St Basin
- Oak & Riverside Basin
- Oakhill Basin
- Oakley Basin
- St Joseph Basin
- Sycamore Basin
- Tekoppel-Walker Basin
- Other CSS Basin

- Indiana State Boundary
- Hydrography

0 1,500 3,000
Feet

FIGURE 1-2
Combined Sewer Service Areas
Integrated Overflow Control Plan
May 31, 2013

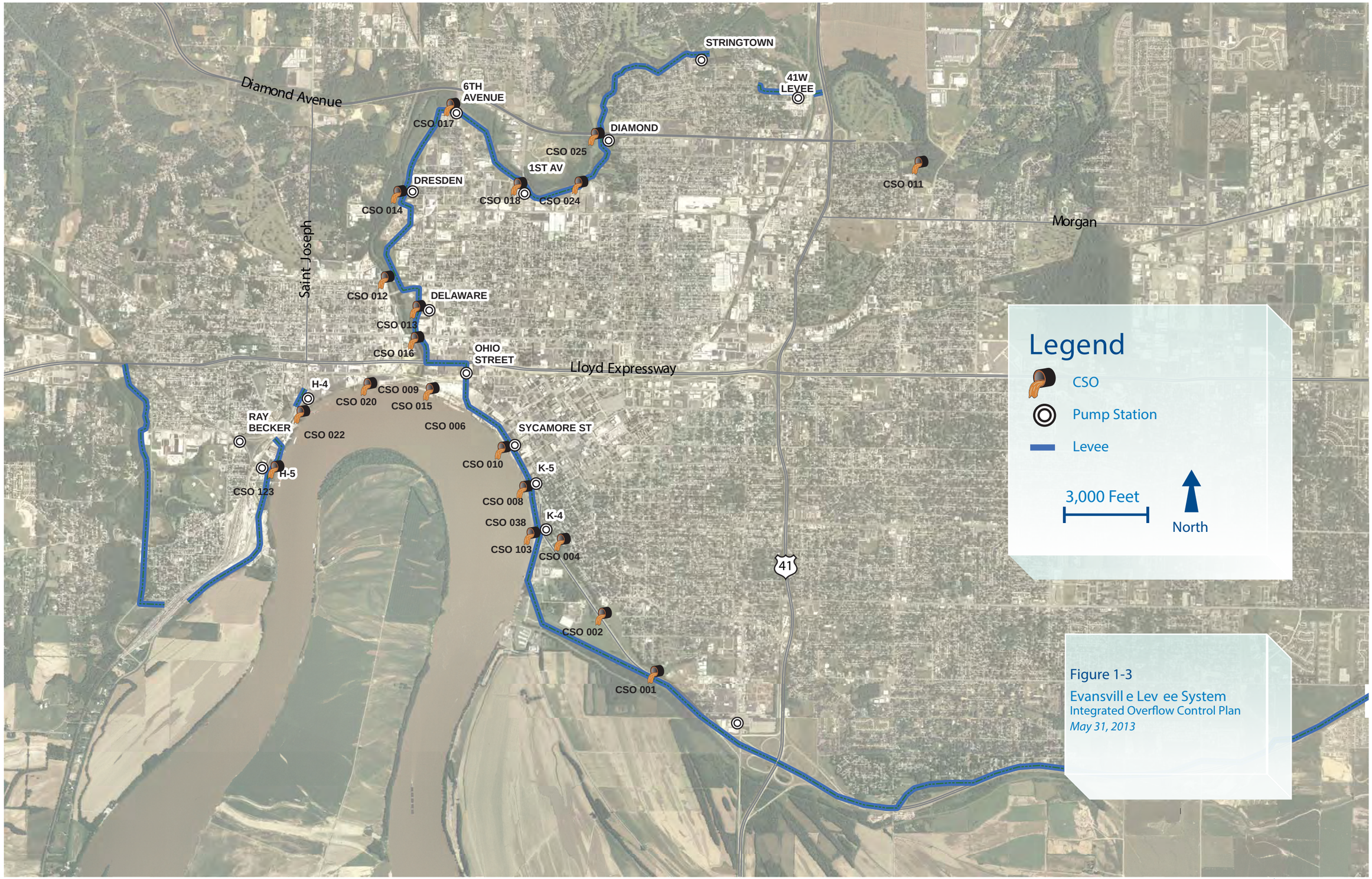


Figure 1-3

Evansville Levee System

Integrated Overflow Control Plan

May 31, 2013

the sewer systems and WWTPs. The IOCP encompasses three separate but related plans: (1) an LTCP to address CSOs into the Ohio River, Bee Slough, and Pigeon Creek, (2) a separate SSRMP which addresses backups and overflows of sanitary sewer pipes, and (3) a facility plan to upgrade, as appropriate, the two WWTPs.

Prior to entering into the Decree, Evansville had engaged in several years of discussions with state and federal regulators about a few key technical issues regarding Evansville's sewer system and the development of a long-term plan to address sewer overflows. As these discussions were occurring, and prior to entering into the Decree, Evansville made significant investments in sewer infrastructure and Utility organization. The City has invested approximately $60 million to remedy chronic surface flooding on the City's southeast side, bringing relief to thousands of residents who had endured decades of flooding and sewer overflows during heavy rain events. The work has included sewer separation projects to replace sewer pipes that carry both stormwater and wastewater with separate storm and wastewater pipes, thereby reducing CSOs into the Ohio River.

In 2009, the Utility completed work on a $24 million biological aerated filter facility at the West WWTP, which nearly doubled the wet-weather treatment capacity at the plant, taking it from 20 mgd to 37 mgd. And as previously noted, in 2010, the Utility brought management of the wastewater system back under Utility control, which has led to dramatically improved, proactive inspection and cleaning of the sewer system.

Last, but certainly not least, the Utility and its team of engineers have been working diligently to develop this plan and to meet the requirements of the Decree.

Development of the IOCP has involved:

- A robust and aggressive inspection and evaluation of the Utility's current sewer system and related assets
- Development of complex computer models to simulate sewer system flow conditions and predict its reaction to wet-weather flows and infrastructure improvements
- An analysis of various scenarios and alternatives for sewer overflow infrastructure control projects

The bulk of this extensive technical effort has occurred since the signing of the Decree in 2010, although efforts were underway before that time. The Utility has submitted approximately 75 reports and documents to EPA regarding the engineering analysis of the sewer system. These deliverables form the backbone of the IOCP and many of the reports are included in Appendix A to form a complete record to make the deliverables part of the final IOCP submittal to EPA.

Other notable accomplishments during this timeframe include the treatment of more wet-weather flow than ever before—up to 24 mgd is currently being treated at the East WWTP and up to 37 mgd at the West WWTP—and Utility operations staff have been preparing to treat as much as possible with the existing facilities. WWTP stress testing has been completed and enhancements are being implemented; analysis has shown that the East WWTP is potentially able to treat up to 28 mgd without significant modifications, and the Utility has been working to treat this amount of flow during wet weather events.

The City's IOCP will build on the work of the past and it represents the largest infrastructure investment in Evansville's history—a renewal of one of Evansville's most important public infrastructure assets.

1.4 Consent Decree Requirements

The Decree specifies requirements that are consistent with the EPA CSO Control Policy. According to those requirements, WWTP and sewer system improvements must be constructed and implemented, as well as other measures necessary to:

- Ensure that CSO discharges to the Ohio River, Pigeon Creek, Bee Slough (and any other water receiving CSO discharges) comply with the technology-based and water quality-based requirements of the CWA, state law and regulations, and the Utility's National Pollutant Discharge Elimination System permits.
- Address CSO-related bypasses from the WWTPs in conformance with requirements of the CSO Policy.
- Propose specific wastewater-related remedial measures for Bee Slough.
- Build upon and integrate results of the Utility's water quality studies, sewer system characterization, and modeling efforts.
- Evaluate a range of alternatives and technologies for eliminating, reducing, or treating CSO discharges from both the East and the West CSSs, and for eliminating avoidable bypass discharges.
- Eliminate, relocate, or treat overflows that discharge to sensitive areas wherever physically possible and economically achievable.
- Consider the cost-effectiveness of a range of potential water quality improvement strategies.
- Evaluate the LTCP's impact on environmental justice populations.
- Evaluate the Utility's financial capability to fund the selected alternative or combination of alternatives.
- Develop a schedule that will be used to implement the recommended IOCP as expeditiously as possible.
- Develop a post-construction monitoring program to assess the effectiveness of the IOCP control measures.

This four-volume IOCP is a major part of the Utility's response to the Decree. The IOCP is a long-term plan to control sewer overflows from the City's sewer system. The IOCP is expected to improve water quality in Pigeon Creek, Bee Slough, and the Ohio River at and downstream from the Evansville outfall areas.

SECTION 2

IOCP Features and Benefits

2.1 The City's Plan Will Improve the Community

2.1.1 The Negotiated Plan Addresses the Public Health Issues in Bee Slough First

Addressing the public health issues (including odor and aesthetic concerns) in Bee Slough is the Utility's highest priority. Accordingly, the Utility has developed a plan that treats the cause of the problem (the CSO discharges) and mitigates the conditions that contribute to the odor and aesthetic issues (the standing polluted CSO water in Bee Slough) using a green technology solution that will be an amenity for the community and a valuable natural resource.

Addressing Bee Slough will require a phased approach that will ultimately lead to the transformation of the slough, replacing it with an aesthetically pleasing wetland. The first phase will reduce the presence of polluted standing water in Bee Slough by constructing drains that will allow the Utility to drain the standing water out of Bee Slough and send it to the nearby East WWTP for treatment. Next, the Utility will construct a new pump station that will be dedicated solely to pumping treated WWTP effluent directly to the Ohio River during high river levels, as opposed to allowing the effluent to back up into Bee Slough. When the effluent backs up, the Utility has to rely on the U.S. Army Corps of Engineers (USACE) levee pump station to remove the water to the Ohio River. The USACE pump station was not designed with that function in mind and is not well suited to the task.

Over the course of the 25-year implementation schedule, the Utility will construct a wetland treatment system that will be designed to capture and treat flows from the largest CSO discharge to Bee Slough. The two other CSO discharges to Bee Slough will be captured and treated by a combination holding/treatment tank located adjacent to Bee Slough. The wetland will encompass approximately 42 acres, and will transform Bee Slough into an amenity to the neighborhood and the public.

2.1.2 The IOCP Contains Green Infrastructure Projects That Will Beautify the City and Potentially Reduce the Cost of Other CSO Controls

Given the high cost of constructing traditional concrete and pipe "gray" infrastructure, the Utility has opted for a two-prong strategy for reducing the volume of stormwater entering the CSS:

1. Increase the efficiency and capacity of the Utility's existing gray infrastructure (the pipes and pumps).

2. Employ green infrastructure methods of stormwater management that divert the stormwater directly to nearby streams or into the ground, or more slowly release it into the sewer system.

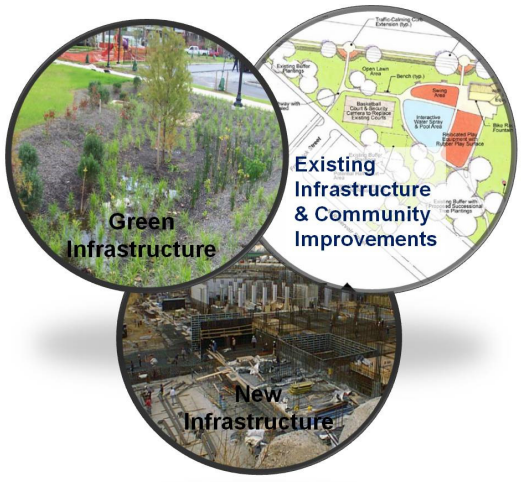
Green infrastructure encompasses a variety of technologies that replicate and restore the natural hydrologic cycle and reduce the volume of stormwater entering the sewer system. This, in turn, reduces the frequency and volume of overflows. Green infrastructure generally includes stormwater management methods that:

- Infiltrate (porous pavements, sidewalks, and gutters; linear infiltration systems)
- Evaporate, transpire, and reduce energy consumption (vegetated roofs, trees, and planter boxes)
- Infiltrate and transpire (rain gardens and bio-retention facilities)
- Capture and reuse rainfall (rain barrels, cisterns, irrigation supply systems, and gray water systems)

Green infrastructure solutions can offer a higher return on investment in addition to multiple benefits beyond the sewer-only benefits from gray infrastructure:

- *Environmental* – recharge groundwater, provide natural stormwater management, reduce energy usage; improve water quality; improve aquatic habitat; reduce thermal impacts and; depending on the nature of the green solution, provide air quality benefits.
- *Social* – beautify the area, increase recreational opportunities, improve health through cleaner air and water, and improve psychological well-being.
- *Economic* – reduce future costs of stormwater management and increase property values.

In addition to Bee Slough, the Utility's recommended plan includes green infrastructure projects in the downtown area, and green approaches will be integrated into the sewer separation projects first identified in the 2007 Stormwater Master Plan (Clark Dietz, Inc. 2007) that have been incorporated into the IOCP. The primary goals of these projects will be to reduce the costs of "end of pipe" gray CSO control infrastructure while simultaneously beautifying neighborhoods and providing community amenities.



2.1.3 The Utility Will Continue to Identify Opportunities to Include Green Infrastructure in Other City Projects

In 2010, the Utility spearheaded the creation of the Green Opportunities Group, which is a team of the City's department heads and management staff who meet on a routine basis to identify opportunities to use green stormwater management practices in other City projects. The goal is to identify and incorporate green infrastructure into street and sidewalk improvement projects, new developments, and any other City initiatives where green infrastructure can play a role. The team has been meeting since January 2011. This inter-departmental collaboration has resulted in several projects having green infrastructure components added. Projects completed or underway include the Civic Center Parking Lot and the addition of porous pavement to sidewalks surrounding the Old Courthouse and in four other blocks downtown. Other potential projects include the addition of rainwater cisterns for downspouts at the Evansville-Vanderburgh School Corporation Administration Building and in City-owned garages, a green roof on the Federal Courthouse, and innovative "zero-discharge" stormwater practices in Bicentennial Park.

2.1.4 The Utility Will Continue to Optimize the Existing Combined Sewer and Flood Protection Infrastructure to Cost-Effectively Reduce CSO Discharge Volumes

The primary goal of this initiative is to utilize existing storage capacity and system flow management infrastructure already in place today before investing in new infrastructure and to make sure the Utility is "right-sizing" the new facilities that will be constructed. The Utility has already started the process of optimizing the major sewer line on the west side, the Pigeon Creek Interceptor, and maximizing its capability to capture and treat more wet-weather flow. In May 2012, the Utility launched a project to collect and analyze flow and precipitation data in the Pigeon Creek Interceptor in conjunction with levee gate and pump station operational data to better understand the in-system conditions in the interceptor during rain events. This project includes the development of a real-time decision support system to facilitate and support operational decisions, with the goal of capturing more wet-weather flow in the system without causing surface flooding or backups into homes or businesses, while simultaneously meeting the operational objectives of the flood protection system. The project also includes a task to identify potential opportunities to store wet-weather flow in the sewer lines tributary to the Pigeon Creek Interceptor, and with the same requirement that no surface flooding or backups occur as a result.

2.1.5 Investing in Clean Water Infrastructure Provides Job Opportunities and Improves Utility Performance

The Utility has developed this recommended plan using significant local resources for engineering analysis and specialized inspection. The majority, if not all, of the construction activities in the plan can be accomplished using local construction companies. In addition, an investment in green infrastructure can provide opportunities for local landscaping companies and other suppliers through the purchase of plant material and other construction materials, as well as the ongoing maintenance and upkeep of landscaped areas and other green features.

Beyond the capital investment that will be required to meet CWA objectives, the Utility's focus on maximizing the use of existing infrastructure to transport and treat more wet-weather flow and on better integrating and optimizing this infrastructure will result in improved Utility performance and increases in the capabilities of Utility staff.

2.2 The Negotiated Plan Addresses the Greatest Risks to Public Health First

2.2.1 Remedying Bee Slough Is the Utility's Highest Priority

As previously stated, remedying the public health risks posed by Bee Slough is the Utility's highest priority. The project will reduce potential direct public exposure to sewage pollution that is present in Bee Slough. Moreover, it will control and treat the largest and most upstream CSO discharge to the Ohio River. Taken collectively, the CSOs that discharge into Bee Slough and into the Ohio River comprise nearly 70 percent of the total volume of untreated combined sewage that discharges to the river on an average annual basis. Dramatically reducing overflows from Bee Slough will lessen the risk that users of the Ohio River at Dress Plaza will be exposed to pollution from CSOs.

2.2.2 Replacing the 7th Avenue Lift Station Increases Reliability and Reduces the Risk of Large Overflows

Another major project included in the plan is the replacement of the 7th Avenue Lift Station. This lift station, located south of the greenway trailhead near the mouth of Pigeon Creek, was constructed in 1955 and is one of the most critical pieces of sewer infrastructure in the Utility's system. The lift station has no onsite backup power system, and it has a single screen, with no redundancy, so it does not meet current standards. This lack of backup equipment poses a high risk for large sewer overflows in the event of a power interruption or problem with the screen. Replacing this lift station with a modern facility that is purpose-built for reliably pumping the large wet-weather flows experienced at this location and that includes adequate backup systems will reduce the risks of sewage spills and improve the Utility's ability to effectively operate and maintain the lift station.

2.3 Investments in the Sewer Systems Reduce Sanitary Sewer System Backups

2.3.1 The Utility Has Invested Approximately $60 Million Since 2007 to Remedy Backups and Flooding on the Southeast Side

One of the Utility's most important initiatives over the last 5 years has been to address and remedy the surface flooding problems in the southeast side for years. These problems were caused by a lack of capacity in the combined sewers that serve those areas to move the water out of the neighborhoods, which caused system backups during large rain events. As a result, the Utility has invested approximately $60 million since 2007 to remedy this flooding and address this serious risk to property and public health. Three projects have been completed, and the fourth will be completed in 2014.

2.3.2 The Utility Investigated the Highest Priority Areas in 2011

Part of the development of the IOCP included the investigation of approximately 20 percent of the separate sanitary sewer system to determine the causes of system backups and overflows, the conditions contributing to unplanned and reactive work by Utility crews, and the extent of the system that was receiving preventive maintenance. These areas were deemed to be the highest priority because of the relative frequency of service line backups, overflows, and reactive maintenance work. As such, the goal was to target for investigation the areas that would benefit the most from infrastructure reinvestment and reduce the burden on the Utility's crews to repeatedly respond to overflows in certain areas or conduct preventive maintenance activities at unsustainable frequencies.

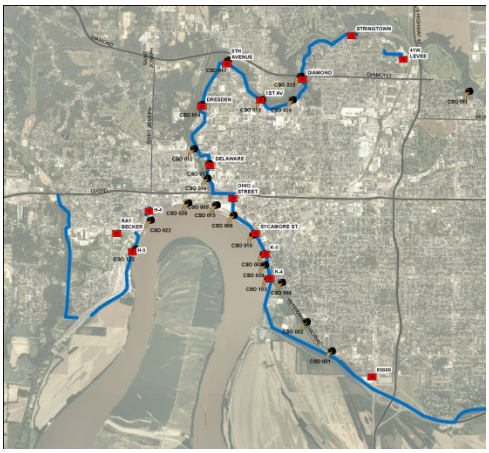
2.3.3 Investments Will Be Made Across the Utility's Entire Service Area

Although the majority of the IOCP's early investments will be made to remedy problems in Bee Slough, the recommended plan will make investments across the entire system. For example, the system-wide flow optimization program will include every CSO in the system, reducing overflows to both Pigeon Creek and the Ohio River. In addition, the projects proposed in the SSRMP are distributed throughout the system.

2.3.4 The Utility Will Monitor and Track Project Benefits

The Utility is committed to continuous improvement and adaptive management to right-size future CSO improvements and to address the most pressing problems first. The Utility has therefore begun to enhance the monitoring of precipitation, in-system flow, and overflows from the system, and it has recently upgraded its work order management system to better track O&M data. These systems will provide continuous feedback in real time and to develop a decision support system for management, operation, and maintenance of the system. Those data will also be used to streamline and facilitate development of the required semi-annual reports submitted to state and federal regulators as required by the Decree, and also to help operate and maintain the system more efficiently.

2.4 IOCP Projects Will More Closely Integrate the Sewer Systems and Flood Protection Infrastructure



The City's flood protection infrastructure along the Ohio River and Pigeon Creek is essential to protect human life and property during periods of high river levels. The proximity of the CSO outfalls and their locations relative to the levee and levee pump stations make the operation of these two important City assets completely interdependent. However, operating the flood protection infrastructure can sometimes conflict with the goals and requirements for overflow control. As a result, the Utility has proactively initiated a dialogue with the Levee Authority and USACE to ensure that the two systems and responsible parties can achieve their respective operational goals in harmony and without interfering with each other's mission. As previously described, the Utility has already started the process of optimizing the Pigeon Creek Interceptor to maximize its capability to capture and treat more wet-weather flow and to better understand and operate the sewer system as it relates to the flood protection system. The plan to remedy problems in Bee Slough will also result in a more reliable and effective flood protection system for the southeast side.

2.5 An IOCP Implementation Approach That Focuses on Adaptive Management and Continuous Improvement Will Result in the Most Cost Effective Achievement of CWA Objectives

2.5.1 Adaptive Management

The overarching goal for the IOCP is to meet CWA objectives as expeditiously as possible and in the most cost-effective and affordable manner. This has driven several specific interrelated planning objectives:

- Maximize the use of existing infrastructure to capture, transport, and treat wet-weather flows.

- Reduce the amount and rate of stormwater runoff into the sewer systems through the use of green infrastructure and other I/I reduction strategies to avoid the conveyance and treatment of large volumes of clean water.
- Appropriately size and construct projects to increase the capture and treatment of overflows system-wide.

Consequently, the Utility has taken an adaptive approach that emphasizes early reductions in public health and environmental risks, with simultaneous adjustments and enhancements to wastewater infrastructure and operations. In the process, the Utility is leveraging past community investments and right-sizing the new overflow control infrastructure. This approach will help minimize the risk of over-sizing the new facilities or investing in underperforming and ineffective approaches. In summary, an adaptive management approach will strengthen the Utility's ability to learn from experience and see how the initial investments are functioning before making decisions on future infrastructure projects, which may also allow for the introduction of new and emerging technologies in future years.

The Utility's plan focuses on continuous improvement to achieve performance objectives at the lowest life cycle cost and to generate lasting value for the community. As previously indicated, the Utility has not waited to begin implementing projects that are in alignment with and beneficial to the recommended plan. For instance, the Utility has invested over $60 million in remedying the southeast side flooding projects to reduce public health risks and to protect property. During the same timeframe, projects were completed to increase the capacity of the WWTPs and green infrastructure projects have been completed and are ongoing. This allowed the Utility to adjust operations to capture and treat more wet-weather flow, resulting in the capture of millions of gallons of untreated sewage that would have otherwise been discharged to area waterways.

In addition to the projects already completed, this recommended plan begins to immediately address the Bee Slough problem of raw sewage being dumped and held in the slough near neighborhoods along Veteran's Memorial Parkway by implementing several small, but effective, projects that will make progress toward the ultimate solution, transforming Bee Slough. The Utility also recently launched the first phase of a program to analyze wet-weather operations, which will lead to adjustments and enhancements to the CSO weirs and thus maximize the use of existing capacity in our pipes to store and convey wet-weather flows for treatment. Once this effort is completed, the Utility will re-evaluate the overall plan to ensure that the community's investment remains cost-effective and appropriately sized for the City.

Communities across the country are using this type of iterative approach to ensure that wet-weather control programs provide the greatest benefits for the large public investments being made in infrastructure. For example, a phased adaptive approach has been used in multiple cities located on the Ohio River, which have similar problems and issues. The Louisville Metropolitan Sewer District (MSD) and Cincinnati MSD are both using a form of plan re-evaluation that assesses and compares costs of green or innovative solutions to conventional gray pipe and concrete approaches on a watershed basis. Other utilities, including Baton Rouge Department of Public Works (DPW), have made major changes in plan approaches based on new information and identification of more cost-effective solutions. Tennessee entities, including Memphis DPW and Chattanooga DPW, have new consent decrees and are evaluating their systems on a similar, phased basis.

The City will utilize the adaptive management approach across the entire IOCP, specifically applying the following steps to achieve the best project and program performance at the lowest life cycle cost:

- Monitor and analyze dry- and wet-weather flow data before and after individual IOCP projects are implemented.
- Refine and recalibrate the hydraulic models on an ongoing basis and after individual IOCP projects are implemented.
- Conduct value engineering and verify infrastructure sizing during advanced facility planning and preliminary design efforts for storage, pumping, and conveyance projects to ensure that the individual projects meet the planned performance objectives and support the IOCP overall performance objectives.

The City has developed the IOCP projects using the most current and best information and data available. The projected costs for individual projects reflect conservative, robust estimates for flow changes or reductions due to green infrastructure, infiltration/inflow removal, and system optimization, and also conservative estimates for the anticipated infrastructure capacities needed to capture, convey, and treat wet-weather flow. Consequently, the City's proposed IOCP reflects the most conservative, outer-limit estimate of overall program cost, with adequate budget to achieve performance objectives while simultaneously supporting the planning objectives stated above.

2.6 The IOCP Will Meet CWA Objectives as Expeditiously as Possible

The Utility's focus in recent years on continuous improvement and addressing the community's most pressing public health and environmental risks has resulted in a plan that continues to progress, balancing the highest benefits early on with the Utility and ratepayers' ability to appropriately fund the improvements. The challenges addressed by the IOCP were created over the last 100 years and the solution will take decades to implement. Taken alone, the task is daunting, and it is made more challenging when considered collectively with the Utility's need to address other aging infrastructure and equipment, generate needed revenue in a sluggish economy, and relentlessly try to do more with the same or fewer resources.

To respond, the Utility has developed this plan to meet CWA objectives as expeditiously as possible and balanced it with the community's ability to afford the improvements. The projects the Utility has completed in recent years are significant, and they represent only a portion of the hard work that has gone into making progress toward this challenging goal. For instance, the City decided, after nearly two decades of contracted, privatized operation of the wastewater system, that the most efficient and cost-effective method to achieve the community's goals for clean water and protection of public health was to bring the operations under complete Utility control. Since that time, the Utility has increased the level of service and reduced costs, allocating those savings to reinvest in clean water infrastructure and to better understand and operate the system.

The IOCP initial phase projects and priorities address the most serious problems causing overflows and public health risks. However, in years with larger rain events or total rainfall greater than the Typical Year, those volume reductions may not be as high. The City has

problems comparable to those of much larger cities, most of which are taking 25 years or more to address the problems in multiple-phased programs, some going back to the 1970s for the initial phases funded with federal support that is no longer available.

A lot of work lies ahead. Although this work must be done to comply with federal and state mandates and will be costly, it will provide the community an opportunity to invest in improving some of the City's most important assets—its sewer system and waterways.

SECTION 3

Plan Development

The IOCP was developed in accordance with the CSO Policy and other detailed Decree requirements. Primary steps included evaluation of the sewer system, the development of overflow control alternatives, and the evaluation of those alternatives to develop the recommended plan. This section summarizes the specific activities conducted to develop the draft IOCP.

3.1 Public and Regulatory Agency Participation

The Utility prepared and submitted a Public and Regulatory Participation Plan to EPA and IDEM on December 30, 2010. The Utility then procured the services of a public involvement and outreach firm to assist with public outreach during IOCP development activities.

In 2011, a more comprehensive outreach plan (including an updated timeline) was developed. This plan included program branding (*Renew Evansville*), key stakeholder identification, a news media strategy, a social media campaign, a speakers bureau, development of collateral materials (such as informative fact sheets), and the *Renew Evansville* Web site (www.RenewEvansville.com).

Under the *Renew Evansville* brand, the public campaign was launched in March 2012. This public launch included the first meeting of the Citizens Advisory Committee (CAC), the development of the website, an editorial board meeting with all major media in the greater Evansville area, and a social media campaign through Twitter (@RenewEvansville).

The CAC has met seven times during plan development to hear details, ask questions and provide input regarding the IOCP. Public outreach occurred in August 2012, after the draft IOCP was released for public comment, and again in May 2013 before the final plan was submitted to state and federal regulators on May 31, 2013. Six public meetings were held in locations throughout Evansville from May 14 through 16 and a televised briefing of the City Council occurred on May 13, 2013. Additionally, during the May 2013 public meetings, robust media coverage of the plan occurred in the City and surrounding areas. During the public meetings, a recurring concern raised by members of the public was the cost of the program and the rate increases necessary to fund the projects along with other needs of the Utility. A detailed description of the public outreach effort and public comments from the meetings can be found attached at Appendix B.

3.2 System Characterization

The IOCP was developed based on existing data and data collected as part of an ongoing system assessment program that was initiated in early 2010. The system characterization consisted of several efforts including:

- Implementing a flow monitoring and data collection program, including water quality sampling
- Field investigation to gather collection system condition data:
  - Manhole inspections
  - QuickView pipeline inspections
  - Smoke testing
  - Closed-circuit television inspection
- Site surveys:
  - Manhole rim elevations throughout the Separate Sanitary Sewer (SSS)
  - Pipe invert elevations at manholes within the SSS
  - CSO diversion structures
  - WWTP structures
- Model development and modeling:
  - SSS hydraulic model development and calibration
  - CSS hydraulic model updates
  - WWTP process models
  - WWTP hydraulic models
  - Water quality model
- Integrating the CSS/SSS models and performing a system-wide capacity assessment
- WWTP stress testing

The system characterization effort was focused on gathering and developing data and tools to evaluate alternatives to meet the Decree goals of reducing CSOs, reducing SSS releases, and improving water quality. Most of this work was performed during 2011. The characterization effort had to overcome many obstacles, including the fact that 2011 was the wettest year in Evansville's history since records were first kept approximately 130 years ago. The Utility cannot overstate the difficulty this record rainfall year, along with other technical and practical challenges unique to Evansville's system, presented to the IOCP development team (summarized in Section 3.3).

3.3 The City's Unique Challenges

The Utility faces two major challenges that increase the complexity and cost of implementing CSO controls: Bee Slough and the levee system that protects the City from Ohio River and Pigeon Creek floods. These unique challenges are summarized in the following sections.

3.3.1 Bee Slough

- Three large CSO outfalls discharge into Bee Slough.
- Ohio River level and Levee Authority pumping operations control flow and water levels in Bee Slough.
- Bee Slough is an eyesore and public health risk; it is specifically referenced in the Decree and is the City's highest priority.
- The Bee Slough outfall is the most upstream of the City's discharges to the Ohio River sensitive area.
- Bee Slough discharges are approximately 70 percent of the total volume the City discharges to the Ohio River.
- Remediation of Bee Slough is likely an "all or nothing solution," which will result in 100 percent CSO control in an average year.

3.3.2 Levee System

- Most CSO discharges are pumped by the levee pump stations during high Ohio River levels.
- The water level in Pigeon Creek is directly influenced by the Ohio River level.
- Periods of high river and creek levels require the Utility to hold water in the system because of flood-control pumping, which reduces available storage volume during extended wet periods.
- High river and creek levels cause significant infiltration into the sewer system during wet periods because of elevated groundwater levels.
- Most CSO outfalls extend through the levee.
- CSO controls will require deep excavations adjacent to the levee in sand/gravel soils. USACE and the Utility view this as high-risk construction; special design and construction techniques will be required to prevent levee instability and settlement.
- Proposed CSO controls will be sized to control CSO flows from a Typical Year but operation and configuration of those facilities will be subject to USACE and Levee Authority operating rules, which need to control flows up to the 100-year storm during a 100-year flood.

3.4 Alternatives Development

3.4.1 Technology Screening

A technology screening report was completed in January 2012 in accordance with Decree requirements to evaluate a range of CSO control technologies applicable system-wide. The technology screening step extended beyond that date to include identification of CSO technologies applicable at each CSO or CSO grouping, an alternatives screening evaluation, and identification of an appropriate list of alternatives for further evaluation. For both the screening analysis and assessment of the alternatives that were evaluated further, the process and hydraulic models were used to determine the costs and benefits of various CSO control technologies.

Types of CSO control technologies considered included:

- Inflow reduction through sewer separation
- Sewer system modification
- Storage
- Physical/chemical/satellite treatment
- Biological treatment

For the West Service Area, alternatives were screened using a genetic algorithm optimization to develop the list of alternatives appropriate for further evaluation. Various levels of controls were then evaluated for the West and East Service Areas in accordance with Decree requirements. As part of the alternatives evaluation, opportunities to implement green infrastructure and I/I reduction technologies were assessed.

Costs and benefits in terms of overflow volume reduction, the number of activations, and water quality benefits for the various alternatives were assessed for each outfall structure in an effort to identify the integrated plan for the separate sanitary and combined sewer systems.

3.4.2 Costing

Planning-level opinions of probable capital costs were developed using a robust cost development process appropriate for preparing a draft long-term plan. The AACE International Recommended Practice No. 18R-97 classifies opinions based on this planning level, which are prepared based on limited information where the preliminary engineering is from 1 to 15 percent complete, as a Class 4 estimate with an expected accuracy within plus 50 percent to minus 30 percent of the estimated cost (AACE International, 2003).

A cost development tool was developed by CH2M HILL, the Utility's lead consultant for plan development, to consistently prepare planning level opinions of probable capital costs for the projects in the plan. This tool allowed the planning team to utilize consistent unit costs across all cost opinions; the unit costs were based on a number of different industry cost estimating sources. Construction costs generated by the cost development tool were calculated using the unit costs in combination with the size or capacity of the facility required, with allowances for features unique to the particular installation. For example, relief sewer costs may be adjusted for expected construction difficulties through bedrock, and storage costs may be adjusted to reflect extraordinary odor control needs. The costing tool allows for combining numerous distinct projects into basin-wide alternatives to facilitate comparison of different levels of control. The tool also estimates the life cycle costs of the projects and alternatives to identify those projects that are expected to result in the lowest total cost to the Utility for planning, design, construction, commissioning, and operation.

Projected costs of the Recommended Plan were updated to reflect January 2012 dollar values and using the *Engineering News-Record* Construction Cost Index of 8301, based on a small cities adjustment using RS Means indexes for Cincinnati and Evansville. Projected costs of the Negotiated Plan were updated to reflect January 2015 dollar values and using the Engineering News-Record Construction Cost Index of 8903. The overall capital cost opinions were developed by including appropriate markups on the probable construction costs to account for planning, design, construction engineering, possible right-of-way acquisitions, and other project contingencies.

3.4.3 Alternative Selection

The Utility's general objectives during plan development included the following:

- Maximize existing sewer infrastructure:
  - Leverage past infrastructure and organizational investments.
- Apply cost-effective green infrastructure and I/I reduction technologies:
  - Avoid unnecessarily transporting and treating water.
  - Provide lasting community benefit and value.
- Appropriately size and construct gray infrastructure solutions:
  - Achieve performance requirements at the lowest possible cost.

Specific planning goals included:

- Remedy Bee Slough pollution, odor, and aesthetic issues.
- Maximize underutilized existing storm infrastructure.
- Use green infrastructure where application of green approaches would be cost-effective and appropriate.
- Optimize Pigeon Creek Interceptor operations.
- Provide necessary redundancy and backup power at 7th Avenue Lift Station.
- Provide for better control of West WWTP influent hydraulics.
- Cost effectively reduce I/I.
- Use right-size CSO controls to increase capture and treatment of CSOs system-wide.

Alternatives were selected based on cost and non-cost factors. The technology screening completed to evaluate CSO control technologies was expanded to consider the technologies for each CSO outfall or group of outfalls. Because of the significant funding challenges unique to the Utility, the non-cost evaluation for each CSO outfall or group of outfalls was limited to a short list of low-cost options to evaluate unique community benefits for the lowest cost options.

Projects that performed the best toward meeting the overall objectives of the Decree and that provided affordable solutions were included in the plan. Some alternatives, including separation of all sewers, were evaluated, but costs grossly exceeded any funding plan feasible for the City. These non-feasible alternatives were not evaluated in more detail.

3.5 Levels of Control

In accordance with the Decree and guidance documents, multiple levels of wet-weather sewer overflow control options were evaluated. For the CSS, the Utility evaluated control options against how well those options would reduce the frequency that CSO outfalls activate in a typical rainfall year, as well as the residual volume of CSO discharges. The CSO Control Policy requires the Utility to evaluate controls that will achieve, among other performance levels, 0 to 12 activations or 75 to 100 percent capture of sewer overflow volumes. The Utility's

alternatives evaluation covered the full range of levels of control required. The alternatives evaluated may not perform at these levels in years with larger rain events or total rainfall greater than the Typical Year.

SECTION 4

Financial Capability

4.1 Background

In June 2011, the Utility entered into the Decree with EPA and State of Indiana, which requires the Utility to develop and implement both a capital plan to control sewer system overflows and measures to properly operate and maintain the sewer systems and WWTPs. This integrated plan is referred to as the IOCP, and consists of the Utility's CSO LTCP and SSRMP and Treatment Plants Facility Plan.

The Utility proposed a Recommended IOCP to EPA and IDEM on May 31, 2013. The Recommended IOCP meets the Decree requirements and would reduce the number of CSO events from approximately 50 activations a year to no more than 12 and will increase the percent of the capture of CSO volume from 35 to 92 percent. EPA and IDEM rejected the Recommended IOPC on June 16, 2014. After lengthy discussions, the City and EPA and IDEM reached agreement on a Negotiated IOCP that will reduce activations to 4 per year and increase the percent of CSO volume Capture to 98 percent. This level of control will protect the water quality of the Ohio River (designated a sensitive area near the City) and Pigeon Creek from CSO discharges. Finally, in the IOCP Evansville continues its commitment to addressing SSOs, through an iterative process that remedies known, high priority SSOs first, and then addresses other, recurring SSOs as they are confirmed through the Utility's Capacity, Management, Operation and Maintenance (CMOM) program.

4.2 Financial Assessment of the May 31, 2013, Recommended Plan

The information set forth in Section 4.2 through 4.5 applies to the May 31, 2013, Recommended Plan.

As described in the LTCP and the SSRMP, the Utility's plan is based on public input, the requirements of the Decree, the objectives of the Utility, cost-effectiveness, the requirements of the CWA, and, in the case of the LTCP, the CSO Policy.

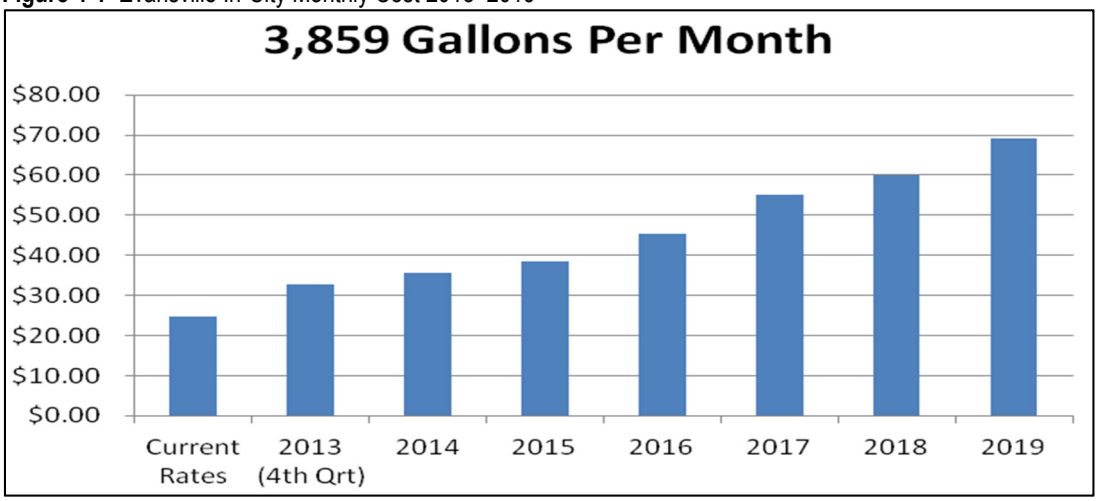
In July 31, 2012, the Utility submitted a draft IOCP. In February 2013, the Utility submitted a Financial Capability Analysis (FCA) based on that draft IOCP that meets the requirements of Paragraph I.8 in Appendix C of the Decree. The Utility believes February 2013 FCA demonstrated that the draft IOCP was not affordable for the Utility's customers even when the higher income of customers who live outside of the City was blended with the lower incomes of the 74 percent of customers who live within the City, masking the extreme impacts on those in-City customers.

The Utility developed an implementation schedule for the Recommended $540 million plan based on the financial projection in Appendix C. This financial projection demonstrates that, if the Decree is modified to allow 28 years for implementation of the IOCP, the Utility will be able to steadily increase rates until the annual cost for the 74 percent of the ratepayers that reside in the City are at or slightly above 2 percent of Median Household Income (MHI) during the period

of time that this revenue stream is needed to issue and then pay the debt service on the revenue bonds that will provide the majority of the capital for IOCP implementation.

Under the schedule developed by the Utility, after an initial rate increase of approximately 25 percent, rates would continue to rise significantly for each of following 6 years until they reach approximately 2 percent of the MHI of the 74 percent of the ratepayers who live in the City. This plan increases rates for the in-city customer with average monthly consumption of 3,859 gallons per month from $24.70 in 2013 to $69.10 in 2019 (see Figure 4-1). This 279 percent increase will place a tremendous burden on customers. Customers living outside the corporate boundaries of the City will see the same increases with rates that are 35 percent higher than those in the City.

Figure 4-1 Evansville In-City Monthly Cost 2013–2019



After 2019, rates would rise only marginally, keeping rates at approximately 2 percent of the MHI of City residents for 14 years (and over 1.9 percent of the MHI for the entire district). Beginning in 2036, the currently outstanding debt will have been retired, and the projections show some possible flexibility for rates, but that is still questionable given the need to ensure the integrity of the system over time and the likelihood the Utility may face increased regulatory standards.

Both the Decree and EPA's 1997 guidance titled: "Combined Sewer Overflows – Guidance for Financial Capability Assessment and Schedule Development," EPA 832-B-97-004 (hereinafter Financial Capability Guidance), allow the Utility to provide additional information to provide a more accurate and complete picture of its ratepayer's ability to fund CSO and SSO improvements.

It must be emphasized that the financial indicators found in this guidance might not present the most complete picture of a permittee's financial capability to fund the CSO controls. However, the financial indicators do provide a common basis for financial burden discussions between the permittee and EPA and state NPDES authorities. Since flexibility is an important aspect of the CSO Policy, permittees are encouraged to submit any additional documentation that would create a more accurate and complete picture of their financial capability.[1]

[1] Financial Capability Guidance, at 7.

The additional information relied upon by the Utility that creates a more accurate and complete picture of the financial capability of Utility customers includes:

- The variation in household income between customers living inside and outside of the City of the City,
- The large number of low income residents within the City and the impact of IOCP implementation on those customers,
- The likely disparity between growth in MHI and the inflation rate as a result of the expected doubling of retirees in the City between 2000 and 2030 and the aging population of the area served by the Utility,
- Constraints on the ability to incur low interest debt and the existing debt load,
- The rate increases already borne by Utility customers and resulting reduction in use, and
- A comparison in costs that will be borne by Utility customers and the customers of similarly situated Indiana cities.

The financial projection in Appendix C is based on such additional information.

4.3 Financial Information Unique to Evansville

Undertaking and financing the largest and most complicated infrastructure project in the history of Evansville requires the consideration of a multiple of factors including the following:

1. Difference In MHI Among Utility Customers.

Evansville is an example of a community where the impact of the cost of Clean Water Act infrastructure improvements on ratepayers cannot be accurately portrayed as a percent of the MHI of all ratepayers served by the Utility. This is because the 74 percent of Utility customers who live in the City have a significantly lower MHI than the 26 percent of the customers who live outside of the City.

The Utility owns, operates, and maintains wastewater facilities that serve approximately 67,700 households, of which approximately 50,300 are in the City and approximately 17,400 reside outside of the City in Vanderburgh County.

The households in Vanderburgh County outside of the City have an estimated MHI of $60,500 (in 2011). In contrast, the MHI of households within the City was $35,900 in 2011. A blended district MHI of $40,800 (in 2011) masks the lower City incomes and is 12 percent higher than the City's 2011 MHI even though 74 percent of the Utility customers reside in the City.

To provide a more accurate and complete picture of the affordability of the IOCP for Utility customers, the projection report in Appendix C shows the cost per household as a percent of MHI for customers living within the City, customers living outside the City, and an average for all of the customers.

Because the vast majority of the Utility ratepayers live in the City and have a lower MHI, the Utility plans to implement the IOCP in a way that that will keep the cost per household of those ratepayers at or only slightly above 2 percent of their MHI. This focus on the impacts on the large majority of Utility customers presents a more accurate and complete picture of the capability of Utility customers to pay for the IOCP.

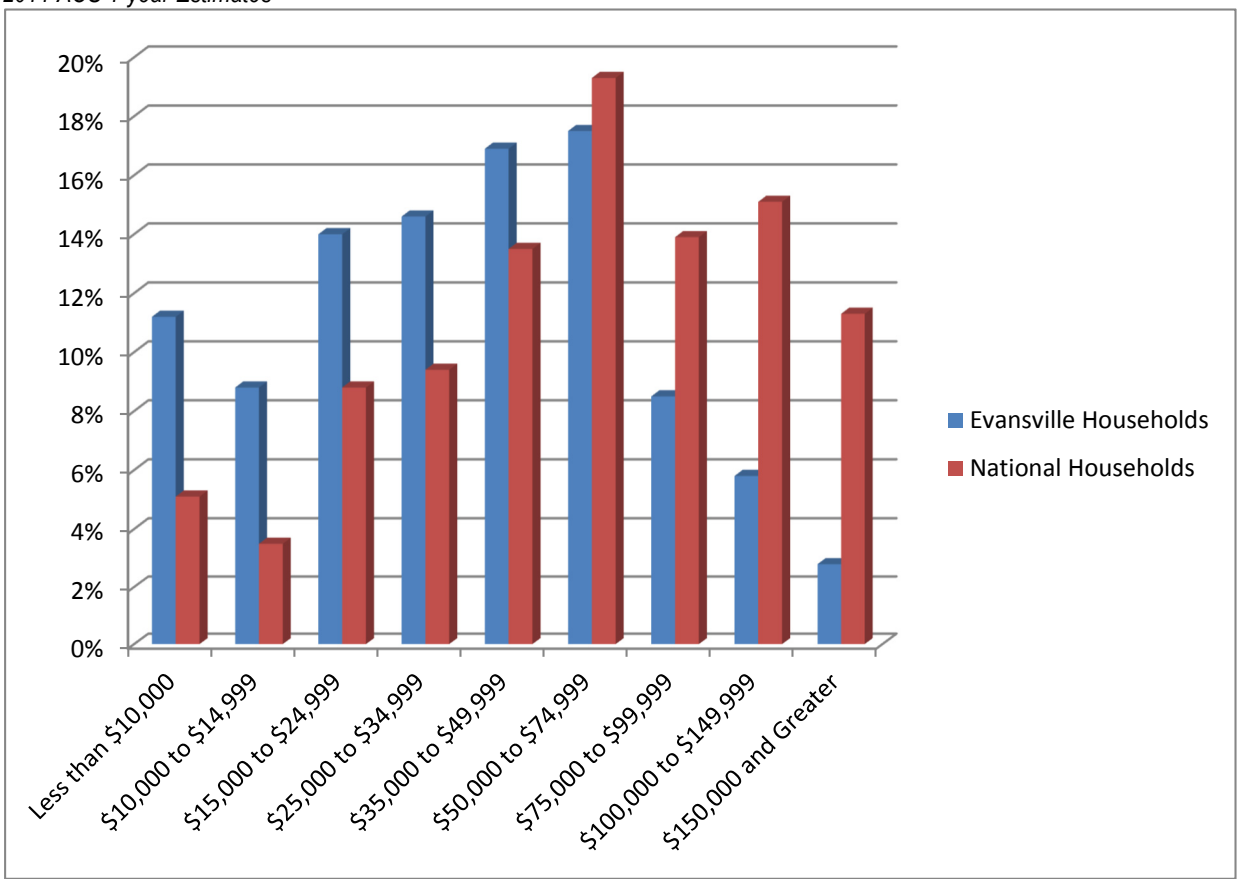
2. Impact of IOCP implementation on low income customers.

The income demographics within the City also must be considered to present a more accurate and complete picture of financial capability.

The City is at the lower end of the national spectrum in MHI and at the high end relative to poverty among its residents, and this trend has continued as shown with the updated income demographics in Section 4.6. With an MHI of only 35,900 in 2011, the City's MHI was only 71 percent of the 2011 national MHI. Thirty-four percent of the households in the City earned less than $25,000 per year in 2011.[2] In 2011, 19.2 percent of the population was living below the poverty level, and 14.5 percent of the households in the City were receiving Food Stamps and Supplemental Nutrition Assistance Program benefits. When compared to the 2011 national average (15.3 percent below the poverty level and 13 percent receiving Food Stamps and Supplemental Nutrition Assistance Program benefits), it becomes apparent that a high percentage of residents live below the poverty line and are already highly burdened by the cost of wastewater services.[3]

As demonstrated in Figure 4-2, 65.5 percent of the City household incomes fall below the medium national income of $50,046[4].

FIGURE 4-2 Comparison of the City and National Household MHI
2011 ACS 1-year Estimates



[2] Source: U.S. Census Bureau 2011 American Community Survey.
[3] U.S. Census Bureau 2011 American Community Survey 1-Year estimates.
[4] U.S. Census Bureau 2011 American Community Survey 1-Year Estimates.

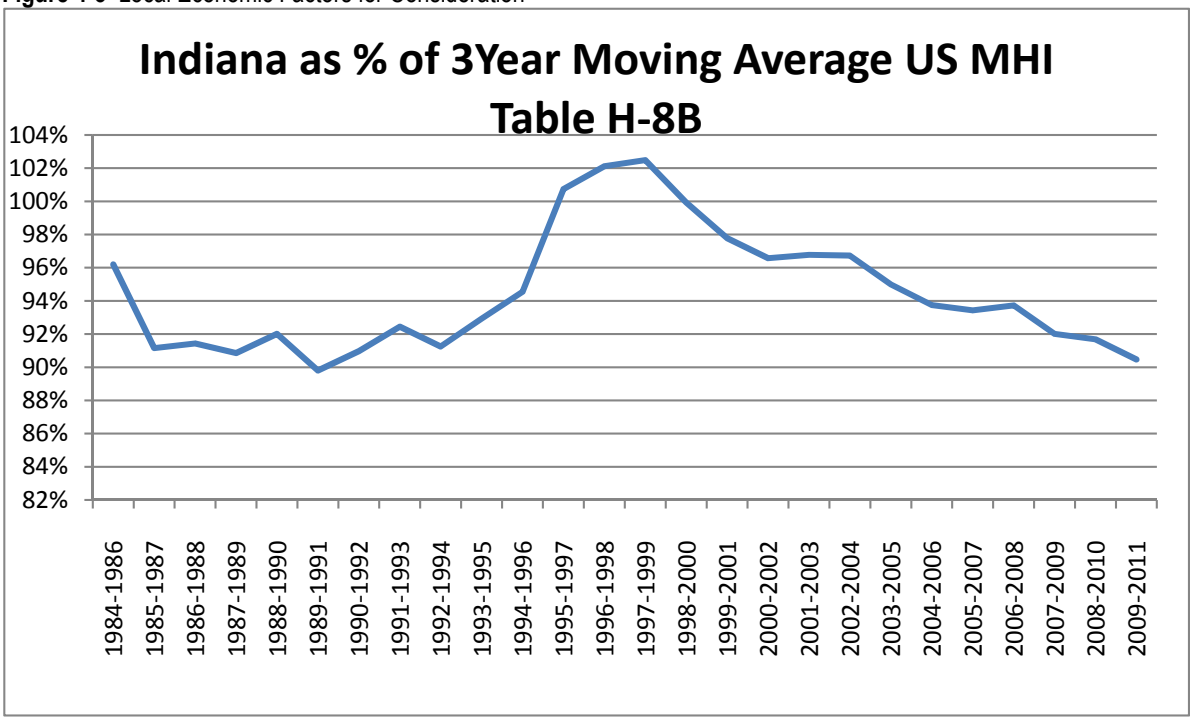
Demographic data from several sources shows the City and its residents near the bottom of every economic measure. Some of the measures are shown in Table 4-1. Each economic factor was considered in establishing the affordability of the IOCP and the implementation schedule.

TABLE 4-1 Local Economic Factors for Consideration

Indicator	Evansville	National Average	Variance
Poverty Level	19.2%	15.9%	121%
Household Income (less than $25,000)	22.3%	17.4%	128%
Receives Public Assistance	14.5%	13%	112%
2010 MHI	$35,939	$50,502	(141%)

As depicted on Figure 4-3, Indiana as a state has fared very poorly relative to the national MHI.

Figure 4-3 Local Economic Factors for Consideration



The 20 percent[5] of the City's households earning less than $15,000 per year are already paying 2 percent of their household income for sewer service. Increasing these rates over the next several years will be extremely difficult on these citizens.

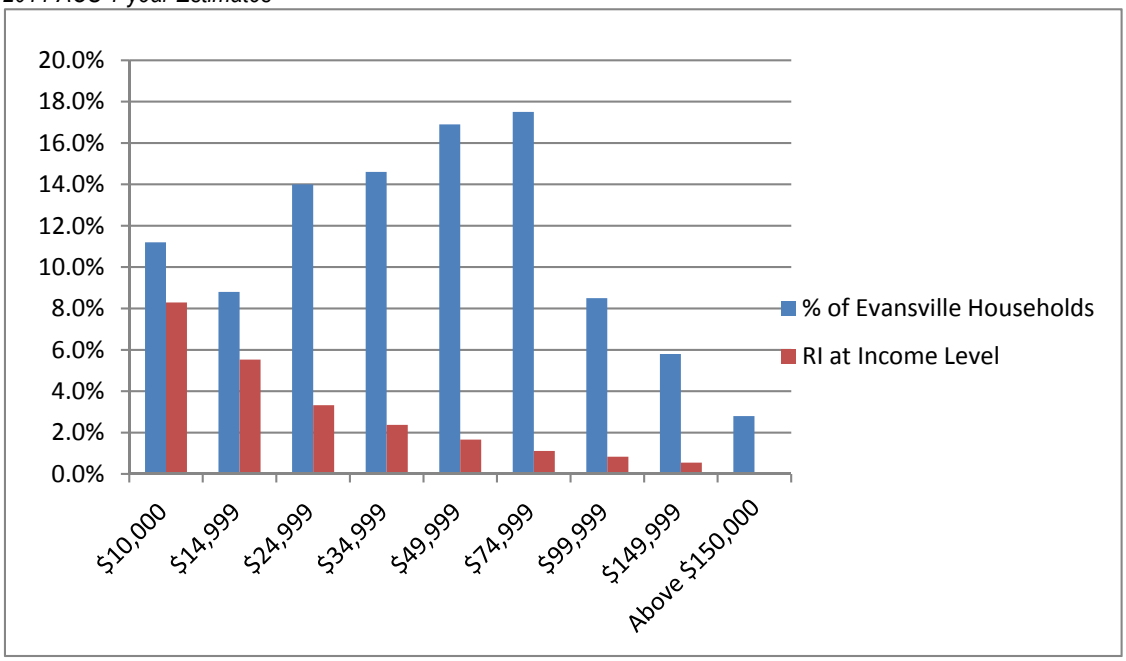
As further demonstrated in Figure 4-4, 11.2 percent of the Utility's City customers have a MHI below $10,000; 8.8 percent have a MHI above $10,000 but below $15,000, and 14 percent have a MHI between $15,000 and $25,000. For these customers, who total 34 percent[6] of the

[5] U.S. Census Bureau 2011 American Community Survey 1-Year Estimates.

[6] Accumulated from the U.S. Census Bureau 2010 American Community Survey 1-Year estimates.

Utility's customers, the impact of IOCP implementation will be extremely burdensome. When monthly bills for City residents on average are approximately 2 percent of MHI, these customers will be paying 3.1 percent of MHI or more.

FIGURE 4-4 RI for In-City Customers in 2019
2011 ACS 1-year Estimates



The Utility is committed to meeting its environmental responsibilities, but to lessen the burden on its customers the Utility plans to implement the IOCP over 28 years.

3. Inflation and Growth in MHI

To provide a more accurate and complete picture of the affordability of the IOCP, inflation and the expected growth in MHI also must be considered.

The City has seen inflation average 2.34 percent from 1990–2010 years while the growth in MHI has averaged 0.6 percent per year. While the City hopes these divergent economic trends do not continue, it would be negligent to ignore these past trends in a projection.

Consequently, in the projection report in Appendix C the City has assumed inflation and growth in MHI will not move in tandem over the 28-year projection period. Inflation has been assumed to be 4.8 percent for 2014 and 2015 for operating and maintenance expenses. This is based on recent experience and planned and budgeted changes in operations. After 2015 operating and maintenance expenses are assumed to grow at 2.34 percent per year, which is the average rate of inflation for 1990 – 2010.

The tremendous size of the IOCP and the larger infrastructure needs of cities throughout the United States will likely result in construction inflation generally exceeding the average inflation rate. Based on the consulting engineer's recommendation, we have built a 3 percent inflation factor into the construction costs.

For 2014 and 2015, MHI is projected to grow at 3 and 4 percent, respectively. This growth is based on the projected growth in personal income for the state of Indiana, which is also

supported by the improving unemployment numbers over the past two years. For projection years 2016 through 2040, MHI is projected to grow at a 1.6 percent rate based on an analysis done by Mohammed Khayum, Ph. D., professor of economics and Dean of Business, College of Business, University of Southern Indiana.

This projected growth in the MHI is possibly optimistic. The growth in MHI in the City area in the recent years has been negatively affected by the globalization of the economy which has resulted in the loss of higher paying factory jobs and changing demographics. Projections for the City show that the number of people 65 and older (retirees) will double between 2000 and 2030. The number of retirees in the City is expected to be 16 percent of the population by 2030. These factors are likely to continue to suppress the growth in MHI.

To provide a more accurate and complete picture of financial capability, the projection report in Appendix C includes the foregoing estimates of both inflation and growth in MHI.

4. Constraints on the Utility's Debt

To provide a more accurate and complete picture of the financial capability of the City's customers, the limits on the Utility's ability to use low interest rate bonds must be considered.

The City has a constitutional debt ceiling of 2 percent of assessed value of the district for property tax backed debt. However, by state statute, this limitation is limited to 0.67 percent of assessed value. Additional constraints recently added to the Indiana Constitution also limit total tax assessments across all taxing districts to 1, 2, or 3 percent of assessed value for residential properties, residential rental and commercial properties. These so-called "circuit breakers" have effectively nullified the City's ability to take advantage of low interest rate property tax bonds, as large circuit breaker credits already exist. Due to these factors, the Utility will issue bonds backed by a revenue pledge. These bonds typically carry a higher rate of interest. As debt and sewer service rates rise for the Utility, it is possible the Utility's current rating of AA- will go down, which will again have a negative effect on borrowing costs and rates.

Revenue bonds also require the Utility to set rates to provide coverage for the debt in order to market the bonds. The Utility's minimum coverage requirement recommended for sewer debt is 135 percent. Coverage requirements for the IOCP of $540 million will result in projected annual debt service of $44[7] million. Coverage for this debt would likely exceed $15.7 million per year in charges to the Utility customers. This additional coverage represents 49 percent of total projected 2013 operating revenues.

5. Impact of Rate Increases on Consumption.

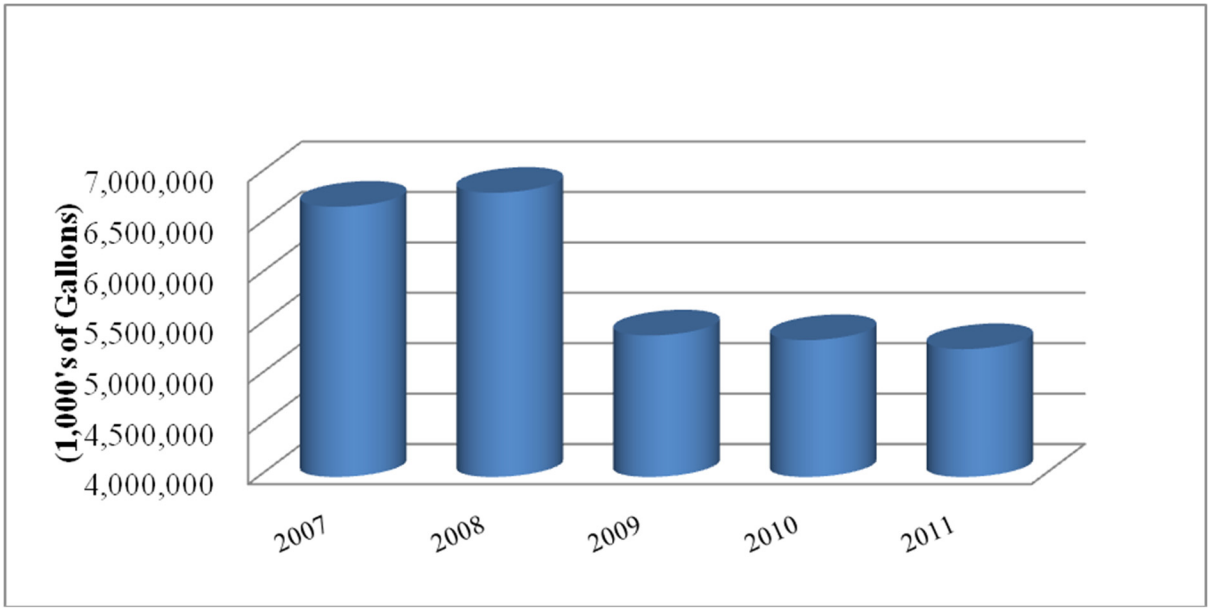
Beginning in 2007, the City implemented a three-phase water rate increase of approximately 43 percent. Sewer rates were increased in 2007, 2008, 2009, 2011, and 2012 (a combined increase of 73 percent) to pay for wet weather control projects, septic-tank eliminations and capacity improvements.

Significantly, for the period 2007 to 2011, sewer rates were increased across the board by 56 percent. However, the Utility saw only a 30 percent increase in sewage revenues due to consequences such as declining water use. The water and sewer rate increases since 2007 have

[7] See page 10 of Appendix C.

had a profound impact on Utility operations as the City has experienced a 21 percent decline in billed flow between 2007 and 2011, as illustrated in Figure 4-5.

FIGURE 4-5 Comparison of Billed Flow
2007 to 2011



The further loss of residential or industrial customers or billed flow volumes will cause a dramatic increase in the future cost per household (CPH).

Accordingly, we have incorporated these and other economic and demographic trends and realities, into our projections and our basis for requesting a 28-year implementation period.

6. A Comparison to Costs Borne By Other Indiana Cities.

The unique characteristics of large CSO volumes, Bee Slough, the Ohio River flood levees impact on sewer overflow controls and Ohio River levels itself present the City with larger and more expensive challenges than other similarly sized communities. While the City believes a program that corresponds to a projected CPH in the City of 2 percent of MHI is extremely burdensome, the City does not see any alternative to this approach in order for the City to implement what it believes is credible plan over the next 28 years. Going beyond a projected 2 percent of in-city MHI is both unprecedented for a utility of the City's size and unacceptable to the City. It is clear that in order for the Utility to implement meaningful sewer system improvements without placing an undue burden on customers 'it will require more than 20 years.

The $540 million plan that enables the Utility to meet the requirements of the CSO Control policy with respect to the number of overflows and percentage capture will require the Utility's customers to expend $4,598 per capita, which is 50 percent higher than the average of other comparable Indiana cities. Table 4-2 compares statistics of other large Indiana cities:

TABLE 4-2 Statistics of Other Large Indiana Cities

	MHI[a]	Population	IOCP Cost in Millions	IOCP Cost Per Capita
Evansville (EPA methodology)	$35,469	117,429	$540	$4,598
Fort Wayne	$43,847	253,691	$239	$944
Hammond	$38,539	80,830	$216	$2,672
Mishawaka	$37,526	48,252	$140	$2,901
Muncie	$29,881	70,085	$159	$2,266
South Bend	$34,761	101,168	$509	$5,031
Average				$3,069

[a] MHI and population data are based on 2011 American Community Survey.

To that end, the City has developed implementation schedule that extends to 2040. While the Decree provides for an extension request not to exceed five years, the City's economic circumstances, the cost per capita and engineering challenges associated with controlling a majority of the City's CSOs, warrant a modification of the Decree to allow completion of the IOCP by May 31, 2040.

4.4 Capital Cost Estimating and Financing

The Recommended IOCP will include some of the largest capital projects ever completed by the Utility. An IOCP of $540 million will almost double the total assets reported in the December 31, 2010, Examination Report of the Indiana State Board of Accounts. The debt service in 2036 (excluding coverage requirements) on the $540 million IOCP coupled with planned and necessary treatment plant improvements will be 139 percent of existing Sewage operating revenues for the twelve months ended September 30, 2012. The 2036 debt service will be 3.76 times larger than the existing debt service of the utility (see Appendix C). Debt service in 2036 is projected to be 40.6 percent of the projected revenues compared to the 35.8 percent of revenues projected for 2013. The IOCP represents a monumental investment by the City.

Thus, the capital investment and the borrowing of funds must be carefully evaluated and periodically adjusted to reflect market conditions. A modest change in construction costs, interest rates, and/or the bond markets would significantly affect the financing costs associated with the IOCP. The unpredictable factors could result in long-term cost variations on the order of millions of dollars. This volatility and the sensitivity of the Utility's sewer rates cannot be accounted for or even estimated properly within the limited framework provided within the Guidance.

Also, it bears repeating that the IOCP options are based upon planning level costs (plus 50 percent to minus 30 percent). This reality mandates a conservative approach to establishing the right community and household burdens.

4.5 Major Differences Between Financial Projection and February 2013 FCA

Section 3 highlights the major differences between the Utility's 28 year projection (Appendix C) and the February of 2013 FCA. The 28-year projection report provides a more realistic look at what could happen given the City's dynamic situation.

4.5.1 Inflation and Growth in MHI

By virtue of being a static analysis of the cost of an IOCP, the FCA Guidance does not consider inflation or growth in MHI. These two factors will have an enormous impact on the overall affordability of the project. The City has seen inflation average 2.34 percent from 1990–2010 years while the growth in MHI has averaged .6 percent per year. While the City hopes these divergent economic trends do not continue, it would be negligent to ignore these past trends in a projection.

Consequently, the City's has assumed inflation and growth in MHI will not move in tandem over the 28-year projection period. Inflation has been assumed to be 4.8 percent for 2014 and 2015 for operating and maintenance expenses. This is based on recent experience and planned and budgeted changes in operations. After 2015 operating and maintenance expenses are assume to grow at 2.34 percent per year, which is the average rate of inflation for 1990 - 2010.

The tremendous size of the IOCP and the larger infrastructure needs of cities throughout the United States will likely result in construction inflation generally exceeding the average inflation rate. Based on the consulting engineer's recommendation, we have built a 3 percent inflation factor into the construction costs.

For 2014 and 2015 MHI is projected to grow at 3 and 4 percent, respectively. This growth is based on the projected growth in personal income for the state of Indiana, which is also supported by the improving unemployment numbers over the past two years. For projection years 2016 through 2040, MHI is projected to grow at a 1.6 percent rate based on an analysis done by Mohammed Khayum, Ph. D., professor of economics and Dean of Business, College of Business, University of Southern Indiana.

The growth in MHI in the City area in the recent years has been negatively affected by the globalization of the economy which has resulted in the loss of higher paying factory jobs and changing demographics. Projections for the City show that the number of people 65 and older (retirees) will double between 2000 and 2030. The number of retirees in the City is expected to be 16 percent of the population by 2030. These factors are likely to continue to suppress the growth in MHI.

4.5.2 Non-IOCP Capital Plan and Repair and Replacements[8]

The Utility conservatively estimates that a minimum of $5 million in 2013 dollars is required annually in Non-IOCP capital funds to effectively renew and replace the Utility's assets. This funding level assumes that 1.7 percent of the current existing depreciable assets are replaced each year over a 59-year period. This is less than the industry standard of 2.5 percent (which also is the rate of depreciation that the Indiana Utility Regulatory Commission requires utilities to use). The starting point for the Non-IOCP capital funding needs is a $114 million Non-IOCP

[8] See Appendix C.

capital plan that was submitted to the Agencies and is based on a 20-year planning horizon with specific projects set forth through 2019. To account for $5 million in annual funding, the projection report in Appendix C allocates funds as "Renewals and Replacements" beginning in 2019 to ensure sufficient funds for system renewals and replacements. If the annual funding level for those known projects do not reach $5 million a year, the difference between the known project funding level and $5 million was placed in Renewals and Replacements in the projection report. If the funding level for known projects exceeded or equaled $5 million, Renewals and Replacements were set at zero. Compared to the February 2013 FCA, in 2013 dollars, this increased the combined cost of Non-IOCP Capital and Repairs and Replacements from $114 million over 20 years to $192 million over 28 years (it would be $152 million over 20 years). So, compared to the February 2013 FCA using the 20-year horizon, this assumption increases costs by $38 million. Current estimates of the Non-IOCP Capital and Renewal and Replacements total $125 million over 20 years and $150 million over 25 years.

4.5.3 Debt Service

For purposes of the FCA, the Utility assumed the entire IOCP was financed with one 20-year bond issue with an average interest rate of 4.5 percent. For purposes of the projection report, the Utility has scheduled multiple bond issues based on the onset of major discernable projects. Different interest rates were assumed based on the onset of the project. For the most part, bonds issues were assumed to have 20-year maturities. The 2013 through 2018 and the 2031 through 2036 bond issues were all assumed to be 20-year issues unless interest was capitalized, and then it was assumed to be for 22 years. Debt service on the bonds issued in 2020, 2024 and 2028 were reflected in the projection as if they were 30 year amortizations in this projection to minimize cash flow requirements during this period. It is assumed that the actual bonds would be structured with escalating debt service beginning in 2037 when existing coverage becomes available. The projections also consider the investment of coverage requirements. Over the 28-year projection, $240 million (inflation adjusted) of IOCP will be constructed with these internally generated funds.

Our financial consultants have advised us that there is a great potential that the low interest rates we have seen over the past twenty years will not be available over the coming twenty years. The financial consultants believe the 5.5 percent rate used in February 2012 is a more appropriate estimate especially considering the size of this endeavor. Using an average interest rate also does not factor in large fluctuations in interest rates that have occurred over the past 20 years. While the average AA- average interest rate was 4.65 percent over the past twenty years, the highest interest rate was 6.55 percent and the lowest rate was 2.75 percent. Depending on the timing of the bond issues, the interest rates could fluctuate significantly. Further, as previously noted, the Utility may not retain its AA- rate given a number of challenges it faces.

4.5.4 Future LTCP Operation and Maintenance Projections

Finally, the O&M costs associated with the estimated IOCP's were provided by the City's consulting engineer. The costs which total $50.3 million in 2013 dollars have been updated based on the final plan.

4.6 Financial Capability Assessment based on 28-Year Projection

In Section 4, the Utility summarizes its sources of data, financial projections and discusses the impact on customers. In Section 5, additional local factors and other considerations are presented that must also be incorporated into any true assessment of affordability.

4.6.1 Sources of Data and Supporting Information

Various sources of information have been relied upon to complete the projection. To the extent possible and/or practical, the most current sources of data were used. In other instances when current data was unavailable, historical data was used and brought forward to present day values. The various data sources have included the following:

- The Federal Government Bureau of Labor Statistics
- The U.S. Census Bureau
- The American Communities Survey
- The Utility's 2013 adopted budget
- The Utility's Non-IOCP 2012 Capital Improvement Plan
- The City and the Utility's Official Statements from bond offerings
- The City's 2010 Examination Report of the Indiana State Board of Accounts
- The City's 2012 operating reports and interim financial reports
- The Utility's Consulting Engineer's Analysis of FCA O&M Costs
- Discussions with industry experts

Because the Utility has wholesale contracts with two utilities outside the City, the Utility included the wholesale communities as part of the analysis. The Utility had individual discussions with both communities to discuss the projections and gather information. The data gathered included current operating expenses, capital budgets, and demographic data. The vast majorities of the customer base for both utilities are households, and as such have been reflected in our analysis as households.

4.6.2 Residential Indicator

The Residential Indicator (RI) is the first of two phases, as prescribed in the Guidance for evaluating the affordability of the Utility's LTCP. The first phase attempts to quantify the financial burden on residential customers, and to determine their ability to pay for the LTCP. The first step of the RI is to identify current and proposed expenses, and we have also used this methodology in the 28-year projection. The factors considered in this projection include:

- Current O&M expenses
- Estimated expenses from the CMOM program
- Current outstanding debt and associated annual payments
- Proposed capital investments and projected annual debt service requirements of the IOCP
- O&M resulting from the IOCP

The second step of the RI is determining the percentage of costs that should be allocated to the residential customer class. For purposes of the 28-year projection, we have assumed that all rate increases would be across-the-board. Because of the City maintains separate rates for inside and outside of the City customers, we have developed three RI factors as follows:

1. The District RI based on perceived average rates and the MHI as calculated in the February 2013 FCA;
2. Inside-the-city RI based on the 2011 American Community Survey 1-Year Estimate for the City; and
3. Outside-the-city RI calculated from the 2011 American Community Survey 1-Year data.

For purposes of estimating the RI in Appendix C, the Utility assumed:

1. Across-the-board rate increases
2. The District MHI calculated consistent with the methodology documented in the February 22, 2013 FCA
3. Assumed average household use of 3,859 gallons per month consistent with February 22, 2013 FCA.

4.6.3 Current Operations and Maintenance Expenses

Cash operating expenses of $18.9 million were used in the 28-year projection based on a test year ended September 30, 2012 adjusted for fixed, known and measurable increases. Inflation has been assumed to be 4.8 percent for 2014 and 2015 for operating and maintenance expenses. This is based on recent experience and planned changes in operations. After 2015 operating and maintenance expenses are assume to grow at 2.34 percent per year, which is the average rate of inflation for 1990 - 2010.

4.6.4 Cost Per Household

Based on the 28-year projection for the Recommended $540 million IOCP, the CPH in the City increases to 2 percent of MHI by 2019, and then stays at that approximate level through 2035. The average rates for the Utility's district are approximately 1.95 percent of the averaged MHI during this same time frame, and the outside of the City rates average approximately 1.61 percent of MHI.

After rising by an average of 15 percent between 2013 and 2019 rates continue to increase by an average of 2 percent through 2036 to maintain debt service coverage ratios and to fund debt and operations. Annual projected CPH for consumption of 3,859 gallons per month are as follows at various intervals:

	2013	2015	2019	2036
Inside City	$296	$461	$829	$1,078
Outside City	$400	$622	$1,120	$1,455

Appendix C includes an accounting report showing the impact IOCP funding and other Utility costs have on households, based on the 2013 rate structure.

4.7 Financial Analysis of the Final Negotiated Plan

Under the implementation schedule developed by the Utility for the $729 million Negotiated Plan, after an initial rate increase of approximately 25 percent in year 2013, rates would continue to rise significantly for each of following 8 years until they reach approximately

2 percent of the MHI of the 74 percent of the ratepayers who live in the City. This plan increases rates for the in-city customer with average monthly consumption of 3,859 gallons per month from $26.30 in 2013 to $60.55 in 2019 This 230 percent increase will place a tremendous burden on customers. Customers living outside the corporate boundaries of the City will see the same increases with rates that are 35 percent higher than those in the City.

After 2021, rates would rise only marginally, keeping rates at approximately 2.7 percent of the MHI of City residents (and over 2.35 percent of the MHI for the entire district). Beginning in 2036, the currently outstanding debt will have been retired, and the projections show some possible flexibility for rates, but that is still questionable given the need to ensure the integrity of the system over time and the likelihood the Utility may face increased regulatory standards.

As previously detailed in section 4.2 the City is at the lower end of the national spectrum in MHI and at the high end relative to poverty among its residents and this trend has continued. With an MHI of only $32,414 in 2013 down from $35,900 in 2011, the City's MHI was only 62 percent of the 2013 national MHI down significantly from 71 percent of the 2011 national MHI. 36 percent of the households in the City earned less than $25,000 per year in 2013.[9] In 2013, 25 percent of the population was living below the poverty level compared with 19% in 2011, and 20.4 percent of the households in the City were receiving Food Stamps and Supplemental Nutrition Assistance Program benefits compared with 14.5 percent in 2011. When compared to the 2013 national average (15.8 percent below the poverty level and 13.5 percent receiving Food Stamps and Supplemental Nutrition Assistance Program benefits), it becomes apparent that a high percentage of residents live below the poverty line and are already highly burdened by the cost of wastewater services.[10]

As demonstrated in Figure 4-2 above, 67.9 percent of the City household incomes fall below the medium national income of $52,250[11] which is up from the 65.5 percent in 2011.

TABLE 4-3 Local Economic Factors for Consideration

Indicator	Evansville	National Average	Variance
Poverty Level	25.0%	15.8%	158%
Receives Public Assistance	20.4%	13.5%	151%
2013 MHI	$32,414	$52,250	(161%)

As depicted on Table 4-3 Evansville has fared very poorly relative to the national MHI.

4.7.1 Financial Capability Assessment based on the Negotiated Plan and 25-Year Projection

In Section 4, the Utility summarizes its sources of data, financial projections and discusses the impact on customers. In Sections 5 and 6, additional local factors and other considerations are presented that must also be incorporated into any true assessment of affordability.

[9] Source: U.S. Census Bureau 2013 American Community Survey.

[10] U.S. Census Bureau 2013 American Community Survey 1-Year estimates.

[11] U.S. Census Bureau 2013 American Community Survey 1-Year Estimates.

4.7.1.1 Sources of Data and Supporting Information

Various sources of information have been relied upon to complete the projection. To the extent possible and/or practical, the most current sources of data were used. In other instances when current data was unavailable, historical data was used and brought forward to present day values. The various data sources have included the following:

- The Federal Government Bureau of Labor Statistics
- The U.S. Census Bureau
- The American Communities Survey
- The Utility's 2014 adopted budget
- The Utility's Non-IOCP Capital Improvement Plan
- The City and the Utility's Official Statements from bond offerings
- The City's 2013 Examination Report of the Indiana State Board of Accounts
- The City's 2014 operating reports and interim financial reports
- The Utility's Consulting Engineer's Analysis of FCA O&M Costs
- Discussions with industry experts

4.7.1.2 Residential Indicator

The Residential Indicator (RI) is the first of two phases, as prescribed in the Guidance for evaluating the affordability of the Utility's LTCP. The first phase attempts to quantify the financial burden on residential customers, and to determine their ability to pay for the LTCP. The first step of the RI is to identify current and proposed expenses, and we have also used this methodology in the 25-year projection. The factors considered in this projection include:

- Current O&M expenses
- Estimated expenses from the CMOM program
- Current outstanding debt and associated annual payments
- Proposed capital investments and projected annual debt service requirements of the IOCP
- O&M resulting from the IOCP

The second step of the RI is determining the percentage of costs that should be allocated to the residential customer class. For purposes of the 25-year projection, we have assumed that all rate increases would be across-the-board. Because of the City maintains separate rates for inside and outside of the City customers, we have developed three RI factors as follows:

4. The District RI based on perceived average rates and the MHI as calculated in the July 2015 FCA;

5. Inside-the-city RI based on the 2013 American Community Survey 1-Year Estimate for the City; and

6. Outside-the-city RI calculated from the 2013 American Community Survey 1-Year data.

For purposes of estimating the RI in Appendix C, the Utility assumed:

4. Across-the-board rate increases

5. The District MHI calculated consistent with the methodology documented in the July 31, 2015 FCA

6. Assumed average household use of 3,859 gallons per month consistent with the February 22, 2013 FCA.

4.7.1.3 Current Operations and Maintenance Expenses

Cash operating expenses of $22 million were used in the 25-year projection based on a test year ended September 30, 2014 adjusted for fixed, known and measurable increases. Inflation has been assumed to be 4.2 percent for 2016 which is based on recent experience and planned changes in operations. After 2016 the operation and maintenance expenses are assumed to grow at 2.34 percent per year which is the average rate of inflation for 1990 - 2010.

4.7.1.4 Cost Per Household – Rate Projections

Based on the 25-year projection for the Recommended $729 million IOCP, the CPH in the City increases to 2 percent of MHI by 2021, and then increases through 2028. After 2028 it stays at that approximate level through 2040.

Annual projected CPH for consumption of 3,859 gallons per month are as follows at various intervals:

	2013	2021	2030	2040
Inside City	$316	$727	$1,128	$1,348
Outside City	$426	$80	$1,523	$1,820

4.7.1.5 Cost Per Household RI – EPA FCA Methodology

The RI cost per household for the $729 million Negotiated Plan as a percent of MHI is a staggering 3.23% for the inside City households and 2.56% assuming the District MHI.

SECTION 5

Recommended Plan – May 31, 2013

This section describes the Utility's Recommended Plan for meeting CWA objectives for reducing sewer overflows submitted to EPA and IDEM on May 31, 2013. The Recommended Plan was rejected by EPA and IDEM on June 16, 2014, and is now superseded by the Final Negotiated Plan described in Section 6 below. The recommended plan addresses the community's highest priorities and balances the overall plan benefits with the Utility's financial capability to schedule and achieve the highest benefits as expeditiously as possible. The Utility submitted the plan because it was what it believed to represent the best level of control possible for the available public investment. This plan is based on the alternatives evaluation described in Section 3, the financial impacts and affordability considerations discussed in Section 4, and the input received from the CAC in 2012 and 2013. Summaries of the recommended projects are provided in this section, and specific and detailed information on each of the projects can be found in the technical documents integrated by this IOCP (specifically, the LTCP, SSRMP, and WWTP Facility Plan).

5.1 Overview of the Recommended IOCP

The City's Recommended IOCP would address and dramatically reduce the number of CSOs that occur in the City and eliminate chronic, recurring SSO locations through a two-phased, 28-year implementation schedule. The total cost of the Recommended IOCP is projected at $540 million over 28 years, with $384 million being spent over the first 20 years and $156 million over the final 8 years.

During the initial years of the Recommended IOCP, the Utility would invest approximately $44 million to eliminate chronic SSOs occurring in four areas of the separate sanitary system. Known defects and bottlenecks in the separate system will be remedied to eliminate these SSOs. Through the Utility's ongoing inspection and maintenance plan, other areas that experience capacity-related SSOs will be evaluated and addressed through an adaptive management approach described in Section 2. Using this approach, the removal of stormwater inflow and infiltration from the system and sewer line rehabilitation will be a priority for the Utility to prevent SSOs.

When complete, the Recommended IOCP would address SSOs, protect water quality, and reduce CSOs from approximately 50 activations to 12 activations during a Typical Year and increase the combined sewer system's percent capture from 35 percent today to 92 percent. EPA's CSO Control Policy seeks to have cities reduce overflows to 0 to 12 activations per year and increase percent capture to 75 to 100 percent. The CWA requires protection of water quality. Therefore, the proposed LTCP portion of the Recommended ICOP meets the regulatory thresholds put forth by EPA and the CWA. It is worth noting that the complete elimination CSOs is cost prohibitive and simply not practical, so residual CSOs will occur during some large storm events.

5.2 Recommended IOCP Projects

The Recommended Plan Evansville submitted to EPA and IDEM focuses on these major initiatives:

- Remedy the odor and aesthetic problems in Bee Slough through the control and treatment of CSO discharges into Bee Slough and the redirection of East WWTP treated effluent from Bee Slough to the Ohio River during high river conditions.
- Reduce the inflow of stormwater into the sewer systems through the construction of green infrastructure projects, partial sewer separation projects that include green infrastructure elements, and through I/I reduction projects in the separate sanitary sewer system.
- Increase treatment of captured wet-weather flows at the East WWTP by reactivating and utilizing the primary effluent bypass, eliminating any remaining hydraulic bottlenecks within the treatment processes, and changing wet-weather operations to operate the primary and secondary treatment processes in parallel to treat up to 68 mgd during wet-weather.
- Increase treatment of captured wet-weather flows at the West WWTP by constructing a new, expanded Headworks Facility, eliminating remaining hydraulic bottlenecks within the treatment processes, and constructing flow equalization facilities.
- Replace the 7th Avenue Lift Station to increase its pumping capacity and increase its reliability through the installation of redundant equipment and a backup power source, and construct a CSO storage and treatment facility at this location to capture and treat CSO discharges from the 7th Avenue East, Fulton Street, Franklin Street, and 9th Street CSOs.
- Increase capture of combined wet-weather flows by raising overflow weirs in the diversion structures throughout the entire system; by cleaning the Pigeon Creek Interceptor; and by implementing real-time control strategies to optimize the operation of the Pigeon Creek Interceptor and flood control system, the 7th Avenue Lift Station, and the West WWTP.
- Control CSO discharges to Pigeon Creek through construction of CSO storage facilities at the Diamond Avenue, Oakley Street, Delaware Street, and Oak Hill CSOs.
- Control CSO discharges to the Ohio River through construction of two CSO storage facilities in the downtown area to capture and control CSO discharges from the Dress Plaza, Chestnut Street, and Oak/Riverside CSOs.
- Optimize the Ohio Street and Broadway Avenue Interceptors to increase capture and treatment of CSO discharges from the St. Joseph Avenue CSO.
- Eliminate SSO occurrences at the four priority SSO locations through a combination of infiltration/inflow reduction and increased collection system conveyance capacity.
- Enhance the Utility's precipitation, flow, and overflow monitoring systems to continuously track system performance and the results of the implementing the proposed overflow control and inflow reduction projects.

Implementation of the Recommended IOCP would not negatively affect environmental justice populations. Although projects in the IOCP are spread throughout the community, much of the early work would occur near and focus on remedying Bee Slough, which is adjacent to economically disadvantaged neighborhoods. Additionally, the Renew Evansville Citizens Advisory Committee has not identified any environmental justice issues.

5.3 Green Infrastructure Program

The Utility has completed an investigation of a range of potential green infrastructure programs and projects throughout the combined sewer area, with a particular focus on the City's downtown and efforts to augment the sewer separation approaches discussed previously. The investigation examined opportunities to incorporate green infrastructure into a variety of public infrastructure improvements and in keeping with other planning initiatives for redevelopment and beautification of the City's downtown. As a result, the Utility has identified a program of green infrastructure improvements that are consistent with other City planning objectives and that leverage available funding across multiple City departments. Within the downtown area and nearby residential neighborhoods, green infrastructure includes street improvements to replace all or a portion of the conventional pavement with porous pavement and other streetscape green technologies. In addition, there are large public parking lots and some City parks that present opportunities to include green infrastructure to intercept, divert, and/or capture stormwater runoff before it can enter the CSS. In addition to porous pavement, the green street concept includes, porous sub-grade material and underdrain systems intended to both convey and detain stormwater runoff. The outlet for this green street concept is a dry well that redirects stormwater discharges to a buried layer of pervious sand and gravel. In areas of the City where the infiltration capacity of the surrounding soils is lower, the green infrastructure improvements would discharge residual flows through an underdrain back to the CSS. Portions of the City are underlain with the porous Ohio River sand aquifer, which has the potential to accommodate infiltration approaches.

Green infrastructure improvements optimize the performance of the proposed sewer separation and provide inherent water quality benefits to those projects. In addition, the green street concept with a dry well is capable of significant reductions in stormwater runoff volume to the CSS in areas where there is no suitable storm system outfall. In the downtown areas of the City and in the adjacent historic neighborhoods, green infrastructure improvements provide an opportunity to meet the overall IOCP objectives while also providing other intrinsic value to the community. The Utility will continue to interact with City departments, private industry, and neighborhoods on a regular basis to identify opportunities where green infrastructure can be incorporated into projects that would reduce CSOs and provide other benefits. In addition, the green street concept is expected to create additional incentive for the community to expand on its redevelopment and street enhancement programs. The Utility's program to implement green infrastructure will include a scoring system that values each potential project based on cost and other benefit factors that determine prioritization.

5.4 Recommended Plan CSO Control Measures

The CSO projects proposed in the Recommended Plan are shown in Figure 5-1 and summarized in the following sections.

5.4.1 Control Measure 1 – Bee Slough Restoration and CSO Treatment

The recommended plan to remedy the odor and aesthetic problems in Bee Slough is shown on Figure 5-2 and includes the design and construction of the following projects:

- Drainage pipelines between the concrete channel and the East WWTP Headworks Facility to provide the ability to send standing water in Bee Slough to the WWTP for treatment.

- A pump station to pump treated effluent from the East WWTP to the Ohio River during periods of high river levels (instead of allowing it to back up and collect in Bee Slough when the K-4 Levee Pump Station is being utilized).
- A wetland treatment system and associated pump station and disinfection system to capture and treat discharges from the Kentucky Avenue CSO.
- Pipes and drains that interconnect the wetland pump station, disinfection facility, and East WWTP to maximize the use of the East WWTP for treating captured CSO, and to allow for recirculation of water through the wetland treatment system to increase wetland treatment performance.
- A combined storage/treatment facility (VTU) for capture, treatment, and disinfection of CSO discharges from the Cass Avenue CSO, and a pipeline that captures CSO discharges from the Adams Street CSO and sends the captured flow to this facility.

The project will be subject to review and approval by and coordination with USACE and could be subject to changes based on their review and approval process. As proposed, the Bee Slough Remediation Projects are expected to treat 100 percent of the overflows in the Typical Year.

5.4.2 Control Measure 2 – East WWTP Improvement Projects

In early 2012, the Utility completed installation of a second fine screen and fourth pump in the Headworks Facility, which expanded the headworks capacity from 20 to 40 mgd. Since that time, the Utility has completed WWTP stress testing and determined that up to 50 mgd can be treated by the primary treatment process and up to 28 mgd can be treated by the secondary process. The existing disinfection process has the capability of treating up to 32 mgd.

The recommended plan would first upgrade and expand the existing disinfection tanks to increase disinfection capacity to 68 mgd and reactivate existing piping to allow flows treated by the primary treatment process that exceed the secondary treatment process capacity to bypass the secondary treatment units. The Utility will take the opportunity of this upgrade to the capacity of the disinfection facilities to convert from the use of gaseous chlorine (which poses safety and health risks), to sodium hypochlorite, a safer disinfecting chemical. Those modifications would allow the Utility to treat up to 40 mgd through the primary treatment and disinfection processes, and 28 mgd through the secondary treatment process during and after wet-weather events. This means that up to an additional 12 mgd of wet-weather flow can be treated by the WWTP during each storm event rather than being discharged from the collection system without any treatment. Upon completion of the wetland pump station and piping that connects it to the WWTP, the Utility will adjust wet-weather operations to treat up to 68 mgd through the East WWTP by running the primary and secondary treatment processes in parallel and disinfecting the combined flow before discharge to the Ohio River. A No Feasible Alternatives Analysis for peak wet weather diversion was conducted and is presented in Section 5.3 of Volume 4.

The plan also includes the modification of the CSO 103 diversion structure weir (the East WWTP bypass point) to completely divert wet-weather flows into the East WWTP for treatment during the Typical Year. Conversion of the existing chlorine disinfection system to use hypochlorite for disinfection is also included in the recommended plan. Figure 5-3 shows the planned improvements.

5.4.2.1 Flow Regimes

As operational flexibility is crucial in achieving the Utility's goal for this system, all new infrastructure proposed will be connected with the existing East WWTP headworks and treatment process. This results in numerous potential operating scenarios, the analysis and optimization of which should be conducted in AFP and or preliminary design. However, as part of the IOCP, general operational scenarios were developed for a series of six flow regimes. In this analysis, "total flow" was defined as the combined flow from CSO 001 and the East WWTP influent sewer. The breakdown of flow regimes is as follows:

- Wet-Weather Flow Regime 1 (WW-1) includes all scenarios where total flow is less than 28 mgd. In this case, all flow is routed through WWTP headworks. The WWTP primary and secondary processes are operated in series, with all flows receiving secondary treatment up to 28 mgd. All flow is disinfected prior to final discharge.

- Wet-Weather Flow Regime 2 (WW-2) includes all scenarios where total flow is between 28 and 40 mgd. In this case, the WWTP operates very similarly to WW-1. All flow is routed through WWTP headworks. The WWTP primary and secondary processes are operated in series, with flows up to 28 mgd receiving secondary treatment, and flows between 28 and 40 mgd receiving primary treatment only. In this scenario, the Primary Effluent (PE) Bypass is utilized for the flow treated by the primary process, and all flow is disinfected prior to final discharge.

- Wet-Weather Flow Regime 3 (WW-3) includes all scenarios where total flow is between 40 and 68 mgd. In this case, flow is pumped to the WWTP via the WWTP headworks and the new wetland pump station. WWTP primary and secondary processes are operated in parallel in this regime. All flow from the WWTP headworks is sent through the primary treatment process, and flow from the wetland pump station is sent through the secondary treatment process. All flow is disinfected prior to final discharge.

- Wet-Weather Flow Regime (WW-4) includes all scenarios where total flow is greater than 68 mgd. In this case, all WWTP processes are at capacity, and are operating as described in WW-3. Flow in excess of 68 mgd is routed to the wetland until the wetland is full. The volume in the wetland is routed to the WWTP as primary and secondary capacity becomes available, or sent to the wetland disinfection process if effluent water quality targets have been achieved by the wetland treatment process. All flow is disinfected prior to final discharge. The Utility's preference will be to discharge disinfected wetland effluent through the WWTP effluent sewer (which will be pumped during high river stages) if the effluent sewer and pump station have capacity available to convey the flow. Alternatively, effluent could be discharged into Bee Slough if necessary.

- Wet-Weather Flow Regime (WW-5) includes all scenarios where total flow is greater than flows experienced the Typical Year. In this case, all WWTP processes are at capacity, and are operating as described in WW-4. When the wetland reaches maximum capacity, flow control will shut influent gates at the wetland pump station, and excess flow will be discharged into Bee Slough via a new CSO 001 outfall/diversion structure.

- The Dry-Weather Flow Regime includes all dry-weather scenarios. In this case, all flow is routed to the WWTP headworks through the existing influent sewer, and the primary and secondary processes are operated in series. During extended periods of dry weather, a portion of treated effluent is routed to wetland to sustain plant life. There is no discharge

from wetland in this scenario, because the wetland will be filled only to the extent necessary to maintain plant viability, and the gates that control wetland discharge will remain closed. If the wetland is brought online under any of the wet-weather operating scenarios, any water in the wetland will either be routed back through the East WWTP or sent through the wetland disinfection process and disinfected prior to discharge.

Volume 2, Table 5-10 summarizes the critical aspects of each scenario, and Figure 5-19 through Figure 5-24 in Volume 2 illustrate the respective flow paths through the East WWTP and wetland facilities. Under all scenarios, the Utility anticipates and will design the system to capture and treat the first flush. Furthermore, all flow in all scenarios will meet primary treatment equivalency or better and will be disinfected.

5.4.3 Control Measure 3 – West WWTP Improvement Projects

The stress tests completed during summer 2012 determined that the West WWTP can treat up to 40 mgd through the primary treatment process and that the secondary treatment process has the capability to treat up to 47 mgd. The tests also determined that the existing disinfection process has the capability of treating up to 56 mgd. Historically, the Utility has limited headworks pumping to less than 40 mgd due to the primary process's maximum capacity, and engineering analysis has determined that it is unlikely that the existing headworks has the ability to pump flows much higher than 40 mgd. A further complication is that pumping at these higher flow rates negatively affects the influent sewer system hydraulics, because of the need to maintain high, flooded wetwell levels that are outside the bounds of the facility's design conditions. This situation, in combination with the single fine screen in the Headworks Facility, with only a coarse bar screen for backup, warrants a replacement Headworks Facility that is purpose-built for these conditions, that contains the appropriate redundancy in equipment, and that has provisions for maintaining consistent influent sewer levels during wet-weather events.

The IOCP would construct a new Headworks Facility designed and constructed to reliably treat up to the 47 mgd peak secondary treatment capacity. This higher flow rate would be achieved through construction of a pipe that would allow up to 7 mgd of wet-weather flow to be sent directly to the secondary process during events when flow is greater than the 40 mgd primary clarifier capacity. The plan also includes conversion of the disinfection process to hypochlorite.

Figure 5-4 shows the planned improvements.

5.4.4 Control Measure 4 – Pigeon Creek Interceptor Optimization and Real-Time Control Projects

The Utility has already started the process of optimizing the Pigeon Creek Interceptor system and maximizing its capability to capture and treat more wet-weather flow. Historically, operation of the levee pump stations and wet-weather flow control gates has focused on preventing flooding on the City side of the flood protection system, and this focus on flood prevention has generally taken priority over CSO control. Consequently, those operating rules have been universally applied to flow control gate operations and the Utility believes that opportunities exist to adjust operations to capture additional wet-weather flow without causing flooding. Therefore, in May 2012, the Utility launched a project to collect and analyze flow and precipitation data in the Pigeon Creek Interceptor in conjunction with levee gate and pump station operational data to better understand the in-system conditions in the interceptor during rain events. This project includes the development of a real-time decision support system to facilitate and direct operational decisions with the goal of capturing more wet-weather flow in

the system without causing surface flooding or backups into homes or businesses. It also includes a task to identify potential opportunities to store wet-weather flow in the trunk sewer tributary to the Pigeon Creek Interceptor, and with the same requirement that no surface flooding or backups occur as a result.

Proposed IOCP Projects

renewEVANSVILLE

CSO Inventory

CSO	NAME	RECEIVING WATER	WWTP SERVICE AREA
001	Kentucky Avenue	Bee Slough	East
002	Cass Avenue	Bee Slough	East
103	Junction Box Prior to WWTP Headworks	Ohio River	East
004	Adams	Bee Slough	East
006	Fulton Avenue Pumping Station	Ohio River	West
008	Chestnut Street	Ohio River	East
009	7th Avenue West	Ohio River	West
010	Dress Plaza	Ohio River	East
011	Weinbach Lift Station (Oakhill Road)	Pigeon Creek	East
012	Maryland Street - West Bank	Pigeon Creek	West
013	Delaware Street	Pigeon Creek	West
014	Dresden Street	Pigeon Creek	West
015	7th Avenue East	Ohio River	West
016	Franklin Street	Pigeon Creek	West
017	6th Avenue	Pigeon Creek	West
018	Oakley Street	Pigeon Creek	West
020	9th Avenue	Ohio River	West
022	St. Joseph Avenue	Ohio River	West
123	West Plant CSO	Ohio River	West
024	Baker Street	Pigeon Creek	West
025	Diamond Avenue	Pigeon Creek	West
038	Oak / Riverside	Ohio River	East

Map Legend

East Service Area
- Separate Sewer Area
- Combined Sewer Area

West Service Area
- Separate Sewer Area
- Combined Sewer Area

- Wastewater Treatment Plant
- Priority SSO Location
- CSO
- Storage Basin
- High Rate Treatment Unit
- Sewer Rehab Projects
- City Limits

Mill Road SSO Group

Bergdolt Road SSO

Oakley CSO Control Facility
Storage Basin

Relief from Baker to Diamond Ave
Storage Basin and Treatment at Diamond Ave.

Delaware, Maryland, Dresden & 6th Avenue CSO Control Facility
Relief sewer from 6th Ave, Dresden, and Maryland to Storage Basin at Delaware

St. Joesph CSO Control Facility
System Optimization

Dress Plaza CSO Control Facility
Storage Basin

Oakhill CSO Control Facility
Storage Basin

Chestnut & Oak-Riverside CSO Control Facility
Relief sewer from Chestnut to storage basin at Oak-Riverside

Lincoln Avenue SSO Group

Tekoppel Avenue SSO

WEST WWTP

Franklin, 9th Ave, Fulton, and 7th Ave CSO Control Facility
Relief sewer from Franklin, 9th Ave, Fulton, to Storage Basin and treatment unit at 7th Ave

EAST WWTP

Howell Park CSO Control Facility
Storage Basin

Bee Slough
See Proposed Plan figures

Figure 5-1
Recommended Plan
Integrated Overflow Control Plan
May 31, 2013

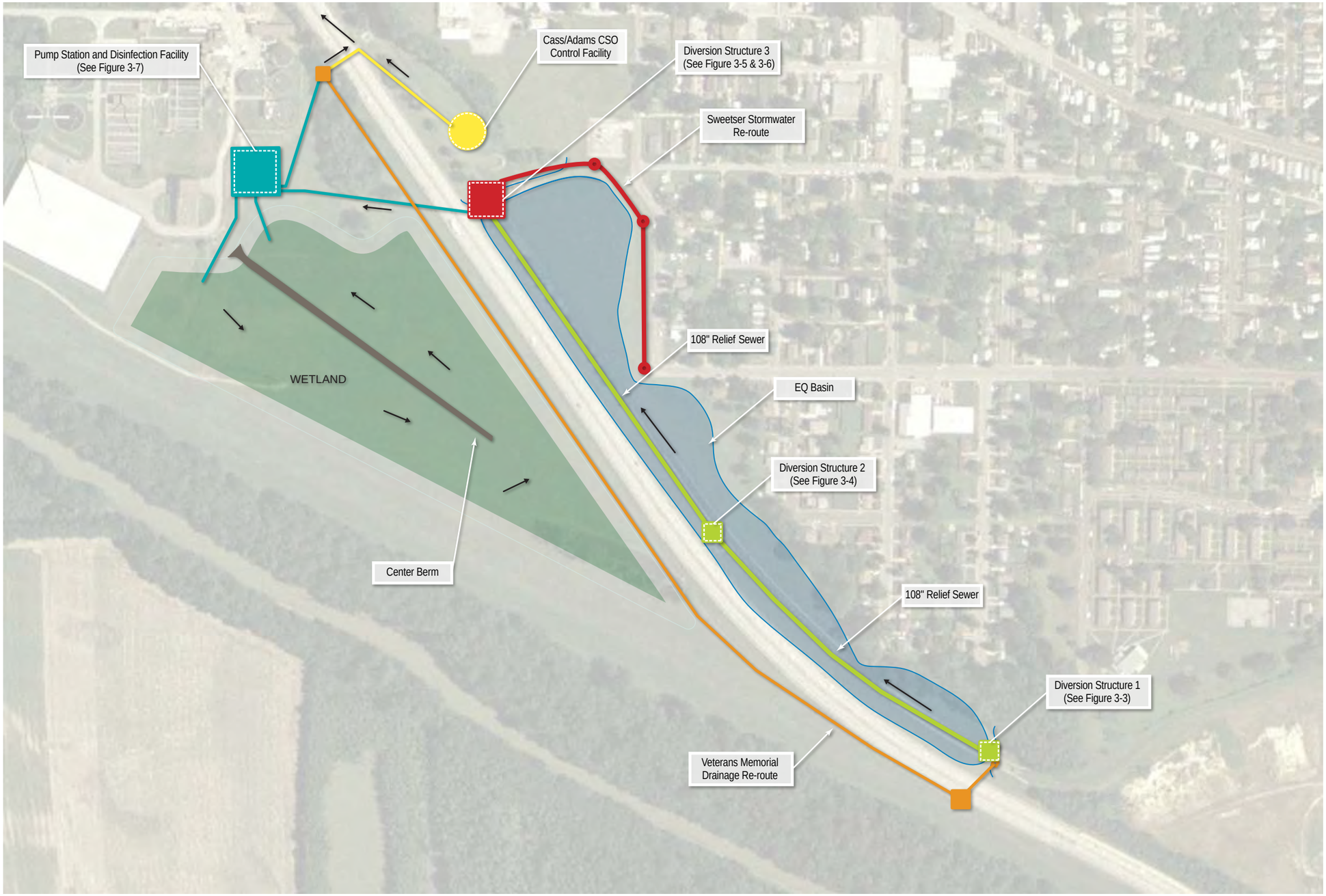
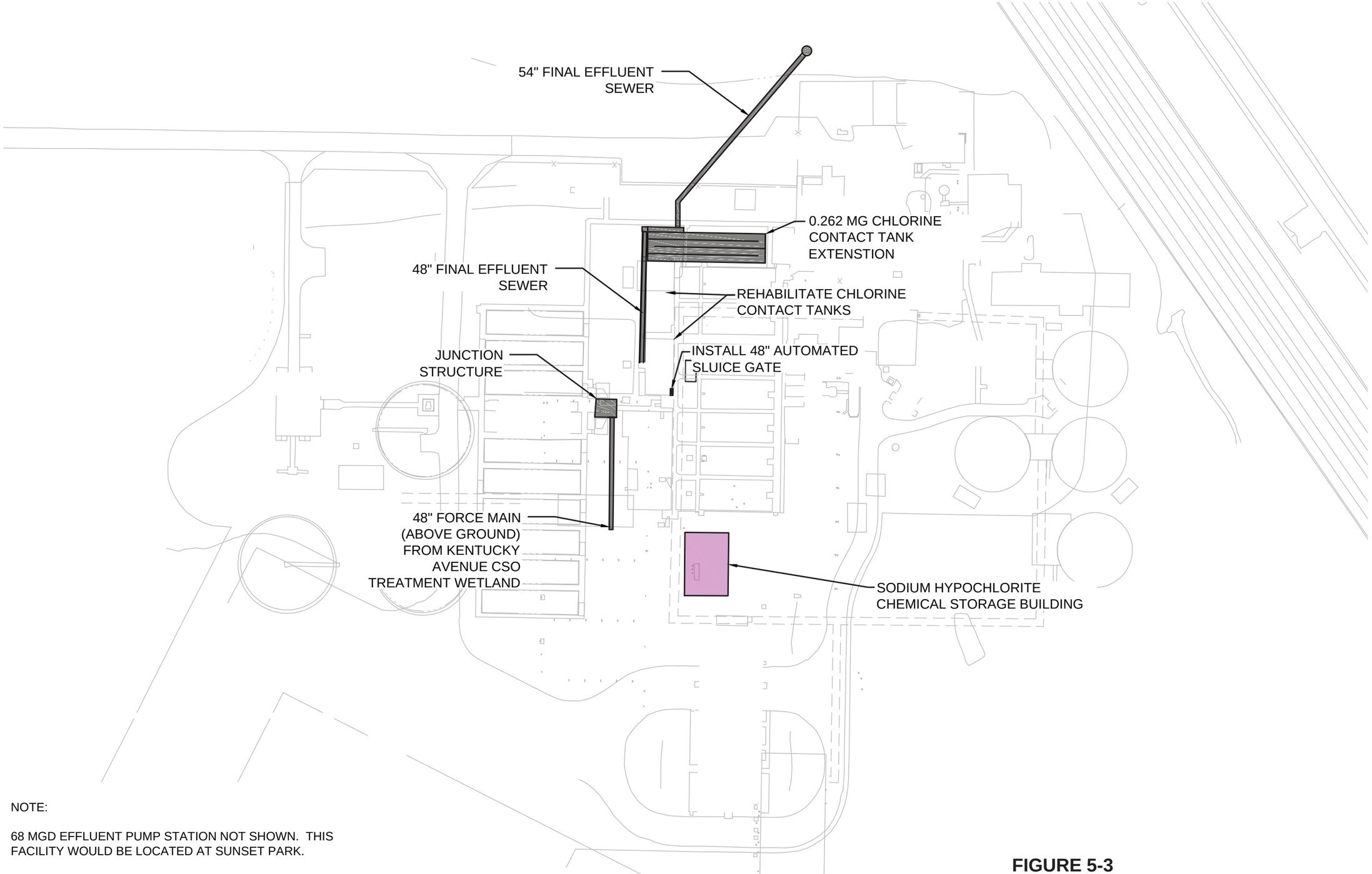


FIGURE 5-2
Bee Slough Remediation
Integrated Overflow Control Plan
May 31, 2013



NOTE:

68 MGD EFFLUENT PUMP STATION NOT SHOWN. THIS FACILITY WOULD BE LOCATED AT SUNSET PARK.

FIGURE 5-3
East WWTP Project
Integrated Overflow Control Plan
May 31, 2013

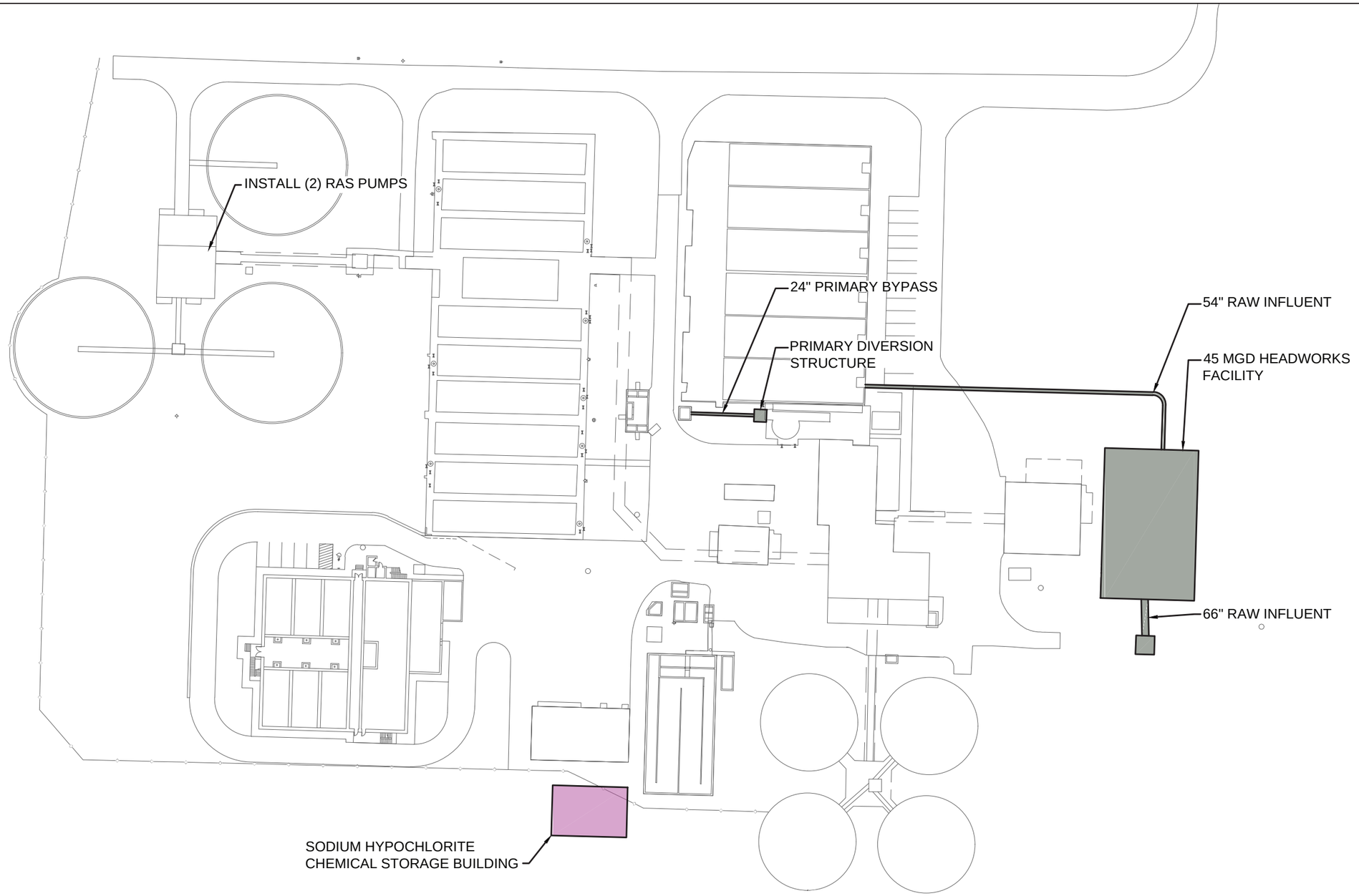
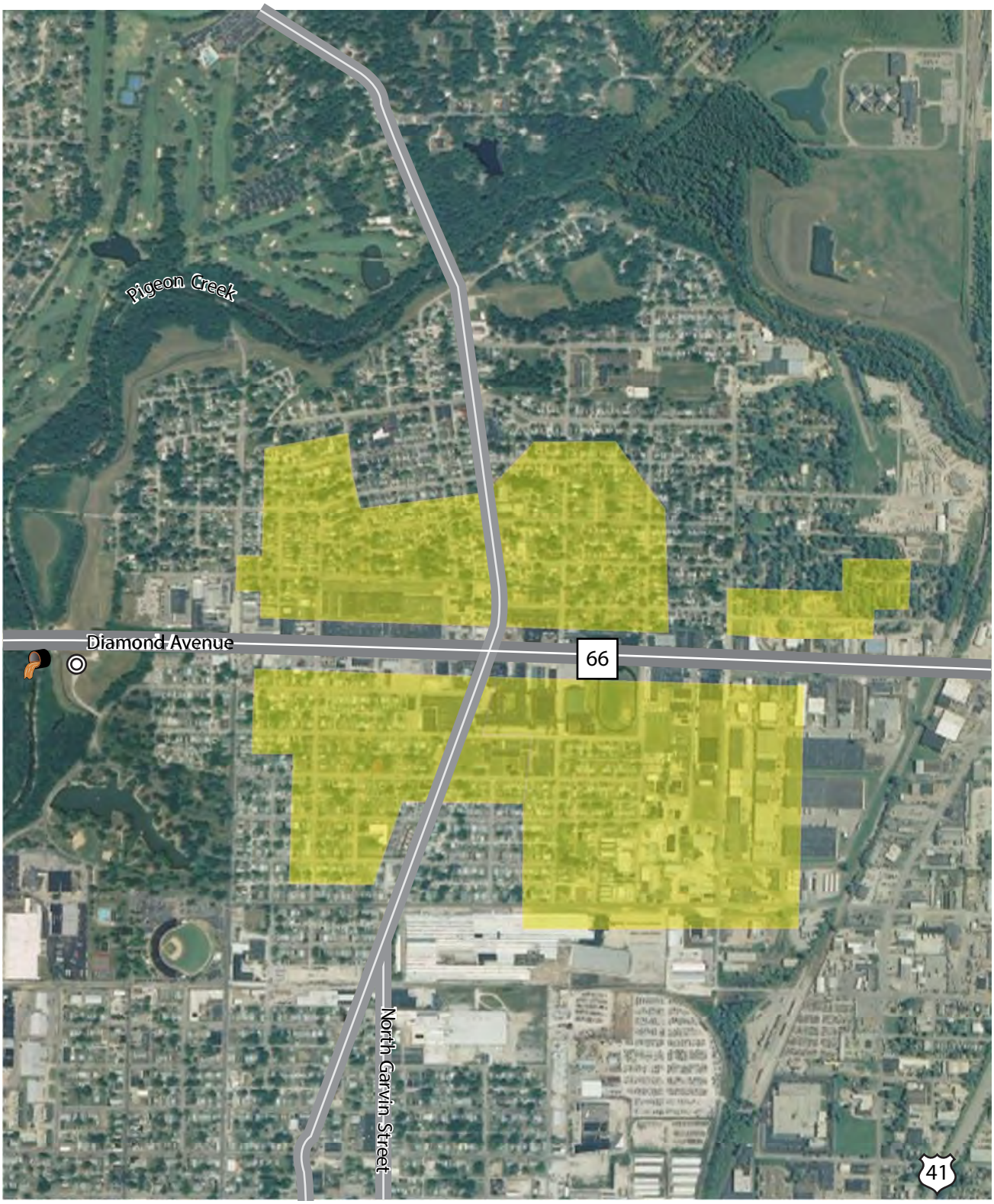


FIGURE 5-4
West WWTP Project
Integrated Overflow Control Plan
May 31, 2013



Legend

CSO

Storm Sewer Project Limits

Levee Pump Station

1,000 Feet

North

Figure 5-5
Diamond Avenue Storm Sewer Separation Project Boundaries
Integrated Overflow Control Plan
May 31, 2013

Other key information used to develop this project was the condition of the Pigeon Creek Interceptor. During summer 2011, the Utility commissioned an inspection of this critical piece of sewer infrastructure using sonar and other state-of-the-art inspection technologies to identify sediment levels in the pipeline, structural defects that may present a risk for pipe failure, and other structural attributes that may impede flow. As a result of this inspection, the Utility will be moving forward with a major cleaning project to remove the sediment in the pipe.

Future phases of this project may include making modifications to the diversion structures, including flow control and better integrating flood protection infrastructure with CSO capture strategies. In addition, after cleaning the interceptor, the Utility will continue to make refinements to the West system hydraulic model to right-size IOCP Phase 2 CSO control projects.

5.4.5 Control Measure 5 – 7th Avenue, Franklin Street, Fulton Avenue, 9th Avenue, and St Joseph Avenue CSO Control Projects

The 7th Avenue Lift Station plays a vitally important role in transferring millions of gallons of wastewater to the West WWTP. Currently, the station has no onsite backup power system and only a single screen with no redundancy. This lack of backup equipment poses a high risk for large sewer overflows in the event of a power interruption or problem with the screen. To reliably capture and pump wet-weather flows in the future, the Utility determined through its analyses of this facility that it needs to be replaced. The recommended plan would replace the 7th Avenue Lift Station, and it would be designed and constructed to ultimately have a firm pumping capacity of 135 mgd, with 45 mgd being pumped to the West WWTP and 90 mgd being pumped to an onsite storage and ballasted flocculation HRT (Actiflo) treatment facility. Screening, grit removal, and backup power would be included as well.

In addition to the lift station, storage, and treatment facilities, Control Measure 5 includes:

- Construction of relief sewers from the Fulton Avenue, 9th Avenue, and Franklin Street CSOs to the proposed 7th Avenue Lift Station.
- Raising the St Joseph Avenue CSO regulator weir to capture more wet-weather flow and send it to the West WWTP for treatment.

5.4.6 Control Measure 6 – Diamond Avenue/Baker Street Sewer Separation and CSO Control Projects

One of the key features of IOCP Phase 1 is the Utility's focus on reducing stormwater runoff into the CSS at key locations to reduce the size and cost of "end of pipe" CSO control facilities. The City's 2007 Stormwater Master Plan (Clark Dietz, Inc. 2007) identified several partial sewer separation projects in the Diamond Avenue subbasin that direct street drainage into the 90-inch storm sewer that runs east to west along Diamond Avenue. Figure 5-5 shows the projects' boundaries. Each of the projects will include green infrastructure components to provide water quality treatment for the stormwater-borne pollutants. These projects will free up significant capacity in the CSS to convey, store, and treat additional combined flows from other subareas.

In addition to the sewer separation projects, control of the CSOs from the Diamond Avenue and Baker Street CSOs will be accomplished by constructing an underground CSO storage facility beneath the Diamond Avenue levee pump station and pumping CSO flow from the Baker Street CSO to the storage facility. Stored CSO will be pumped into the Pigeon Creek Interceptor and routed to the West WWTP for treatment.

5.4.7 Control Measure 7 – Oakley Street CSO Storage Facility

CSO flow from the Oakley Street CSO will be captured in an underground CSO storage facility near the Oakley Street CSO diversion structure. Stored CSO will be drained by gravity into the Pigeon Creek Interceptor and routed to the West WWTP for treatment.

5.4.8 Control Measure 8 – Oak Hill Sewer Separation and CSO Storage Facility

This control measure includes the Akin Park, State Hospital, Boeke Road Outfall, Weinbach and Keck sewer separation projects from the 2007 Stormwater Master Plan (Clark Dietz, Inc., 2007) and an underground CSO storage facility that will be located near the Oak Hill CSO outfall. Stored CSO will be pumped into the adjacent sewer collection system and routed to the East WWTP for treatment. The areas to be separated are described and presented within the 2007 Stormwater Master Plan.

5.4.9 Control Measure 9 – Downtown CSO (Oak/Riverside, Chestnut, and Dress Plaza) Control Projects

Control Measure 9 includes construction of two underground storage facilities in the downtown area. One facility will capture wet-weather flows in the Dress Plaza CSS basin and the other will be located within the Oak/Riverside CSS basin; flows from the Chestnut CSS basin will be routed to it via a proposed relief sewer. Stored CSO will be pumped into the adjacent collection system and routed through the Riverside Interceptor to be treated at the East WWTP.

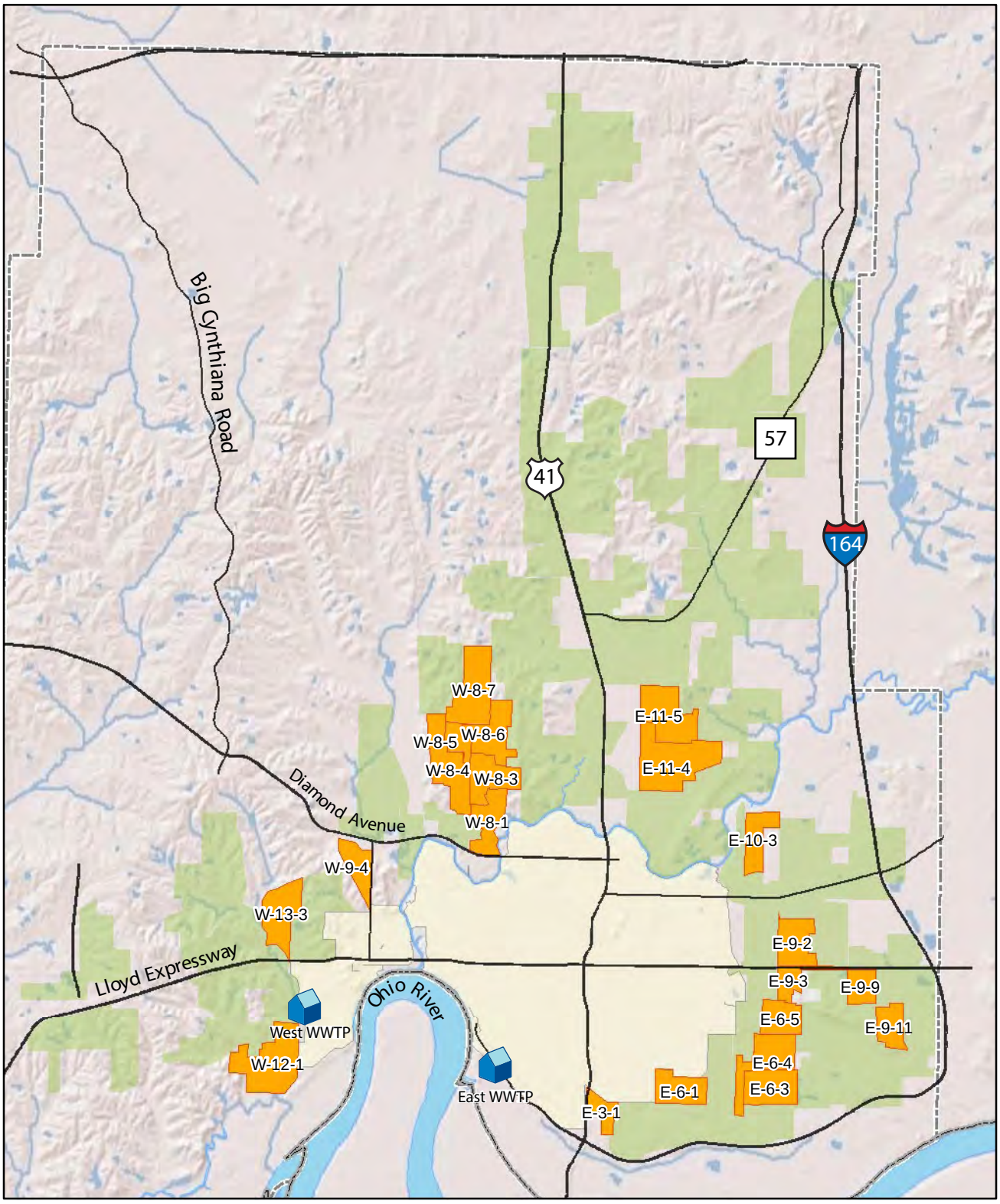
The green infrastructure program described above will be primarily focused in the downtown area to reduce the size and cost of Control Measure 9 or to attempt to eliminate the storage projects altogether.

5.4.10 Control Measure 10 – 6th Avenue, Dresden Street, Maryland Street, and Delaware Street CSO Control Projects

In this control measure, a CSO storage facility will be constructed near the Delaware Street CSO outfall. A relief sewer system will capture CSO from the Maryland Street, Dresden Street, and 6th Avenue CSOs and route it to the proposed Delaware Street CSO Storage Facility. Stored flow from the CSOs will be pumped into the Pigeon Creek Interceptor and routed to the West WWTP for treatment.

5.5 SSRMP Projects

During the sewer system evaluation projects conducted in 2010 and 2011, the Utility investigated approximately 20 percent of the separate sanitary sewer system to identify sources of stormwater inflow, structural defects in the sewers, and sources of groundwater infiltration. The SSRMP describes in detail the projects proposed to be implemented in the investigation areas to reduce stormwater inflow, repair broken manholes and pipes, and restore sewer mains using trenchless technologies. Figure 5-6 shows the areas where these projects are proposed.



Legend

- Wastewater Treatment Plant
- Sanitary Sewer Rehabilitation Project Areas
- Separate Sanitary Sewer Area
- Combined Sewer Area
- Hydrography
- Major Road
- Indiana State Boundary

6,000 Feet

North

Figure 5-6
Evansville Sewer Rehabilitation
Integrated Overflow Control Plan
May 31, 2013

Using this analysis, the Utility identified locations that experienced recurring, wet weather-related SSOs and should therefore be included in the SSRMP as well as the projects and schedule for eliminating the SSO events at those locations. Locations that currently experience wet-weather related SSOs were further analyzed to determine whether the locations experience recurring SSOs and whether the SSS models predict such an occurrence. Maintenance-related SSOs caused by problems in the Utility's system are corrected immediately upon discovery and typically do not recur. Any locations with two or more maintenance-related SSOs are identified, and the Utility's collection systems maintenance teams address these locations through the Repeat Blockage Cleaning and Inspection Program conducted under the Utility's CMOM program. Consequently, maintenance-related SSOs are not included in the SSRMP. This analysis resulted in the identification of four recurring SSO locations that will require system improvements to provide additional capacity to convey wet-weather flows. The locations, in order of priority, are:

1. 1st Avenue and Mill Road
2. Lincoln Avenue near Plaza Drive
3. Tekoppel Avenue near the West WWTP
4. Bergdolt Road near Oak Hill Road

Volume 3, the SSRMP, provides additional detail on the approach and project phasing for SSO elimination.

The Utility takes an adaptive management approach to address any future locations with recurring SSOs. The Utility will evaluate SSO reports to identify areas that may experience recurring SSOs in the future, and any such locations will be addressed by the Utility's CMOM program and potentially through additional capital projects.

5.6 Capital Costs and Implementation Schedule

Table 5-1 provides planning-level opinions of probable capital costs for the Phase 1 projects and the implementation schedule. It includes the key dates required by the Decree: the bid date, commencement of construction, and achievement of full operation.

Table 5-1 sets forth the overall, 28-year IOCP schedule. Figure 5-7 represents a time benefit graph depicting the capital expenditures over time relative to the benefits achieved. Figure 5-1 represents a map with the locations of the IOCP projects.

5.7 Adaptive Management Implementation Approach

As previously described, the Utility is taking an adaptive management approach to the IOCP. This approach to implementing the IOCP is being used because the projects proposed to be conducted in the early years of the IOCP will reduce stormwater inflow into the sewer systems or redirect stormwater inflow out of the sewer systems. This will reduce the size and cost of new overflow control infrastructure projects proposed in later years. Additionally, the uncertainty inherent in any computer model used to size projects needs to be refined and recalibrated over time to ensure the right-sizing of projects.

Table 5-1 28-year IOCP Schedule

Control Measure/Plan	Project	Addresses	Planning Level Opinions of Probable Capital Costs	Bid Date	Commencement of Construction	Achievement of Full Operation
Green Infrastructure	All	CSS Basins	16,816,830	1/1/2018	1/2019	5/31/2035
1	Bee Slough Restoration and CSO Treatment	001, 002, 004	140,985,000	1/1/2019	1/1/2020	5/31/2035
2	East WWTP Improvement Projects	103	21,183,000	1/1/2019	1/1/2020	1/1/2023
3	West WWTP Improvement Projects	123	43,590,000	1/1/2021	1/1/2022	1/1/2028
4	Pigeon Creek Interceptor Optimization and RTC Projects	012, 013, 014, 016, 017, 018, 024, 025	4,000,000	1/1/2018	1/1/2019	1/1/2023
5	7th Avenue, Franklin Street, Fulton Avenue, 9th Avenue, and St. Joseph Avenue CSO Control Projects	006, 009, 015, 016, 020, 022	109,112,000	1/1/2025	1/1/2026	1/1/2038
6	Diamond Avenue/Baker Street Sewer Separation and CSO Control Projects	All CSOs	49,163,000	1/1/2030	1/1/2031	7/1/2039
7	Oakley Street CSO Storage Facility	018	3,872,000	1/1/2034	1/1/2035	7/1/2036
8	Oak Hill Sewer Separation and CSO Control Projects	011	14,164,000	1/1/2025	1/1/2026	7/1/2039
9	Downtown CSO (Oak/Riverside, Chestnut, and Dress Plaza) Control Projects	008, 010, 038	52,405,000	1/1/2037	1/1/2038	1/1/2043
10	6th Avenue, Dresden Street, Maryland Street, and Delaware Street CSO Control Projects	012, 013, 014, 017	40,711,000	1/1/2040	1/1/2041	5/31/2043

Table 5-1 28-year IOCP Schedule

Control Measure/Plan	Project	Addresses	Planning Level Opinions of Probable Capital Costs	Bid Date	Commencement of Construction	Achievement of Full Operation
SSRMP	North Park Rehabilitation Projects	Mill Road SSOs	10,529,000	1/1/2018	1/1/2019	1/1/2023
SSRMP	North Park Capacity Projects	Mill Road SSOs	4,247,000	1/1/2030	1/1/2031	5/31/2035
SSRMP	Lloyd Expressway Rehabilitation Projects	Lincoln Avenue SSOs	2,442,000	1/1/2021	1/1/2022	1/1/2025
SSRMP	Lloyd Expressway Capacity Projects	Lincoln Avenue SSOs	2,961,000	1/1/2024	1/1/2025	1/1/2027
SSRMP	NW/SW Rehabilitation Projects	Tekoppel Avenue SSOs	3,614,000	1/1/2022	1/1/2023	1/1/2027
SSRMP	NW/SW Capacity Projects	Tekoppel Avenue SSOs	3,054,000	1/1/2026	1/1/2027	1/1/2028
SSRMP	E-11 Rehabilitation Projects	Bergdolt Road SSOs	3,251,000	1/1/2022	1/1/2023	1/1/2026
SSRMP	E-11 Capacity Projects	Bergdolt Road SSOs	10,760,000	1/1/2027	1/1/2028	1/1/2030
SSRMP	SSS Rehabilitation Projects	SSS Basins	3,423,000	1/1/2024	1/1/2025	5/31/2035
	Proposed IOCP Cost		**540,282,830**			

Notes

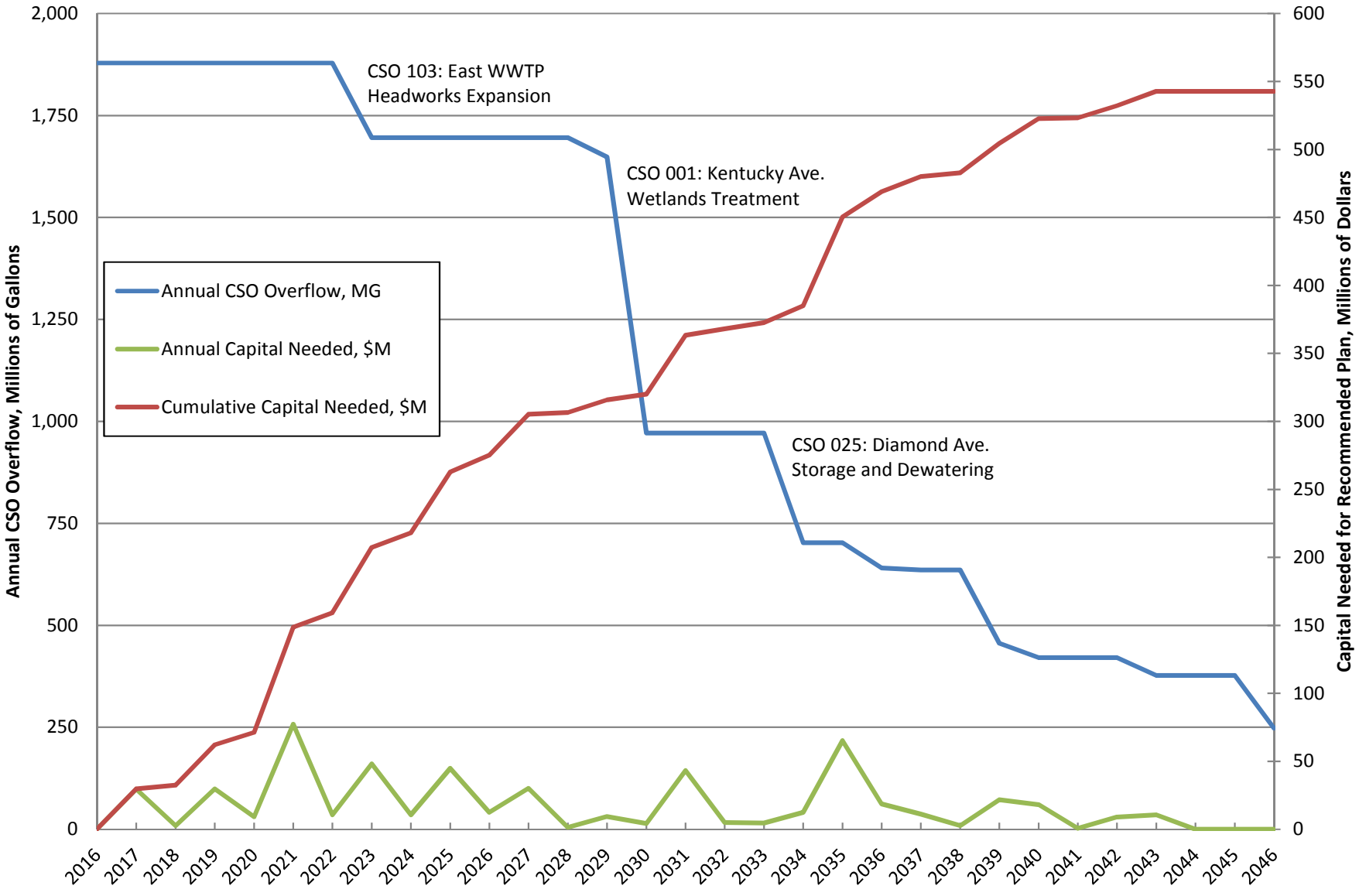
1. Refer to the LTCP, SSRMP, and WWTP Facility Plan for specific project details and development of cost opinions.

2. The proposed bid, commencement of construction, and achievement of full operation dates are subject to change based on state and federal (including USACE) permitting and approval.

3. This summary table present sonly capital cost because it is the key scheduling component of cost. Project O&M and Life Cycle costs are presented with project details in the appendixes to the LTCP.

4. Costs are based on 2012 dollars.

Figure 5-7 Time-Benefit Graph
Recommended Plan, 2016–2046
May 31, 2013



The proposed IOCP projects have been sized using planning-level computer models and other engineering analysis tools that were calibrated based on the condition of the existing system and using data that was largely collected during 2011. 2011 has been documented as the wettest year since precipitation data began being recorded in the 1890s. This created significant challenges in sewer system model development and other technical assessments conducted to develop the IOCP. Analysis and project development using planning-level models and approaches is inherently conservative and under normal circumstances presents opportunities for project and cost refinement during plan implementation. However, refinement opportunities generally require actual performance data gathered through time and after system optimization and I/I reduction. In the Utility's case, the complexity and interdependency of the CSS operation in relation to the operation of the flood protection system have made model calibration more difficult, and the extremely wet year introduced significant additional challenges and uncertainty. This uncertainty forces additional conservatism in predicting overflow volumes and flow rates, which may translate into higher projected costs for overflow control facilities. The Utility requested and was granted an additional 6 months to collect additional flow data during a drier period and to refine the computer models used for planning the IOCP projects, which resulted in more computer model certainty, a more cost-effective plan, and better projected performance. However, an adaptive approach is still warranted to achieve the best performance at the lowest life-cycle cost across the entire IOCP.

The proposed adaptive approach to IOCP implementation recognizes the conservatism and uncertainty inherent in this process. It also recognizes that system conditions and future facility sizing will change. Changes will occur as a result of (1) implementing specific optimization or real-time control projects and (2) constructing green infrastructure projects, overflow control facilities, reducing I/I, and redirecting stormwater inflow out of the sewer systems. The adaptive management approach can be summarized as follows:

- Monitor and analyze dry- and wet-weather flow data before and after individual IOCP projects are implemented.
- Refine and/or recalibrate the hydraulic models on an ongoing basis and after individual IOCP projects are implemented.
- Conduct value engineering and verify infrastructure sizing during advanced facility planning and preliminary design efforts for storage, pumping, and conveyance projects to ensure that the individual projects meet the planned performance objectives and support the IOCP overall performance objectives.

The following sections summarize the specific projects included in the IOCP.

5.8 Post-Construction Monitoring Program

As previously stated, the Utility is committed to continuous improvement and adaptive management to appropriately size future CSO improvements and to address the most pressing problems first. Consequently, the Utility has begun to enhance the monitoring of precipitation, in-system flows and overflows from the system. A key component of the recommended Phase 1 plan is to conduct a post-construction monitoring program to determine and report on the performance of the projects and the resulting benefits. A more detailed discussion of the Post-Construction Monitoring Program is provided in Section 10 of Volume 2, the LTCP.

5.9 The IOCP Provides the Best Benefit for the City's Large Infrastructure Investment

The City's Recommended IOCP dramatically reduces CSO discharges and addresses SSOs in an aggressive manner while attempting to keep sewer rates in check.

In Evansville, approximately 2 billion gallons of combined wastewater and stormwater leave the sewer system through 22 outfalls in a Typical Year, and overflows can occur with as little as 0.1 inch of rainfall. The City experiences approximately 50 days of CSOs in a Typical Year. A comparison of other cities reveals that the City has a CSO problem that is comparable to larger cities that have more customers over which to spread the cost of system improvements. Nevertheless, Evansville's IOCP will comply with the CWA and federal mandates and can be implemented under a schedule that balances necessary infrastructure improvements with Evansville citizens' ability to afford a large capital program. The IOCP will greatly reduce the days of CSO activations to 12 events during a Typical Year and dramatically increase the percentage of flow capture from 35 to 92 percent. These targets meet or exceed EPA's CSO control policy for addressing CSOs.

The Utility's proposed plan to reduce CSO activations from approximately 50 days to 12 days in a Typical Year also provides a cost effective approach to improve water quality for *E. Coli* bacteria. The results of the water quality model analysis reveal that the Ohio River and Pigeon Creek are impaired waterways when they reach Evansville. The water quality model shows that reduction of CSO discharges to 12 days of activation increases the number of days Pigeon Creek and the Ohio River meet the water quality standard for *E. Coli* from 112 days to 125 days during the 180-day recreational season. Reducing the days of CSO activation to less than 12 overflows in a Typical Year provides no (zero) additional days of water quality compliance for *E. Coli* in either water way.

The funding approach outlined above also allows Evansville's IOCP to addresses SSOs in an aggressive manner. Through a thorough system evaluation and analysis of overflow data, The City has identified four areas where recurring wet-weather SSOs occur. The IOCP will eliminate those SSOs, and through a robust CMOM and adaptive management approach to operate and maintain the separate sewer system the Utility will remedy any new recurring SSO locations that are identified.

Lastly, tackling the significant challenges posed by a decades-long capital program to address sewer overflows through an adaptive management approach allows Evansville to continually evaluate infrastructure improvements and sewer system characteristics to adjust and modify projects in later years of the IOCP to ensure infrastructure projects are appropriately sized and designed to meet intended goals. Such an approach allows the Utility to reap the benefits of green infrastructure and advances in technology that are almost certain to occur over the next 20-plus years.

5.10 Implementation Options

Phase 1 over the first 20 years of the 28-year Recommended IOCP is planned to achieve system-wide capture of approximately 65 percent of all wet-weather flows entering the CSS (compared to 35 percent capture in the Typical Year existing condition), with approximately 35 activations still occurring during the Typical Year. Implementing both phases of the IOCP over at least

28 years would result system-wide capture of 92 percent of all wet-weather flows entering the CSS, with 12 CSO activations occurring during the Typical Year.

Table 5-2 lists the projects that would be constructed in a 20-year-only IOCP. Note that the projects in a 20-year only IOCP are slightly different than the projects proposed in the first 20 years of a 28-year IOCP, because of the timing of funding availability and construction schedules.

Table 5-2 sets forth schedule of projects for a 20-year IOCP.

Table 5-2 20-year-only IOCP Schedule – May 31, 2035 Completion

Control Measure/Plan	Project	Addresses	Planning Level Opinions of Probable Capital Costs	Bid Date	Commencement of Construction	Achievement of Full Operation
Green Infrastructure	All	CSS Basins	16,816,830	1/1/2018	1/2019	5/31/2035
1	Bee Slough Restoration and CSO Treatment	001, 002, 004	140,985,000	1/1/2019	1/1/2020	5/31/2035
2	East WWTP Improvement Projects	103	21,183,000	1/1/2019	1/1/2020	1/1/2023
3	West WWTP Improvement Projects	123	43,590,000	1/1/2021	1/1/2022	1/1/2028
4	Pigeon Creek Interceptor Optimization and RTC Projects	012, 013, 014, 016, 017, 018, 024, 025	4,000,000	1/1/2018	1/1/2019	1/1/2023
5	7th Avenue Lift Station and CSO Storage Projects	006, 009, 015, 016, 020, 022	68,853,705	1/1/2025	1/1/2025	5/31/2035
6	Diamond Avenue CSO Control Projects	All CSOs	31,883,000	1/1/2030	1/1/2031	1/1/2034
7	Oakley Street CSO Storage Facility	018	3,872,000	1/1/2034	6/1/2034	5/31/2035
8	Oak Hill Sewer Separation Projects	011	8,441,000	1/1/2025	1/1/2026	5/31/2035
9	Downtown CSO Storage Facilities	008, 010, 038	0			
10	Delaware Street CSO Storage Facility	012, 013, 014, 017	0			
SSRMP	North Park Rehabilitation Projects	Mill Road SSOs	10,529,000	1/1/2018	1/1/2016	1/1/2023
SSRMP	North Park Capacity Projects	Mill Road SSOs	4,247,000	1/1/2030	1/1/2031	5/31/2035

Table 5-2 20-year-only IOCP Schedule – May 31, 2035 Completion

Control Measure/Plan	Project	Addresses	Planning Level Opinions of Probable Capital Costs	Bid Date	Commencement of Construction	Achievement of Full Operation
SSRMP	Lloyd Expressway Rehabilitation Projects	Lincoln Avenue SSOs	2,442,000	1/1/2021	1/1/2022	1/1/2025
SSRMP	Lloyd Expressway Capacity Projects	Lincoln Avenue SSOs	2,961,000	1/1/2024	1/1/2025	1/1/2027
SSRMP	NW/SW Rehabilitation Projects	Tekoppel Avenue SSOs	3,614,000	1/1/2022	1/1/2023	1/1/2027
SSRMP	NW/SW Capacity Projects	Tekoppel Avenue SSOs	3,054,000	1/1/2026	1/1/2027	1/1/2028
SSRMP	E-11 Rehabilitation Projects	Bergdolt Road SSOs	3,251,000	1/1/2022	1/1/2023	1/1/2026
SSRMP	E-11 Capacity Projects	Bergdolt Road SSOs	10,760,000	1/1/2027	1/1/2028	1/1/2030
SSRMP	SSS Rehabilitation Projects	SSS Basins	3,423,000	1/1/2024	1/1/2025	5/31/2025
	Proposed IOCP Cost		**383,905,535**			

Notes

1. Refer to the LTCP, SSRMP, and WWTP Facility Plan for specific project details and development of cost opinions.

2. The proposed bid, commencement of construction, and achievement of full operation dates are subject to change based on state and federal (including USACE) permitting and approval.

3. These summary tables present only capital cost since it is the key scheduling component of cost. Project O&M costs and Life Cycle cost are presented with project details in the appendixes to the LTCP.

4. Costs are in 2012 dollars

SECTION 6

Final Negotiated Plan – January 15, 2016

This section describes the Utility's Negotiated Plan reached via agreement with EPA and IDEM for meeting CWA objectives for reducing sewer overflows. Like the Recommended Plan, the Negotiated Plan addresses the community's highest priorities and balances the overall plan benefits with the Utility's financial capability to schedule and achieve the highest benefits as expeditiously as possible. It represents the best level of control possible for the available public investment. This plan is based on the alternatives evaluation described in Section 3, the financial impacts and affordability considerations discussed in Section 4, and the input received from the CAC in 2012 and 2013. Summaries of the recommended projects are provided in this section, and specific and detailed information on each of the projects can be found in the technical documents integrated by this IOCP (specifically, the LTCP, SSRMP, and WWTP Facility Plan).

6.1 Overview of the Negotiated IOCP

The City's IOCP will address and dramatically reduce the number of CSOs that occur in the City and eliminate chronic, recurring SSO locations. The total cost of the IOCP is projected at $716 million over 25 years.

The Utility will invest approximately $52 million to eliminate chronic SSOs occurring in four areas of the separate sanitary system. Known defects and bottlenecks in the separate system will be remedied to eliminate these SSOs. Through the Utility's ongoing inspection and maintenance plan, other areas that experience capacity-related SSOs will be evaluated and addressed through an adaptive management approach described in Section 2. Using this approach, the removal of stormwater inflow and infiltration from the system and sewer line rehabilitation will be a priority for the Utility to prevent SSOs.

When complete, the IOCP will address SSOs, protect water quality, and reduce CSOs from approximately 50 activations to 4 activations during a Typical Year, and will increase the combined sewer system's capture of combined sewage by volume from 35 percent today to 98 percent when implementation is complete. EPA's CSO Control Policy seeks to have cities reduce overflows to 0 to 12activations per year and increase percent capture to 75 to 100 percent. The CWA requires protection of water quality. Therefore, the proposed LTCP portion of the ICOP meets the regulatory thresholds set forth by EPA and the CWA. It is worth noting that the complete elimination CSOs is cost prohibitive and simply not practical, so residual CSOs will occur during some large storm events.

6.2 Negotiated IOCP Projects

The negotiated plan focuses on these major initiatives:

- Remedy the odor and aesthetic problems in Bee Slough through the control and treatment of CSO discharges into Bee Slough and the redirection of East WWTP treated effluent from Bee Slough to the Ohio River during high river conditions.

- Reduce the inflow of stormwater into the sewer systems through the construction of green infrastructure projects, partial sewer separation projects that include green infrastructure elements, and through I/I reduction projects in the separate sanitary sewer system.
- Increase treatment of captured wet-weather flows at the East WWTP by expanding the secondary treatment process capacity to 40 mgd to match the capacity of the existing primary treatment process.
- Increase treatment of captured wet-weather flows at the West WWTP by constructing a new, expanded Headworks Facility, eliminating remaining hydraulic bottlenecks within the treatment processes, and constructing flow equalization facilities.
- Replace the 7th Avenue Lift Station to increase its pumping capacity and increase its reliability through the installation of redundant equipment and a backup power source, and construct a CSO storage and treatment facility at this location to capture and treat CSO discharges from the 7th Avenue East, Fulton Street, Franklin Street, and 9th Street CSOs.
- Increase capture of combined wet-weather flows by raising overflow weirs in the diversion structures throughout the entire system; by cleaning the Pigeon Creek Interceptor; and by implementing real-time control strategies to optimize the operation of the Pigeon Creek Interceptor and flood control system, the 7th Avenue Lift Station, and the West WWTP.
- Control CSO discharges to Pigeon Creek through construction of CSO storage facilities at the Diamond Avenue, Oakley Street, Delaware Street, and Oak Hill CSOs.
- Control CSO discharges to the Ohio River through construction of two CSO storage facilities in the downtown area to capture and control CSO discharges from the Dress Plaza, Chestnut Street, and Oak/Riverside CSOs.
- Optimize the Ohio Street and Broadway Avenue Interceptors to increase capture and treatment of CSO discharges from the St. Joseph Avenue CSO.
- Eliminate SSO occurrences at the four priority SSO locations through a combination of infiltration/inflow reduction and increased collection system conveyance capacity.
- Enhance the Utility's precipitation, flow, and overflow monitoring systems to continuously track system performance and the results of the implementing the proposed overflow control and inflow reduction projects.

Implementation of the IOCP will not negatively affect environmental justice populations. Although projects in the IOCP are spread throughout the community, much of the early work will occur near and focus on remedying Bee Slough, which is adjacent to economically disadvantaged neighborhoods. Additionally, the Renew Evansville Citizens Advisory Committee has not identified any environmental justice issues.

6.3 Green Infrastructure Program

The Utility has completed an investigation of a range of potential green infrastructure programs and projects throughout the combined sewer area, with a particular focus on the City's downtown and efforts to augment the sewer separation approaches discussed previously. The investigation examined opportunities to incorporate green infrastructure into a variety of public infrastructure improvements and in keeping with other planning initiatives for redevelopment

and beautification of the City's downtown. As a result, the Utility has identified a program of green infrastructure improvements that are consistent with other City planning objectives and that leverage available funding across multiple City departments. Within the downtown area and nearby residential neighborhoods, green infrastructure includes street improvements to replace all or a portion of the conventional pavement with porous pavement and other streetscape green technologies. In addition, there are large public parking lots and some City parks that present opportunities to include green infrastructure to intercept, divert, and/or capture stormwater runoff before it can enter the CSS. In addition to porous pavement, the green street concept includes porous sub-grade material and underdrain systems intended to both convey and detain stormwater runoff. The outlet for this green street concept is a dry well that redirects stormwater discharges to a buried layer of pervious sand and gravel. In areas of the City where the infiltration capacity of the surrounding soils is lower, the green infrastructure improvements would discharge residual flows through an underdrain back to the CSS. Portions of the City are underlain with the porous Ohio River sand aquifer, which has the potential to accommodate infiltration approaches.

Green infrastructure improvements optimize the performance of the proposed sewer separation and provide inherent water quality benefits to those projects. In addition, the green street concept with a dry well is capable of significant reductions in stormwater runoff volume to the CSS in areas where there is no suitable storm system outfall. In the downtown areas of the City and in the adjacent historic neighborhoods, green infrastructure improvements provide an opportunity to meet the overall IOCP objectives while also providing other intrinsic value to the community. The Utility has established a green infrastructure participation program and will continue to interact with City departments, private industry, and neighborhoods on a regular basis to identify opportunities where green infrastructure can be incorporated into projects that would reduce CSOs and provide other benefits. In addition, the green street concept is expected to create additional incentive for the community to expand on its redevelopment and street enhancement programs. The Utility's program to implement green infrastructure will include a scoring system that values each potential project based on cost and other benefit factors that determine prioritization.

To date, the Utility has moved forward with green infrastructure projects at Professional Plaza and the YMCA/Evansville Building Authority parking lot that will remove 4.5 million gallons of rainwater from the combined sewer system in downtown Evansville.

6.4 Negotiated Plan CSO Control Measures

The CSO projects proposed in the plan are shown in Figure 6-1 and summarized in the following sections.

6.4.1 Control Measure 1 – Bee Slough Restoration and CSO Treatment

The plan to remedy the odor and aesthetic problems in Bee Slough is shown on Figure 6-2 and includes the design and construction of the following projects:

- Drainage pipelines between the concrete channel and the East WWTP Headworks Facility to provide the ability to send standing water in Bee Slough to the WWTP for treatment.
- A pump station to pump treated effluent from the East WWTP to the Ohio River during periods of high river levels (instead of allowing it to back up and collect in Bee Slough when the K-4 Levee Pump Station is being utilized).

- A wetland treatment system and associated pump station and disinfection system to capture and treat discharges from the Kentucky Avenue CSO. Effluent from the wetland treatment system will achieve the equivalent of primary treatment and will be disinfected to meet or exceed water quality standards.
- Pipes and drains that interconnect the wetland pump station, disinfection facility, and East WWTP to maximize the use of the East WWTP for treating captured CSO, and to allow for recirculation of water through the wetland treatment system to increase wetland treatment performance.
- A combined storage/treatment facility (VTU) for capture, treatment, and disinfection of CSO discharges from the Cass Avenue CSO, and a pipeline that captures CSO discharges from the Adams Street CSO and sends the captured flow to this facility.

The project will be subject to review and approval by and coordination with USACE and could be subject to changes based on their review and approval process. As proposed, the Bee Slough Remediation Projects are expected to treat 100 percent of the overflows in the Typical Year.

To date, the Bee Slough advanced facility plan and geotechnical soil boring data collection regarding this control measure are complete, and the Utility has begun preliminary design of the relief sewer from CSO 004 to CSO 002.

6.4.2 Control Measure 2 – East WWTP Improvement Projects

In early 2012, the Utility completed installation of a second fine screen and fourth pump in the Headworks Facility, which expanded the headworks capacity from 20 to 40 mgd. Since that time, the Utility has completed WWTP stress testing and determined that up to 50 mgd can be treated by the primary treatment process and up to 28 mgd can be treated by the secondary process. The existing disinfection process has the capability of treating up to 32 mgd.

Control Measure 2 upgrades and expands the secondary treatment process capacity to 40 mgd. This was a change from the Recommended Plan for the East WWTP, which included expansion of treatment capacity to 40 mgd by means of PE Bypass infrastructure. The negotiated plan does not involve utilizing PE Bypass infrastructure. The plan also includes the modification of the CSO 103 diversion structure weir (the East WWTP bypass point) to completely divert wet-weather flows into the East WWTP for treatment during the Typical Year. Figure 6-3 shows the planned improvements.

6.4.3 Control Measure 3 – West WWTP Improvement Projects

The stress tests completed during summer 2012 determined that the West WWTP can treat up to 40 mgd through the primary treatment process and that the secondary treatment process has the capability to treat up to 47 mgd. The tests also determined that the existing disinfection process has the capability of treating up to 56 mgd. Historically, the Utility has limited headworks pumping to less than 40 mgd due to the primary process's maximum capacity, and engineering analysis has determined that it is unlikely that the existing headworks has the ability to pump flows much higher than 40 mgd. A further complication is that pumping at these higher flow rates negatively affects the influent sewer system hydraulics, because of the need to maintain high, flooded wetwell levels that are outside the bounds of the facility's design conditions. This situation, in combination with the single fine screen in the Headworks Facility, with only a coarse bar screen for backup, warrants a replacement Headworks Facility that is

purpose-built for these conditions, that contains the appropriate redundancy in equipment, and that has provisions for maintaining consistent influent sewer levels during wet-weather events.

The IOCP would construct a new Headworks Facility designed and constructed to reliably treat up to the 45 mgd peak secondary treatment capacity. One change from the Recommended Plan for the West WWTP is the elimination of the primary treatment bypass. Consequently, the Utility agreed to raise the primary clarifier weirs and construct curb walls for the primary clarifier influent channel. The Negotiated Plan therefore includes these changes along with upgrades originally recommended to bring treatment capacity to 45 MGD – the new headworks facility, conversion to liquid chlorine for disinfection, and upgrades to the existing RAS system.

Figure 6-4 shows the planned improvements.

6.4.4 Control Measure 4 – Pigeon Creek Interceptor Optimization and Real-Time Control Projects

The Utility has already started the process of optimizing the Pigeon Creek Interceptor system and maximizing its capability to capture and treat more wet-weather flow. Historically, operation of the levee pump stations and wet-weather flow control gates has focused on preventing flooding on the City side of the flood protection system, and this focus on flood prevention has generally taken priority over CSO control. Consequently, those operating rules have been universally applied to flow control gate operations and the Utility believes that opportunities exist to adjust operations to capture additional wet-weather flow without causing flooding. Therefore, in May 2012, the Utility launched a project to collect and analyze flow and precipitation data in the Pigeon Creek Interceptor in conjunction with levee gate and pump station operational data to better understand the in-system conditions in the interceptor during rain events. This project includes the development of a real-time decision support system to facilitate and direct operational decisions with the goal of capturing more wet-weather flow in the system without causing surface flooding or backups into homes or businesses. It also includes a task to identify potential opportunities to store wet-weather flow in the trunk sewer tributary to the Pigeon Creek Interceptor, and with the same requirement that no surface flooding or backups occur as a result.

Proposed IOCP Projects

renewEVANSVILLE

CSO Inventory

CSO	NAME	RECEIVING WATER	WWTP SERVICE AREA
001	Kentucky Avenue	Bee Slough	East
002	Cass Avenue	Bee Slough	East
103	Junction Box Prior to WWTP Headworks	Ohio River	East
004	Adams	Bee Slough	East
006	Fulton Avenue Pumping Station	Ohio River	West
008	Chestnut Street	Ohio River	East
009	7th Avenue West	Ohio River	West
010	Dress Plaza	Ohio River	East
011	Weinbach Lift Station (Oakhill Road)	Pigeon Creek	East
012	Maryland Street - West Bank	Pigeon Creek	West
013	Delaware Street	Pigeon Creek	West
014	Dresden Street	Pigeon Creek	West
015	7th Avenue East	Ohio River	West
016	Franklin Street	Pigeon Creek	West
017	6th Avenue	Pigeon Creek	West
018	Oakley Street	Pigeon Creek	West
020	9th Avenue	Ohio River	West
022	St. Joseph Avenue	Ohio River	West
123	West Plant CSO	Ohio River	West
024	Baker Street	Pigeon Creek	West
025	Diamond Avenue	Pigeon Creek	West
038	Oak / Riverside	Ohio River	East

Map Legend

East Service Area
- Separate Sewer Area
- Combined Sewer Area

West Service Area
- Separate Sewer Area
- Combined Sewer Area

- Wastewater Treatment Plant
- Priority SSO Location
- CSO
- Storage Basin
- High Rate Treatment Unit
- Sewer Rehab Projects
- City Limits

Mill Road SSO Group

Bergdolt Road SSO

Oakley CSO Control Facility
Storage Basin

Relief from Baker to Diamond Ave
Storage Basin and Treatment at Diamond Ave.

Delaware, Maryland, Dresden & 6th Avenue CSO Control Facility
Relief sewer from 6th Ave, Dresden, and Maryland to Storage Basin at Delaware

St. Joesph CSO Control Facility
System Optimization

Dress Plaza CSO Control Facility
Storage Basin

Oakhill CSO Control Facility
Storage Basin

Chestnut & Oak-Riverside CSO Control Facility
Relief sewer from Chestnut to storage basin at Oak-Riverside

Lincoln Avenue SSO Group

Tekoppel Avenue SSO

WEST WWTP

Franklin, 9th Ave, Fulton, and 7th Ave CSO Control Facility
Relief sewer from Franklin, 9th Ave, Fulton, to Storage Basin and treatment unit at 7th Ave

EAST WWTP

Howell Park CSO Control Facility
Storage Basin

Bee Slough
See Proposed Plan figures

Figure 6-1
Negotiated Plan
Integrated Overflow Control Plan
January 15, 2016

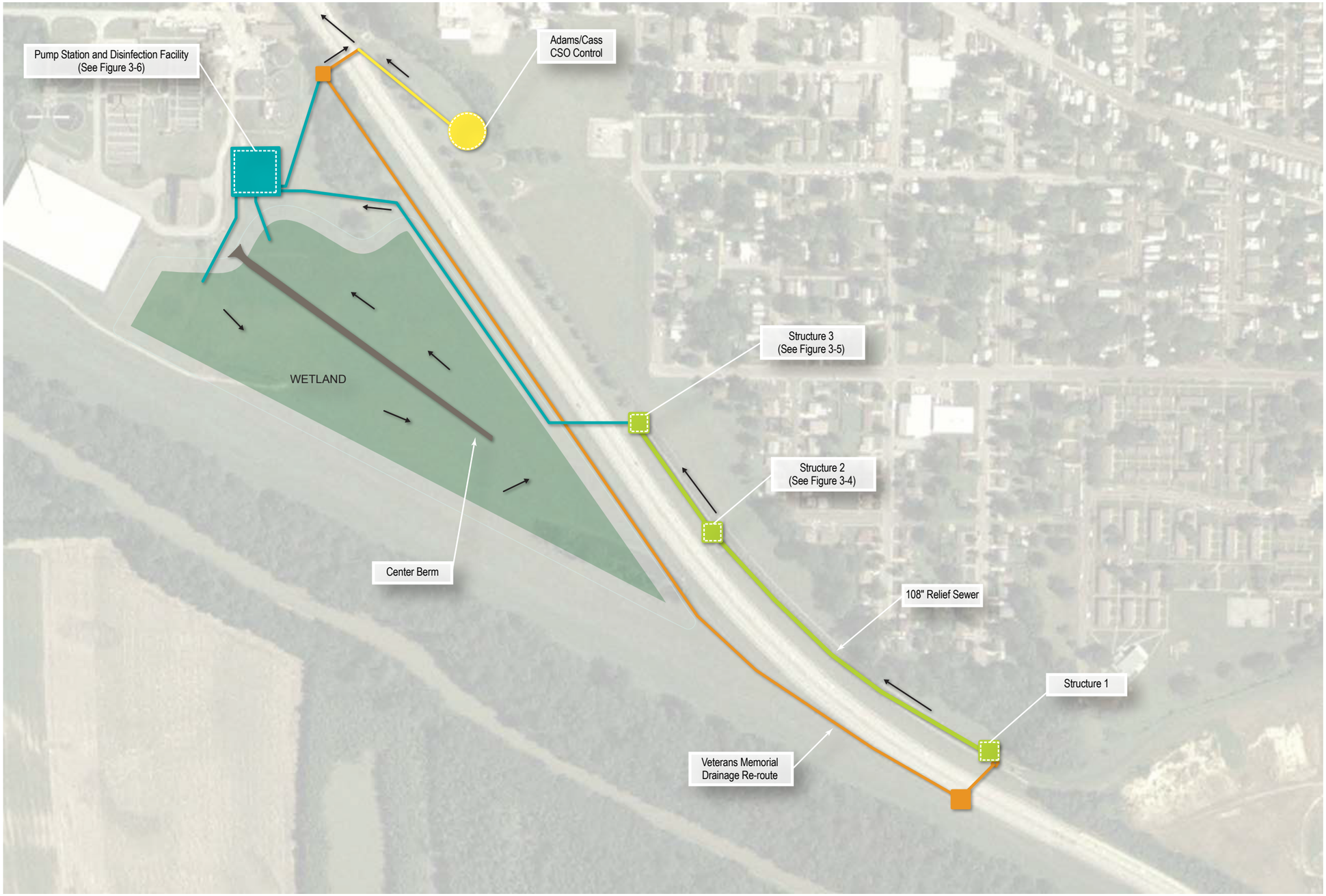


FIGURE 6-2
Bee Slough Control Measure Overview
January 15, 2016

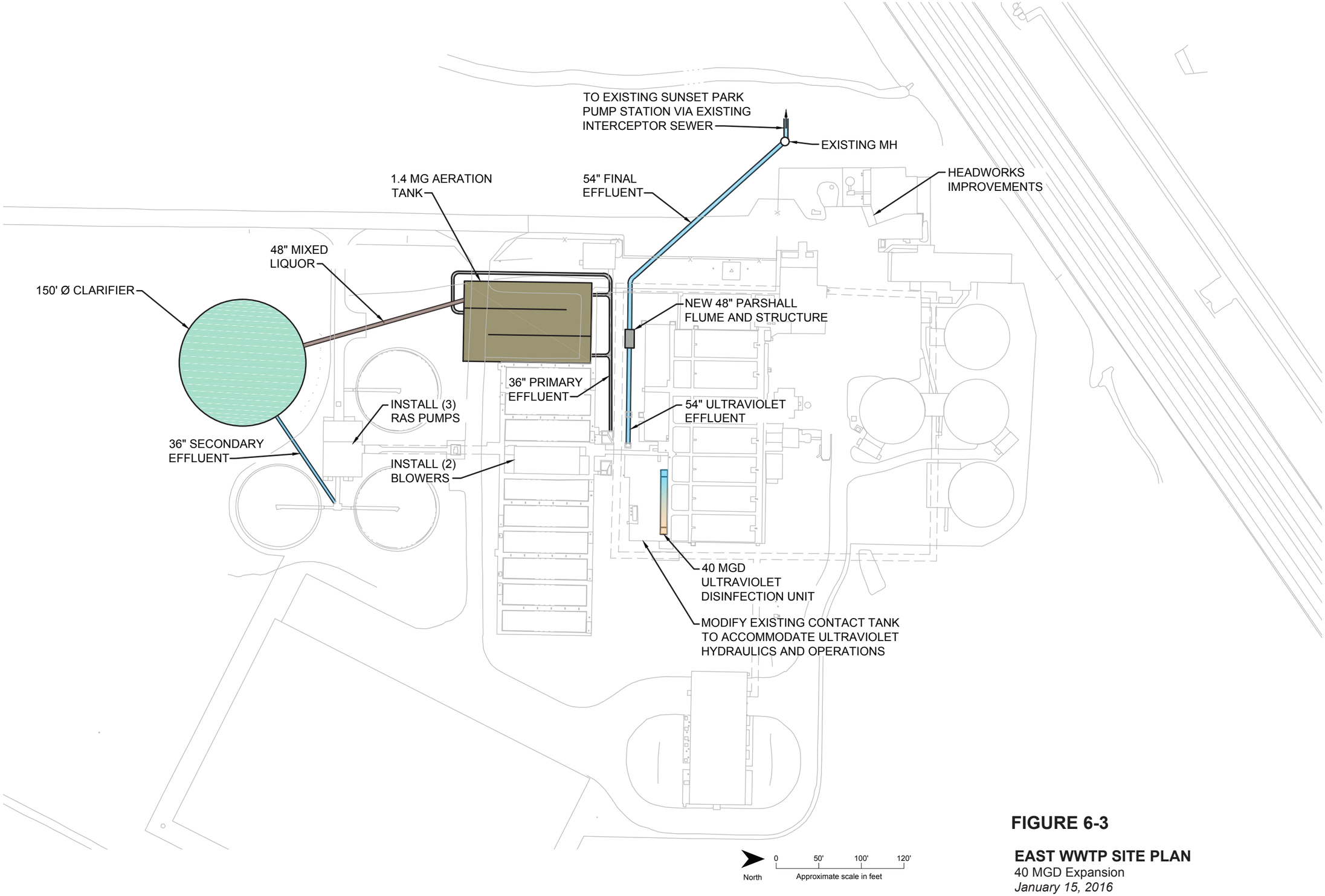


FIGURE 6-3

EAST WWTP SITE PLAN
40 MGD Expansion
January 15, 2016

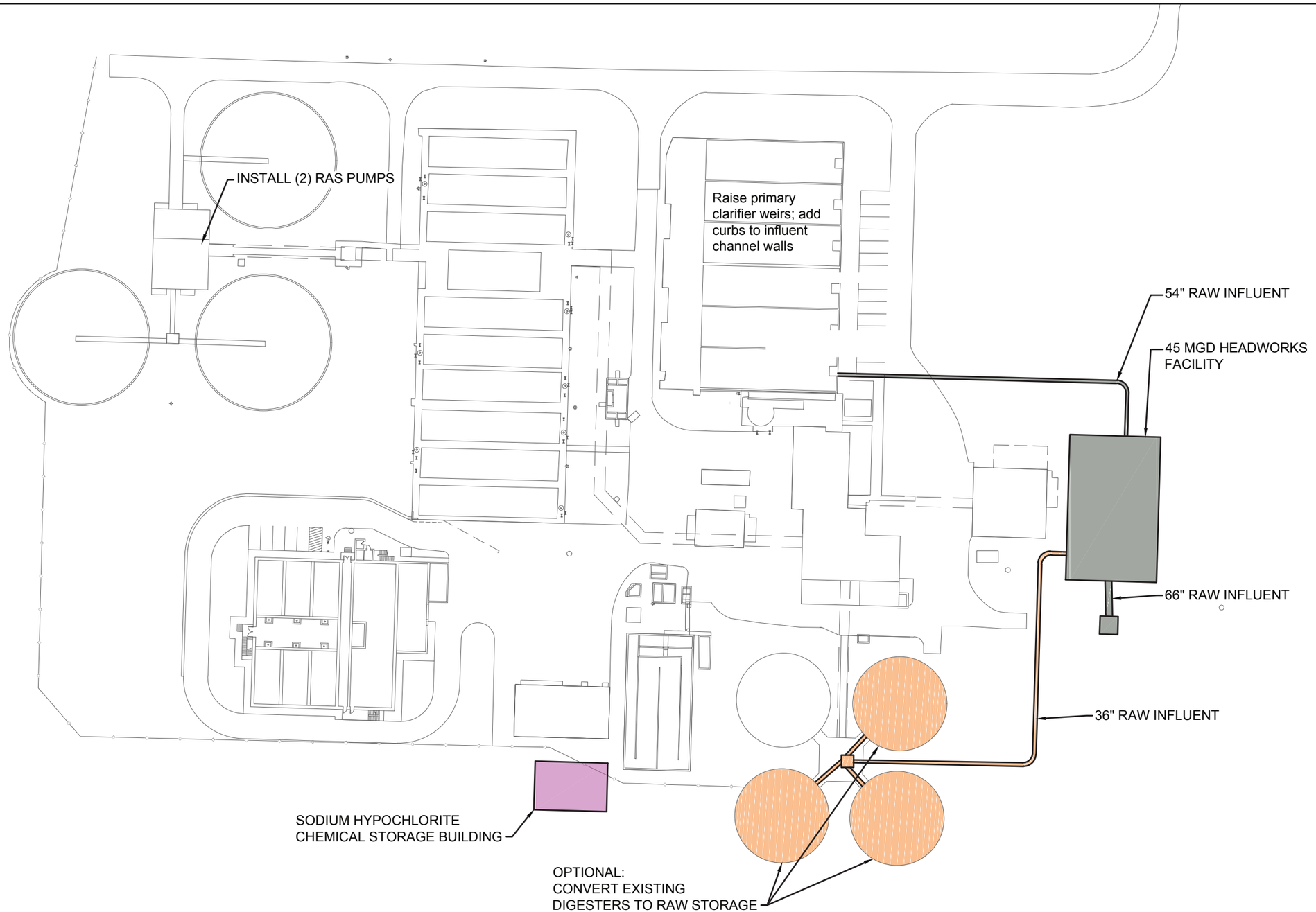
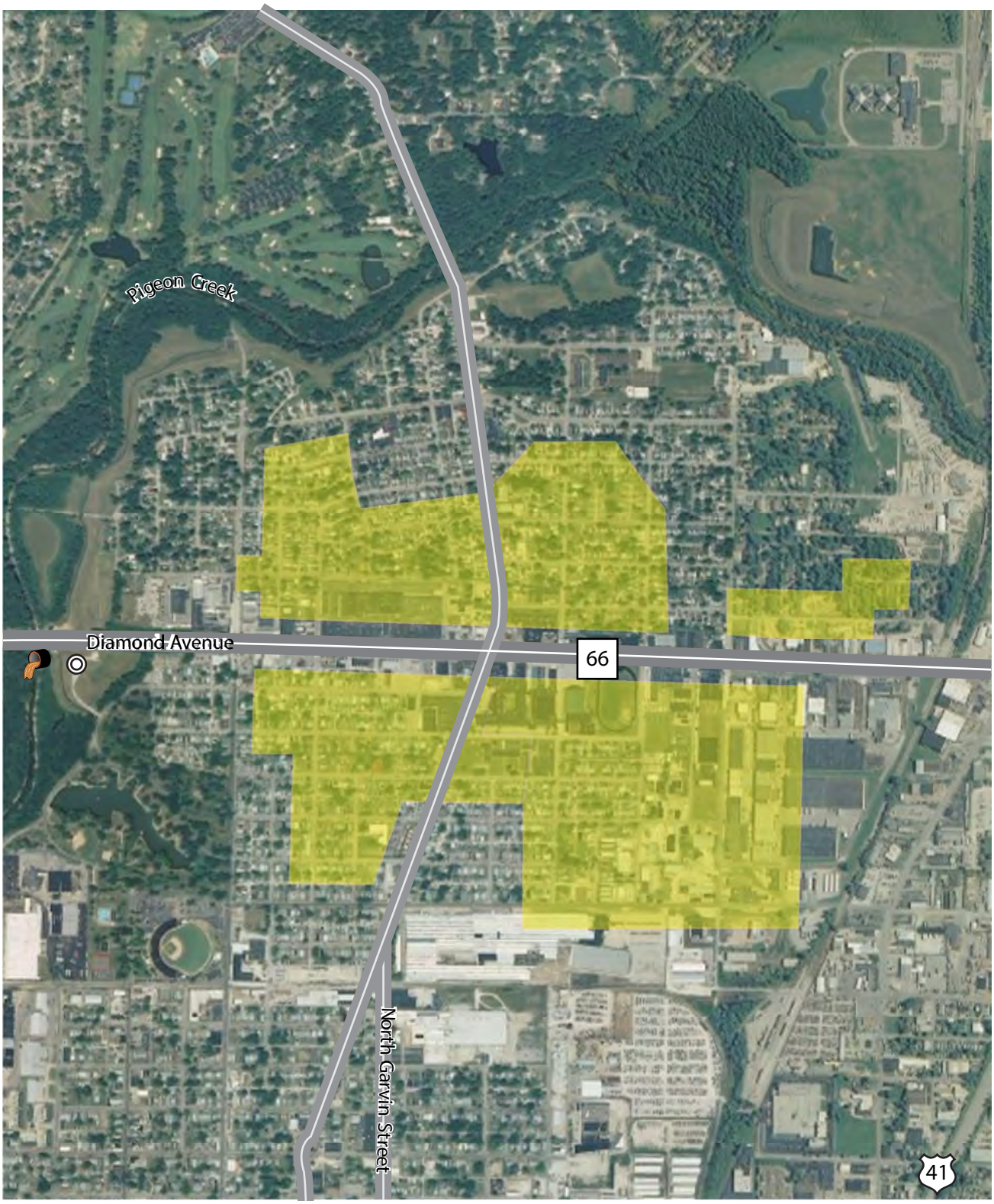


FIGURE 6-4
WEST WWTP SITE PLAN
45 MGD Expansion
January 15, 2016



Legend

CSO

Storm Sewer Project Limits

Levee Pump Station

1,000 Feet

North

Figure 6-5
Diamond Avenue Storm Sewer Separation Project Boundaries
Integrated Overflow Control Plan
January 15, 2016

Other key information used to develop this project was the condition of the Pigeon Creek Interceptor. During summer 2011, the Utility commissioned an inspection of this critical piece of sewer infrastructure using sonar and other state-of-the-art inspection technologies to identify sediment levels in the pipeline, structural defects that may present a risk for pipe failure, and other structural attributes that may impede flow. As a result of this inspection, the Utility will be moving forward with a major cleaning project to remove the sediment in the pipe.

Future phases of this project may include making modifications to the diversion structures, including flow control and better integrating flood protection infrastructure with CSO capture strategies. In addition, after cleaning the interceptor, the Utility will continue to make refinements to the West system hydraulic model to right-size IOCP Phase 2 CSO control projects.

6.4.5 Control Measure 5 – 7th Avenue, Franklin Street, Fulton Avenue, 9th Avenue, and St Joseph Avenue CSO Control Projects

The 7th Avenue Lift Station plays a vitally important role in transferring millions of gallons of wastewater to the West WWTP. Currently, the station has no onsite backup power system and only a single screen with no redundancy. This lack of backup equipment poses a high risk for large sewer overflows in the event of a power interruption or problem with the screen. To reliably capture and pump wet-weather flows in the future, the Utility determined through its analyses of this facility that it needs to be replaced. The recommended plan would replace the 7th Avenue Lift Station, and it would be designed and constructed to ultimately have a firm pumping capacity that will allow the Utility to pump 45 mgd to the West WWTP and to pump wet-weather flow to an onsite storage and high-rate treatment facility. Effluent from the treatment facility will achieve the equivalent of primary treatment and will be disinfected to meet or exceed water quality standards. Screening, grit removal, and backup power would be included as well.

In addition to the lift station, storage, and treatment facilities, Control Measure 5 includes:

- Construction of relief sewers from the Fulton Avenue, 9th Avenue, and Franklin Street CSOs to the proposed 7th Avenue Lift Station.
- Raising the St Joseph Avenue CSO regulator weir to capture more wet-weather flow and send it to the West WWTP for treatment.

6.4.6 Control Measure 6 – Diamond Avenue/Baker Street Sewer Separation and CSO Control Projects

One of the key features of IOCP is the Utility's focus on reducing stormwater runoff into the CSS at key locations to reduce the size and cost of "end of pipe" CSO control facilities. The City's 2007 Stormwater Master Plan (Clark Dietz, Inc. 2007) identified several partial sewer separation projects in the Diamond Avenue subbasin that direct street drainage into the 90-inch storm sewer that runs east to west along Diamond Avenue. Figure 6-5 shows the projects' boundaries. Each of the projects will include green infrastructure components to provide water quality treatment for the stormwater-borne pollutants. These projects will free up significant capacity in the CSS to convey, store, and treat additional combined flows from other subareas.

In addition to the sewer separation projects, control of the CSOs from the Diamond Avenue and Baker Street CSOs will be accomplished by constructing an underground CSO storage facility beneath the Diamond Avenue levee pump station equalization basin and pumping CSO flow

from the Baker Street CSO to the storage facility. CSO flows that exceed the capacity of the storage facilities will be treated at a high-rate treatment facility, disinfected, and discharged to Pigeon Creek. Effluent from the treatment facility will achieve the equivalent of primary treatment and will be disinfected to meet or exceed water quality standards. Stored CSO will be pumped into the Pigeon Creek Interceptor and routed to the West WWTP for treatment.

6.4.7 Control Measure 7 – Oakley Street CSO Storage Facility

CSO flow from the Oakley Street CSO will be captured in an underground CSO storage facility near the Oakley Street CSO diversion structure. Stored CSO will be drained by gravity into the Pigeon Creek Interceptor and routed to the West WWTP for treatment.

6.4.8 Control Measure 8 – Oak Hill Sewer Separation and CSO Storage Facility

This control measure includes the Akin Park, State Hospital, Boeke Road Outfall, Weinbach and Keck sewer separation projects from the 2007 Stormwater Master Plan (Clark Dietz, Inc., 2007) and an underground CSO storage facility that will be located near the Oak Hill CSO outfall. Stored CSO will be pumped into the adjacent sewer collection system and routed to the East WWTP for treatment. The areas to be separated are described and presented within the 2007 Stormwater Master Plan.

6.4.9 Control Measure 9 – Downtown CSO (Oak/Riverside, Chestnut, and Dress Plaza) Control Projects

Control Measure 9 includes construction of two underground storage facilities in the downtown area. One facility will capture wet-weather flows in the Dress Plaza CSS basin and the other will be located within the Oak/Riverside CSS basin; flows from the Chestnut CSS basin will be routed to it via a proposed relief sewer. Stored CSO will be pumped into the adjacent collection system and routed through the Riverside Interceptor to be treated at the East WWTP.

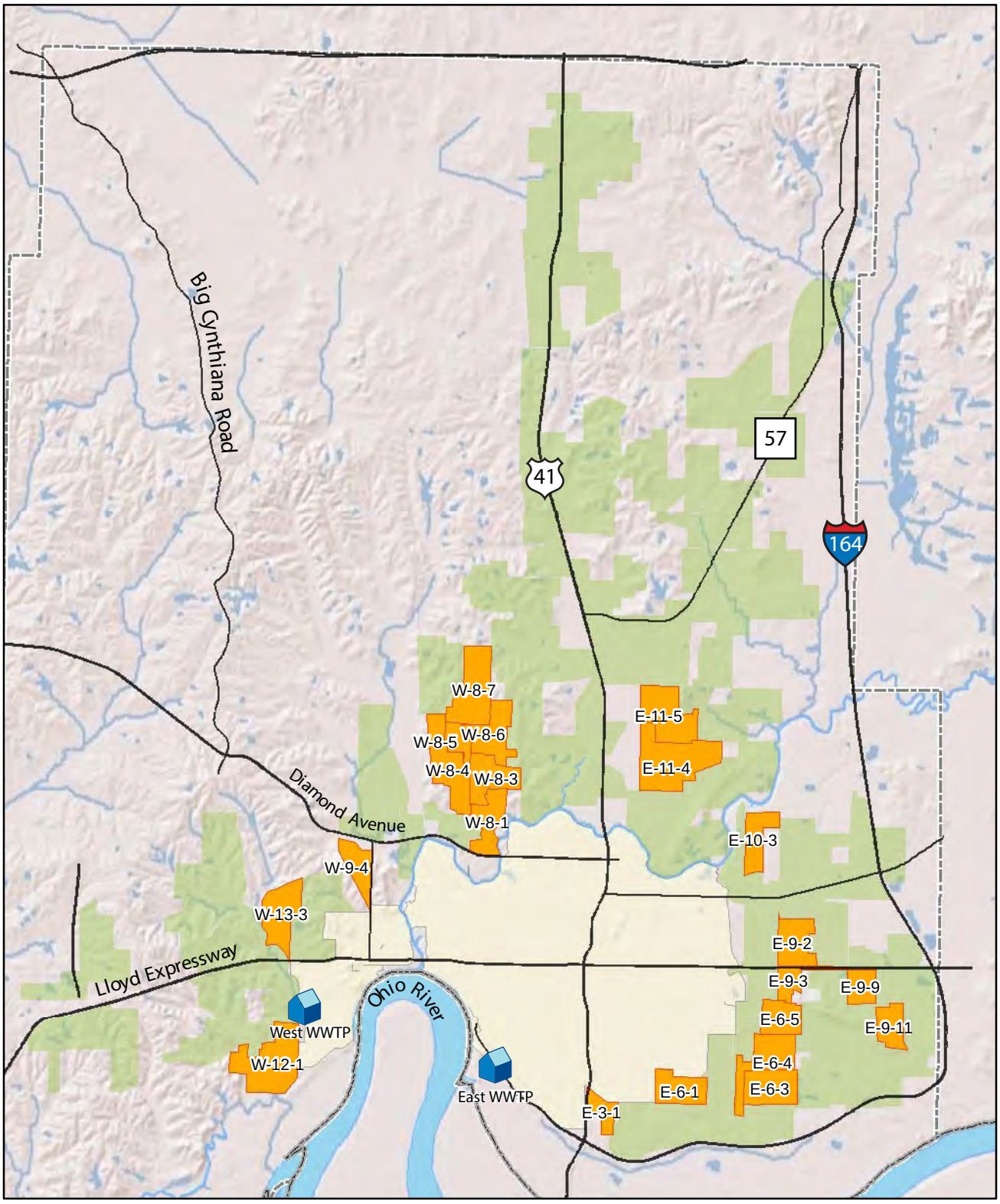
The green infrastructure program described above will be primarily focused in the downtown area to reduce the size and cost of Control Measure 9 or to attempt to eliminate the storage projects altogether.

6.4.10 Control Measure 10 – 6th Avenue, Dresden Street, Maryland Street, and Delaware Street CSO Control Projects

In this control measure, a CSO storage facility will be constructed near the Delaware Street CSO outfall. A relief sewer system will capture CSO from the Maryland Street, Dresden Street, and 6th Avenue CSOs and route it to the proposed Delaware Street CSO Storage Facility. Stored flow from the CSOs will be pumped into the Pigeon Creek Interceptor and routed to the West WWTP for treatment.

6.5 SSRMP Projects

During the sewer system evaluation projects conducted in 2010 and 2011, the Utility investigated approximately 20 percent of the separate sanitary sewer system to identify sources of stormwater inflow, structural defects in the sewers, and sources of groundwater infiltration. The SSRMP describes in detail the projects proposed to be implemented in the investigation areas to reduce stormwater inflow, repair broken manholes and pipes, and restore sewer mains using trenchless technologies. Figure 6-6 shows the areas where these projects are proposed.



Legend

- Wastewater Treatment Plant
- Sanitary Sewer Rehabilitation Project Areas
- Separate Sanitary Sewer Area
- Combined Sewer Area
- Hydrography
- Major Road
- Indiana State Boundary

6,000 Feet

North

Figure 6-6
Evansville Sewer Rehabilitation
Integrated Overflow Control Plan
January 15, 2016

Using this analysis, the Utility identified locations that experienced recurring, wet weather-related SSOs and should therefore be included in the SSRMP as well as the projects and schedule for eliminating the SSO events at those locations. Locations that currently experience wet-weather related SSOs were further analyzed to determine whether the locations experience recurring SSOs and whether the SSS models predict such an occurrence. Maintenance-related SSOs caused by problems in the Utility's system are corrected immediately upon discovery and typically do not recur. Any locations with two or more maintenance-related SSOs are identified, and the Utility's collection systems maintenance teams address these locations through the Repeat Blockage Cleaning and Inspection Program conducted under the Utility's CMOM program. Consequently, maintenance-related SSOs are not included in the SSRMP. This analysis resulted in the identification of four recurring SSO locations that will require system improvements to provide additional capacity to convey wet-weather flows. The locations, in order of priority, are:

1. 1st Avenue and Mill Road
2. Lincoln Avenue near Plaza Drive
3. Tekoppel Avenue near the West WWTP
4. Bergdolt Road near Oak Hill Road

The four recurring SSOs listed above will be eliminated for storms up to and including the 10-year storm. Volume 3, the SSRMP, provides additional detail on the approach and project phasing for SSO elimination.

The Utility takes an adaptive management approach to address any future locations with recurring SSOs. The Utility will evaluate SSO reports to identify areas that may experience recurring SSOs in the future, and any such locations will be addressed by the Utility's CMOM program and potentially through additional capital projects. Any new recurring SSOs discovered will be eliminated for storms up to and including the 2-year storm.

6.6 Capital Costs and Implementation Schedule

Table 6-1 provides planning-level opinions of probable capital costs for the IOCP projects and the 25-year implementation schedule. It includes the key dates required by the Decree: the bid date, commencement of construction, and achievement of full operation. Figure 6-7 represents a time benefit graph depicting the capital expenditures over time relative to the benefits achieved. Figure 6-1 represents a map with the locations of the IOCP projects.

6.7 Adaptive Management Implementation Approach

As previously described, the Utility is taking an adaptive management approach to the IOCP. This approach to implementing the IOCP is being used because the projects proposed to be conducted in the early years of the IOCP will reduce stormwater inflow into the sewer systems or redirect stormwater inflow out of the sewer systems. This will reduce the size and cost of new overflow control infrastructure projects proposed in later years. Additionally, the uncertainty inherent in any computer model used to size projects needs to be refined and recalibrated over time to ensure the right-sizing of projects.

Table 6-1 Negotiated 25-year IOCP Remedial Measures, Design Criteria, Performance Criteria, and Implementation Schedule

Control Measure/Plan	Project	Outfall Number or Overflow	Name	Description	Narrative Description of Proposed Design and Performance Criteria		Implementation Schedule			Planning Level Opinions of Probable Capital Cost
					Design Criteria	Performance Criteria	Bid Date	Commencement of Construction	Achievement of Full Operation	
Green Infrastructure	**All**	**CSS Basins**					**1/1/2016**	**1/1/2017**	**12/31/2039**	**$ 18,036,000**
1	Bee Slough Restoration and CSO Treatment	001	Kentucky Ave	Wetlands treatment system	Constructed wetland treatment with a minimum storage volume of 42 million gallons. This volume is for the storage basin only, and excludes conveyance sewers and dewatering sewers. Conveyance pump station with minimum sustained design capacity of 198 million gallons per day. Relief sewer with a minimum diameter of 108 inches. The hydraulic loading rates for all projects shall not exceed any manufacture's recommendation.	0 CSOs and 0 gallons of residual overflow volume under Typical Year conditions. Treated discharges shall meet a 50% TSS reduction by mass standard, with a flow weighted basis and 12-Month Rolling Average reported each month. See Appendix H for monitoring and reporting requirements.	1/1/2021	1/1/2022	1/1/2025	$ 151,206,000
		002	Cass Ave	Vertical treatment unit (VTU)	Satellite vertical treatment unit that meets the performance criteria, including disinfection, with a minimum sustained design capacity of 226 million gallons per day. The hydraulic loading rate shall not exceed the manufacture's recommendation.	0 CSOs and 0 gallons of residual overflow volume under Typical Year conditions. Treated discharges shall meet a 50% TSS reduction by mass with a flow weighted basis and 12-Month Rolling Average reported each month. See Appendix H for monitoring and reporting requirements.	1/1/2030	1/1/2031	1/1/2033	
		004	Adams	Relief sewer to Cass Ave CSO control facility	Relief sewer to the Cass Avenue Vertical Treatment with a minimum diameter of 72 inches.	0 CSOs and 0 gallons of residual overflow volume under Typical Year conditions.	1/1/2030*	1/1/2031*	1/1/2033*	
		001, 002, 004	Bee Slough	Bee Slough Drainage Pipeline	Drainage pipelines between the concrete channel and the East WWTP Headworks Facility to provide the ability to send standing water in Bee Slough to the WWTP for treatment.	0 CSOs and 0 gallons of residual overflow volume under Typical Year conditions. Maximize flow to the East WWTP after wet weather events.			1/1/2018	
		103	East WWTP	Effluent Pump Station	Conveyance pump station with minimum sustained design capacity of 68 million gallons per day.	Eliminate CSO overflow point. All East WWTP effluent pumped to the Ohio River and not to Bee Slough during high river levels.	1/1/2019	1/1/2020	1/1/2023	
		001, 002, 004	Bee Slough	Akin Park Partial sewer separation	Partial sewer separation projects in sewerage tributary to Bee Slough/East WWTP.	No SSOs pursuant to Consent Decree paragraph 12, subject to Consent Decree paragraph 69.			1/1/2020	
2	East WWTP Improvement Projects	103	East WWTP	Expand peak Treatment Capacity	Expand secondary treatment system to achieve a minimum sustained capacity of 40 million gallons per day through the entire East WWTP.	0 CSOs and 0 gallons of residual overflow volume under Typical Year conditions. No bypasses of any portion of East WWTP.	1/1/2019	1/1/2020	1/1/2023	$ 40,001,000

Table 6-1 Negotiated 25-year IOCP Remedial Measures, Design Criteria, Performance Criteria, and Implementation Schedule

Control Measure/Plan	Project	Outfall Number or Overflow	Name	Description	Narrative Description of Proposed Design and Performance Criteria		Implementation Schedule			Planning Level Opinions of Probable Capital Cost
					Design Criteria	Performance Criteria	Bid Date	Commencement of Construction	Achievement of Full Operation	
3	West WWTP Improvement Projects	123	West WWTP	Expand peak primary treatment capacity; Storage Basin in Howell Park with overflow, Gravity in and out of Storage	Expand West WWTP headworks and primary treatment to achieve a minimum sustained capacity of 45 million gallons per day through the entire West WWTP.	0 CSOs and 0 gallons of residual overflow volume under Typical Year conditions.	1/1/2019	1/1/2020	1/1/2023	$ 46,750,000
		123	Howell Park Storage	Construct storage basin at Howell Park	Storage basin with a minimum storage volume of 6.1 MG. This volume is for the storage basin only, and excludes conveyance sewers and dewatering sewers.	0 CSOs and 0 gallons of residual overflow volume under Typical Year conditions.	1/1/2019*	1/1/2020*	1/1/2023*	
4	Pigeon Creek Interceptor Optimization and RTC Projects	012, 013, 014, 016, 017, 018, 024, 025	PCI	Complete cleaning and inspection of the PCI	Full interceptor capacity available to convey dry and wet weather flow to the West WWTP	Convey total capacity of the interceptor to the WWTP and maximize wet weather storage capacity within the interceptor.	1/1/2017	1/1/2018	1/1/2022	$ 4,290,000
5	7th Avenue, Franklin Street, Fulton Avenue, 9th Avenue, and St. Joseph Avenue CSO Control Projects	006	Fulton Avenue Pump Station	Send to 7th Ave East. Use existing pipe	Eliminate CSO overflow point	Eliminate CSO overflow point. All wastewater will be conveyed to new 7th Avenue Pump Station using existing pipe.			1/1/2036	$ 121,880,000
		009	7th Avenue West	Eliminated	Eliminate CSO overflow point	Eliminate CSO overflow point. All wastewater will be conveyed to new 7th Avenue Pump Station using existing pipe.			1/1/2036	
		015	7th Avenue East	Construct new 7th Ave Lift station for wet and dry weather flows.	Conveyance pump station with minimum sustained design capacity of 135 million gallons per day.	Ability to pump 45 MGD to the West WWTP and 90 MGD to onsite storage and high-rate treatment facility.		1/1/2026	1/1/2038*	
				Above ground storage basin	Storage basin with a minimum storage volume of 5.1 million gallons. This volume is for the storage basin only, and excludes conveyance sewers and dewatering sewers	After construction of the high-rate treatment unit, no more than 4 CSOs, and a total of 7 MG of residual overflow volume under Typical Year conditions. Treated discharges must not exceed a TSS concentration of 40 mg/L averaged over the last seven discharge events. The compliance sampling done at the proposed high-rate treatment unit will be representative and reported as a 7-Discharge Rolling Average over the seven most recent discharge events. See Appendix H for monitoring and reporting requirements.		1/1/2028	1/1/2038*	
				Satellite high rate treatment facility	Satellite high rate treatment unit that meets the performance criteria, including disinfection, with a minimum sustained design capacity of 72 million gallons per day. The hydraulic loading rate shall not exceed the manufacture's recommendation.		1/1/2035	1/1/2036	1/1/2038	
		016	Franklin Street	Relief sewer to 7th Avenue CSO Control Facility	Relief sewer with a minimum diameter of 72 inches.	No more than 2 CSOs, and a total of 2 MG of residual overflow volume under Typical Year conditions.	1/1/2035	1/1/2036	1/1/2038*	
		020	9th Avenue	Relief sewer to 7th Avenue CSO Control Facility	Relief sewer with a minimum diameter of 48 inches.	0 CSOs and 0 gallons of residual overflow volume under Typical Year conditions.	1/1/2035*	1/1/2036	1/1/2038*	
		022	St. Joseph Avenue	Increase underflow pipe size and build weir	Raise CSO regulatory weir and increase underflow sewer diameter to 36 inches.	0 CSOs and 0 gallons of residual overflow volume under Typical Year conditions.	1/1/2026	1/1/2027	1/1/2028	

Table 6-1 Negotiated 25-year IOCP Remedial Measures, Design Criteria, Performance Criteria, and Implementation Schedule

Control Measure/Plan	Project	Outfall Number or Overflow	Name	Description	Narrative Description of Proposed Design and Performance Criteria		Implementation Schedule			Planning Level Opinions of Probable Capital Cost
					Design Criteria	Performance Criteria	Bid Date	Commencement of Construction	Achievement of Full Operation	
6	Diamond Avenue/Baker Street Sewer Separation and CSO Control Projects	024	Baker	Relief pump station to Diamond Avenue CSO Control Facility	Conveyance pump station with minimum sustained design capacity of 100 million gallons per day.	No more than 4 CSOs, and a total of 12 MG of residual overflow volume under Typical Year conditions.	1/1/2025	1/1/2026	7/1/2038	$ 108,605,000
		025	Diamond Avenue	Storage basin with dewatering pump station.	Storage basin with a minimum storage volume of 8.1 million gallons. This volume is for the storage basin only, and excludes conveyance sewers and dewatering sewers. Dewatering pump station with minimum sustained design capacity of 4 million gallons per day.	After construction of the treatment unit, no more than 4 CSOs, and a total of 40 MG of residual overflow volume will occur under Typical Year conditions. Treated discharges must not exceed a TSS concentration of 40 mg/L averaged over the last seven discharge events. The compliance sampling done at the proposed high-rate treatment unit will be representative and reported as a 7-Discharge Rolling Average over the seven most recent discharge events. See Appendix H for monitoring and reporting requirements.	1/1/2028	1/1/2029	1/1/2032*	
				Conveyance Pump Station	Pump station to conveyance wastewater to Diamond Avenue storage basin/treatment facility with minimum sustained design capacity of 150 million gallons per day.		1/1/2028*	1/1/2029	1/1/2032*	
				Satellite high rate treatment facility	Satellite high rate treatment unit that meets the performance criteria, including disinfection, with a minimum sustained design capacity of 20 million gallons per day. The hydraulic loading rate shall not exceed the manufacture's recommendation.		1/1/2028*	1/1/2029	1/1/2032	
				Diamond Avenue partial sewer separation	Partial sewer separation within the Diamond Avenue subbasin, as described in Evansville's 2007 Stormwater Master Plan and in Figure 9-5 of the July 31, 2015 IOCP.	No SSOs pursuant to Consent Decree paragraph 12, subject to Consent Decree paragraph 69.			1/1/2026	
7	Oakley Street CSO Storage Facility	018	Oakley Street	Storage basin with gravity influent & effluent	Storage basin with a minimum storage volume of 0.6 million gallons. This volume is for the storage basin only, and excludes conveyance sewers and dewatering sewers	0 CSOs and 0 gallons of residual overflow volume under Typical Year conditions.	1/1/2034	1/1/2035	7/1/2036	$ 4,153,000
8	Oak Hill Sewer Separation and CSO Control Projects		Oak Hill	Partial sewer separation	Partial sewer separation projects, including the State Hospital, Boeke Road Outfall, Weinbach and Keck projects, as identified within Evansville's 2007 Stormwater Master Plan.	No SSOs pursuant to Consent Decree paragraph 12, subject to Consent Decree paragraph 69.			1/1/2025	$ 33,695,000
		011	Oak Hill	Storage basin with dewatering pump station	Storage basin with a minimum storage volume of 6.4 million gallons. This volume is for the storage basin only, and excludes conveyance sewers and dewatering sewers. dewatering pump station with minimum sustained design capacity of 4.6 million gallons per day.	No more than 3 CSOs, and a total of 5 MG of residual overflow volume under Typical Year conditions.	1/1/2035	1/1/2036	7/1/2037	

Table 6-1 Negotiated 25-year IOCP Remedial Measures, Design Criteria, Performance Criteria, and Implementation Schedule

Control Measure/Plan	Project	Outfall Number or Overflow	Name	Description	Narrative Description of Proposed Design and Performance Criteria		Implementation Schedule			Planning Level Opinions of Probable Capital Cost
					Design Criteria	Performance Criteria	Bid Date	Commencement of Construction	Achievement of Full Operation	
9	Downtown CSO (Oak/Riverside, Chestnut, and Dress Plaza) Control Projects	008	Chestnut	Relief sewer to Oak-Riverside Storage facility	Relief sewer with a minimum diameter of 84 inches.	No more than 3 CSOs, and a total of 13 MG of residual overflow volume under Typical Year conditions.	1/1/2037	1/1/2038	1/1/2039	$ 71,416,000
		038	Oak and Riverside	Storage basin with dewatering pump station	Storage basin with a minimum storage volume of 7.5 million gallons. This volume is for the storage basin only, and excludes conveyance sewers and dewatering sewers. Dewatering pump station with minimum sustained design capacity of 3.8 million gallons per day. Relief sewer with a minimum diameter of 48 inches.	0 CSOs and 0 gallons of residual overflow volume under Typical Year conditions.	1/1/2037	1/1/2038	12/31/2039	
		010	Dress Plaza	Storage basin with dewatering pump station	Storage basin with a minimum storage volume of 3.2 million gallons. This volume is for the storage basin only, and excludes conveyance sewers and dewatering sewers. Dewatering pump station with minimum sustained design capacity of 2.1 million gallons per day. Relief sewer with a minimum diameter of 60 inches.	No more than 3 CSOs, and a total of 7 MG of residual overflow volume under Typical Year conditions.	1/1/2035	1/1/2036	1/1/2037	
10	6th Avenue, Dresden Street, Maryland Street, and Delaware Street CSO Control Projects	012	Maryland Street	Relocate diversion structure and sanitary connection to the upstream. Relief Sewer to Delaware CSO Control Facility.	Relief sewer with a minimum diameter of 72 inches.	No more than 2 CSOs, and a total of 1 MG of residual overflow volume under Typical Year conditions.	1/1/2036	1/1/2038	5/31/2040	$ 55,254,000
		13	Delaware Street	Storage basin with dewatering pump station, conveyance pump station, and relief sewer.	Storage basin with a minimum storage volume of 3.5 million gallons. This volume is for the storage basin only, and excludes conveyance sewers and dewatering sewers. Dewatering pump station with minimum sustained design capacity of 1.8 million gallons per day. Conveyance pump station with minimum sustained design capacity of 70 million gallons per day. Relief sewer with minimum diameter of 84 inches.	No more than 2 CSOs, and a total of 3 MG of residual overflow volume under Typical Year conditions.	1/1/2036	1/1/2038	5/31/2040	
		014	Dresden Street	Relief sewer to Delaware Street CSO Control Facility	Relief sewer with a minimum diameter of 60 inches.	No more than 2 CSOs, and a total of 1 MG of residual overflow volume under Typical Year conditions.	1/1/2036	1/1/2038	5/31/2040	
		017	6th Avenue	Relief sewer to Delaware Street CSO Control Facility	Relief sewer with a minimum diameter of 24 inches.	No more than 1 CSOs, and 1 MG of residual overflow volume under Typical Year conditions.	1/1/2036	1/1/2038	5/31/2040	

Table 6-1 Negotiated 25-year IOCP Remedial Measures, Design Criteria, Performance Criteria, and Implementation Schedule

Control Measure/Plan	Project	Outfall Number or Overflow	Name	Description	Narrative Description of Proposed Design and Performance Criteria		Implementation Schedule			Planning Level Opinions of Probable Capital Cost
					Design Criteria	Performance Criteria	Bid Date	Commencement of Construction	Achievement of Full Operation	
SSRMP	North Park Rehabilitation Projects		Mill Road SSOs	Sewer and manhole rehabilitation	Defendants shall spend $4,555,000, in 2015 dollars.		1/1/2018	1/1/2019	1/1/2023	$ 4,555,000
SSRMP	North Park Capacity Projects	SSO	Mill Road SSOs	Increase conveyance capacity by upsizing trunk sewers; raise manhole rim elevations; pump flow into CSS	Conveyance pump station with minimum sustained design capacity of 17.7 million gallons per day. Upsize a total length of 7,759 feet of sanitary sewer. Relief sewer diameter will be determined using 10-year level of SSO control. Seal manholes associated with upsized sewer lines. See Evansville's approved Sanitary Sewers Remedial Measures Plan for more specific project details.	0 SSOs, 10-year level of SSO control	1/1/2030	1/1/2031	5/31/2035	$ 12,453,000
SSRMP	Lloyd Expressway Rehabilitation Projects	SSO	Lincoln Avenue SSOs	Sewer and manhole rehabilitation	Defendants will spend $2,619,000, in 2015 dollars.		1/1/2021	1/1/2022	1/1/2025	$ 2,619,000
SSRMP	Lloyd Expressway Capacity Projects	SSO	Lincoln Avenue SSOs	Increase conveyance capacity by upsizing trunk sewers; raise manhole rim elevations	Upsize a total length of 5,951 feet of sanitary sewer. Relief sewer diameter based on 10-year level of SSO control. Adjust 2 manhole inverts. See Evansville's approved Sanitary Sewers Remedial Measures Plan for more specific project details.	0 SSOs, 10-year level of SSO control	1/1/2024	1/1/2025	1/1/2027	$ 3,215,000
SSRMP	NW/SW Rehabilitation Projects	SSO	Tekoppel Avenue SSOs	Sewer and manhole rehabilitation	Defendants shall spend $3,876,000, in 2015 dollars.		1/1/2022	1/1/2023	1/1/2027	$ 3,876,000
SSRMP	NW/SW Capacity Projects	SSO	Tekoppel Avenue SSOs	Increase conveyance capacity by upsizing trunk sewers; raise manhole rim elevations; pump flow into CSS	Conveyance pump station with minimum sustained design capacity of 14.5 million gallons per day. Size any relief sewer diameter based on 10-year level of SSO control. See Evansville's approved Sanitary Sewers Remedial Measures Plan for more specific project details.	0 SSOs, 10-year level of SSO control	1/1/2026	1/1/2027	1/1/2028	$ 3,808,000
SSRMP	E-11 Rehabilitation Projects	SSO	Bergdilt Rd SSOs	Sewer and manhole rehabilitation	Defendants shall spend $3,487,000, in 2015 dollars.		1/1/2022	1/1/2023	1/1/2026	$ 3,487,000
SSRMP	E-11 Capacity Projects	SSO	Bergdilt Rd SSOs	Increase conveyance capacity by upsizing trunk sewers; raise manhole rim elevations; pump flow into CSS	Conveyance pump station with minimum sustained design capacity of 14.5 million gallons per day. Upsize a total sewer length of 12,043 feet. Relief sewer diameter based on 10-year level of SSO control. Adjust 21 manhole inverts. See Evansville's approved Sanitary Sewers Remedial Measures Plan for more specific project details.	0 SSOs, 10-year level of SSO control	1/1/2027	1/1/2028	1/1/2030	$ 15,882,000

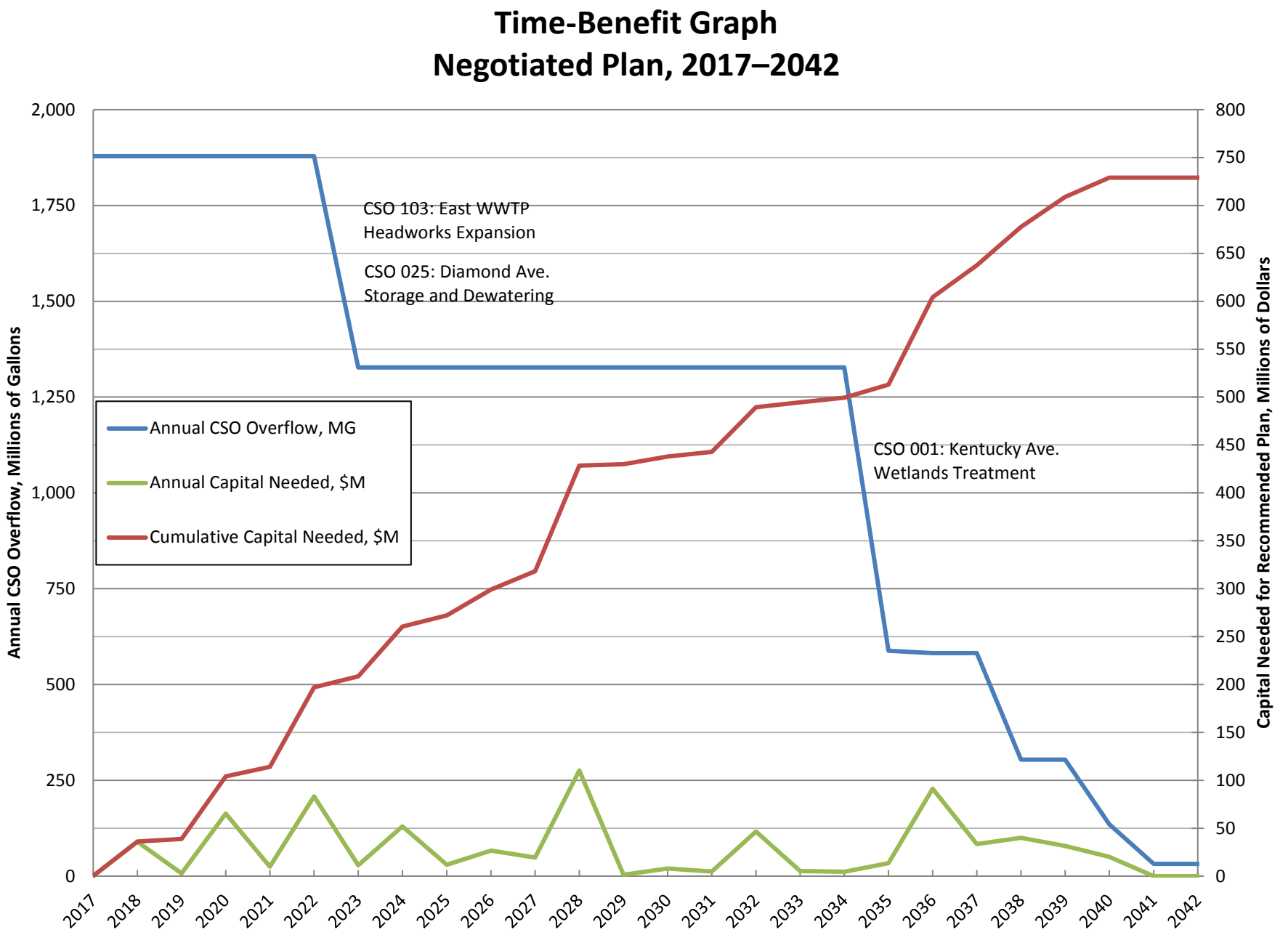
Table 6-1 Negotiated 25-year IOCP Remedial Measures, Design Criteria, Performance Criteria, and Implementation Schedule

Control Measure/Plan	Project	Outfall Number or Overflow	Name	Description	Narrative Description of Proposed Design and Performance Criteria		Implementation Schedule			Planning Level Opinions of Probable Capital Cost
					Design Criteria	Performance Criteria	Bid Date	Commencement of Construction	Achievement of Full Operation	
SSRMP	SSS Rehabilitation Projects	SSO	SSS Basins	Sewer and manhole rehabilitation	Defendants shall spend $3,671,000, in 2015 dollars.		1/1/2024	1/1/2025	1/1/2035	$ 3,671,000
										$ 715,852,000

Notes:

This summary table represents only capital costs in 2015 dollars using ENRCCI of 8903. Refer to the LTCP, SSRMP and Facility Plan (Volumes 2 thru 4) for specific project details and development of cost opinions. Project O&M and Life Cycle costs for the LTCP projects are presented in the appendixes to the LTCP, Volume 2.

1. Performance criteria is based on Evansville's typical precipitation year. Evansville should have no more than four CSO activations within the combined sewer collection system during the typical precipitation year.
2. Crossed out boxes in the Implementation Schedule indicated smaller projects whose full completion dates were earlier than the larger projects within the same control measure.
3. Dates with an asterix denote dates in the Implementation Schedule that were taken from a larger project in the same control measure.
4. Effluent from the 7th Avenue Remote Treatment Unit, Diamond Avenue Remote Treatment Unit, the Constructed Wetland, and the VTU shall not exceed the following E. coli criteria from April 1 through October 31: (A) One hundred twenty-five (125) colony forming units per one hundred (100) milliliters as a geometric mean provided that five (5) grab samples or more are collected over a thirty (30) day period and (B) Two hundred thirty-five (235) colony forming units per one hundred (100) milliliters daily maximum. Daily maximum shall be the geometric mean of all samples on any discharge day provided that three (3) or more grab samples are collected. If less than 3 grab samples are taken then the arithmetic mean shall be reported instead. The goal of the effluent monitoring program is to collect at least 3 grab samples during each discharge event, and the samples shall be collected at shorter intervals at the onset of the event, if Evansville estimates that the event duration may be less than 6 hours.
5. Discharges from the wetland treatment system, VTU, 7th Avenue East satellite high rate treatment system, and Diamond Avenue high rate treatment system in compliance with the applicable Design and Performance Criteria and applicable NPDES permit requirements are not considered a "CSO" prohibited by the Consent Decree, as amended, for purposes of determining compliance with the number of CSOs specified by the Performance Criteria applicable to each such system.
6. Per Evansville's 2015 Combined Sewer Overflow Operation Plan (CSOOP) Update, CSOs 009 and 123 are not utilized. Evansville shall physically eliminate both of these CSOs by October 31, 2016 and reflect the elimination of these outfalls in its 2016 CSOOP Update.


Time-Benefit Graph
Negotiated Plan, 2017–2042
Annual CSO Overflow, Millions of Gallons
Capital Needed for Recommended Plan, Millions of Dollars
2,000
1,750
1,500
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2042
Annual CSO Overflow, MG
Annual Capital Needed, $M
Cumulative Capital Needed, $M
CSO 103: East WWTP
Headworks Expansion
CSO 025: Diamond Ave.
Storage and Dewatering
CSO 001: Kentucky Ave.
Wetlands Treatment

Figure 6-7

SECTION 7

References

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Clark Dietz, Inc. 2007. *2007 Stormwater Master Plan, Evansville, IN*. May.

U.S. Census Bureau. 2011. American Community Survey.

U.S. Environmental Protection Agency (EPA). 1997. Combined Sewer Overflows Guidance for Financial Capability Assessment and Schedule Development. EPA 832-B-97-004. February 1.

APPENDIX A

Required Consent Decree and Other Deliverables Submitted as of October 6, 2014

TABLE A-1
Decree Deliverables Listing
Updated October 6, 2014

	Deliverable	Date Due	Submitted to Agencies	Agency Review Status	Date Comments Received	Date Comment Response Submitted
	2009 Combined Sewer Overflow Operation Plan Update	1-Nov-2009	1-Nov-2009	No comments received	-	-
	2010 Combined Sewer Overflow Operation Plan Update	1-Nov-2010	1-Nov-2010	No comments received	-	-
1	Submit SSES Work Plan	30-Nov-2010	30-Nov-2010	No comments received	-	-
2	Submit SORP 1.0	1-Dec-2010	1-Dec-2010	Provided comments	3-Mar-2011	1-Apr-2011
3	Submit Public and Regulatory Participation Plan	31-Dec-2010	31-Dec-2010	No comments received	-	-
4	Submit 7th Ave Pump Station Wet Weather Operating Plan (Consent Decree paragraph 20.a)	31-Jan-2011	31-Jan-2011	Provided comments	15-Apr-2011	16-May-2011
5	Submit Capacity Assessment Work Plan including approach for determining Critical Storm Duration	30-Apr-2011	30-Apr-2011	Provided comments	29-Jul-2011	29-Aug-2011
6	Install baffles in the secondary treatment system clarifiers a the West WWTP (Consent Decree paragraph 20.b)	30-Apr-2011	30-Apr-2011	No comments received	-	-
7	Submit CMOM 2.0	1-May-2011	1-May-2011	Provided comments	28-Jul-2011	29-Aug-2011
8	Submit SORP 2.0	1-May-2011	1-May-2011	Provided comments	29-Jul-2011	29-Aug-2011
9	Utilize Data System for Tracking Operating and Maintenance Activities	31-Jul-2011	31-Jul-2011	No comments received	-	-
10	Complete Water Quality Data Review and submit SRCER Update, including the Water Quality Model of Pigeon Creek and the Ohio River.(GC)	31-Aug-2011	31-Aug-2011	No comments received	-	-
	Submit Semi-Annual Report (SAR) 2011-1	1-Sep-2011	1-Sep-2011	No comments received	-	-
	2011 Combined Sewer Overflow Operation Plan Update	1-Nov-2011	1-Nov-2011	No comments received	-	-
11	Submit report on capacity of clarifiers	1-Nov-2011	1-Nov-2011	No comments received	-	-
12	Submit report evaluating the effectiveness of step feed and/or contact stabilization in the secondary aeration basins to maximize wet weather flow through the secondary treatment at East WWTP and West WWTP.(Consent Decree paragraph 19.a and 20.c)	1-Nov-2011	1-Nov-2011	No comments received	-	-
13	Submit stress test protocols that will identify the proposed revision to the Maximum Treatable Flow of the East WWTP and West WWTP. (Consent Decree paragraph 19.d and 20.d)	1-Nov-2011	1-Nov-2011	Provided comments	15-Mar-2012	22-Mar-2012
14	Complete Trunk Sewer Survey and Condition Assessment.	30-Nov-2011	30-Nov-2011	Letter acknowledged completion	24-Jan-2012	NA
15	Submit Update to West CSS and East CSS characterization and hydraulic model including development of SSS Hydraulic model.	30-Nov-2011	30-Nov-2011	No comments received	-	-
16	Submit Critical Storm Duration Analysis	31-Dec-2011	30-Dec-2011	No comments received	-	-
17	Submit Revised Financial Analysis	31-Jan-2012	7-Feb-2012	Provided comments	23-Mar-2012	9-Apr-2012
18	Submit CSO Alternative Analysis Screening Report.	31-Jan-2012	31-Jan-2012	No comments received	-	-
	Submit CMOM 2.1	29-Feb-2012	29-Feb-2012	No comments received	-	-
19	Install East WWTP Early Action Upgrades including a second bar screen and fourth influent pump. (Consent Decree paragraph 19.b and c)	1-Mar-2012	29-Feb-2012	No comments received	-	-
	Submit SAR 2011-2	1-Mar-2012	1-Mar-2012	No comments received	-	-
20	Submit SSA Report including SSES Report, and Capacity Assessment	31-Mar-2012	30-Mar-2012	Provided comments	24-May-2012	11-Jul-2012
21	Conduct a stress test of East and West WWTP and identify revised Maximum Treatable Flow. (Consent Decree paragraph 19.d and 20.d)	31-Jul-2012	31-Jul-2012	No comments received	-	-
22	Implement revised Maximum Treatable Flow operations at the East and West WWTP. (Consent Decree paragraph 19.e, 20.e)	31-Jul-2012	31-Jul-2012	No comments received	-	-
23	Submit the Draft IOCP to Plaintiffs and to Public, including but not limited to CSO/SSS Capacity Alternatives Analysis; the Alternatives Analysis for the LTCP; the Alternatives Analysis for the SSRMP; the Facility Plans for Expansions of the East and West WWTPs; and proposed Implementation Schedules for the SSRMP, LTCP	31-Jul-2012				
23	Volume 1 - Integrated Overflow Control Plan	31-Jul-2012	31-Jul-2012	No comments received	-	-
23	Volume 2 - Long Term Control Plan	31-Jul-2012	31-Jul-2012	Provided comments	13-Sep-2012	19-Oct-2012
23	Volume 3 - Separate Sanitary Sewer Remedial Measures Plan	31-Jul-2012	31-Jul-2012	Provided comments	26-Oct-2012	4-Jan-2013
23	Volume 4 - Facility Plan for the West and East WWTPs	31-Jul-2012	31-Jul-2012	Provided comments	19-Oct-2012	13-Nov-2012
23	Revised Financial Capability Assessment	31-Jul-2012	31-Jul-2012	Provided comments	1-Feb-2013	In Discussion
	Submit SAR 2012-1	1-Sep-2012	31-Aug-2012	No comments received	-	-
	EPA Conference Call, EWSU received control measure spreadsheet	5-Oct-2012				
23[a]	EWSU submitted LTCP comment response (Technical Meeting 1 focused on many of the comments/responses)		19-Oct-2012			
	Technical Meeting 1 and Meeting Follow up	24-Oct-2012				
	EWSU provided Pigeon Creek Interceptor multi-sensor evaluation		25-Oct-2012			
	EWSU provided Bee Slough alternatives evaluation information (alternatives, costs, figures)		25-Oct-2012			
	EWSU provided vertical treatment unit information		25-Oct-2012			
	EWSU provided Figure 1 - Evansville CSO Volumes in pdf format		27-Oct-2012			
	EWSU provided cost performance tables in EPA format		27-Oct-2012			
24	Revise the West WWTP and the East WWTP Maximum Treatable Flow designations in CSOOP. (Consent Decree paragraph. 19.e and 20.e)	1-Nov-2012	1-Nov-2012	No comments received	-	-
	2012 Combined Sewer Overflow Operation Plan Update	1-Nov-2012	1-Nov-2012	No comments received	-	-
23[a]	EWSU submitted Facility Plan comment response (Technical Meeting 2 focused on many of the comments/responses)		13-Nov-2012			

TABLE A-1
Decree Deliverables Listing
Updated October 6, 2014

	Deliverable	Date Due	Submitted to Agencies	Agency Review Status	Date Comments Received	Date Comment Response Submitted
25	Submit CMOM 3.0	30-Nov-2012	30-Nov-2012	No comments received	-	-
	EWSU provided tunnel analysis TM		30-Nov-2012			
	EWSU provided 7th Avenue Lift Station replacement/improvements TM		30-Nov-2012			
	Technical Meeting 2 and Meeting Follow up	4-Dec-2012				
	EWSU provided Excel version of optimization result tables		6-Dec-2012			
	EWSU provided technical paper regarding Biological and Chemically Enhanced High-Rate Clarification Solution for the Treatment of Wet Weather Flows		6-Dec-2012			
	EWSU provided technical paper regarding Operating Chemically Enhanced Clarification for Optimum Disinfection Performance		6-Dec-2012			
	EWSU provided information on WERF wet-weather disinfection project EWSU would participate in if awarded		6-Dec-2012			
23[a]	EWSU submitted SSRMP comment response		4-Jan-2012			
	EWSU provided cost performance tables		18-Jan-2013			
	EWSU provided TM regarding East WWTP expansion alternatives and CSO volumes		18-Jan-2013			
	EWSU provided pie charts with treatment type/volume data		18-Jan-2013			
	Technical Meeting 3 and Meeting Follow up	24-Jan-2013				
	EWSU provided revised cost performance tables		1-Feb-2013			
	Submit Supplemental Environmental Projects (SEP) Completion Report	1-Feb-2013	1-Feb-2013	No comments received	-	-
	Financial Capabilities Assessment Meeting and Follow up	6-Feb-2013				
	EWSU provided shape files of gravity sewer mains		8-Feb-2013			
	EWSU provided CSS and sewer basin shape files		8-Feb-2013			
	EWSU provided non-IOCP capital projects data		8-Feb-2013			
	EWSU provided non-IOCP capital needs data		8-Feb-2013			
	EWSU provided Bee Slough draft treatment wetland TM		12-Feb-2013			
	Technical Meeting 4 and Meeting Follow up		20-Feb-2013			
	EWSU provided Future Flows TM		28-Feb-2013	Provided comments	4-Apr-2013	9-May-2013
	Submit SAR 2012-2	1-Mar-2013	1-Mar-2013	No comments received	-	-
	LTCP Submittal Requirement correspondance received from EPA, listing alternatives and levels of control EWSU should evaluate		15-Mar-2013			31-May-2013
	Technical Meeting 5 and Meeting Follow up		20-Mar-2013			
	EWSU provided Typical Year Rainfall and 2-YR 24-HR Design Storm Comparison for West Sewer System Model TM		29-Mar-2013	Additional graphs requested	3-Apr-2013	10-Apr-2013
	EWSU provided Bee Slough Alternatives Analysis Draft Report, including wetland analysis		29-Mar-2013	No comments received	-	-
	Technical Meeting 6 and Meeting Follow up		24-Apr-2013			
	Identifying SSOs Included in the SSRMP TM		10-May-2013	No comments received	-	-
26	Submit Final IOCP, including Post-Construction Monitoring Plan	31-May-2013	31-May-2013	Ongoing dialogue with agencies	Ongoing dialogue with agencies	
	USEPA Addtional Information Request 1				19-Jul-2013	7-Aug-2013
	Submit SAR 2013-1	1-Sep-2013	31-Aug-2013	No comments received	-	-
	USEPA Addtional Information Request 2				6-Sep-2013	17-Sep-2013
	2013 Combined Sewer Overflow Operation Plan Update	1-Nov-2013	1-Nov-2013	No comments received	-	-
	USEPA Additonal Information Request 3 - SSRMP				13-Nov-2013	10-Dec-2013
	USEPA Additonal Information Request 4 - Wetlands & Sewer Separation				26-Nov-2013	20-Dec-2013
	EWSU submitted request for approval of certain early action projects, including Proposed Early Action Projects TM		26-Nov-2013	Certain approvals received	6-Dec-2013	-
	USEPA Additonal Information Request 5 - Wetlands				5-Dec-2013	20-Dec-2013
	USEPA Additional Information Request 6 - Post Construction Flow Monitoring				4-Feb-2014	20-Mar-2014
	USEPA Additional Information Request 7 - Green Infrastructure Planning and Recommendations				4-Feb-2014	20-Mar-2014
	Teleconference with UPEPA and IDEM regarding early action projects		29-Jan-2014			
	Submit CMOM 3.1	14-Feb-2014	14-Feb-2014	No comments received	-	-
	Submit SAR 2013-2	1-Mar-2014	1-Mar-2014	No comments received	-	-
	Hydraulic and Operations Analysis of the Bee Slough Control Measure TM		18-Apr-2014	Provided comments	8-May-2014	16-May-2014
	Teleconference with USEPA and IDEM regarding Wetlands Additional Modeling TM		8-May-2014			
	EPA Disapproval of IOCP		16-Jun-14		7-Jun-2014	8-Jul-2014
	EPA/EWSU Meeting to Discuss IOCP		24-Jul-14			
	EPA/EWSU Teleconference to Discuss FCA		22-Sep-14			
27	Complete Full Implementation of the IOCP*	31-May-2032				
28	Complete Post Construction Monitoring	31-May-2033				
29	Submit Post Construction Monitoring Report	31-May-2034				

[a] Comment response is duplicated from "Date Comment Response Submitted" column to clarify the timeline and relationship between the comment response and technical meeting content

Black text and deliverable number represents dates/deliverable listed in Appendix B of the Decree

Blue text signifies other Decree required deliverables/submittals and deadlines not listed in Appendix B of the Decree

Red text indicates submittal of information/data requested by EPA, but not listed in the Decree

APPENDIX B

Public and Regulatory Participation Plan

Public and Regulatory Participation Plan

Overall plan and strategy

Following the guidelines outlined in the Consent Decree, the Evansville Water and Sewer Utility partnered with Borshoff to implement the Public and Regulatory Participation Plan (PRPP). Work began in August 2011 and continued through the May 31, 2013, final Integrated Overflow Control Plan (IOCP) submission.

Educating the public about complex and unfamiliar utility issues can be challenging. Before any outreach began, Borshoff branded the IOCP *Renew Evansville.*

Borshoff developed strategic key messages refined by target audience for the outreach campaign. We sought to generate awareness and public participation through an integrated marketing strategy, including:

- Citizens Advisory Committee (CAC) meetings
- Media relations
- Social media
- Outreach materials
- Public meetings
- Speakers bureau
- Website

PRPP objectives

- To increase the public's awareness and understanding of Evansville's water and sewer system, including the negative impact that overflows have on the community.
- To increase public awareness of the health dangers posed by overflows and their subsequent water pollution.
- To change public behavior that adds to the overflow problem.
- To engage elected officials in the IOCP's development and ask for their support in sharing key messages with their constituents.
- To engage the public to comment on and contribute to the IOCP plan.
- To increase public support for incremental rate increases, as part of an overall movement to improve water quality for themselves and future generations.

Key audiences

- Residents of Evansville and Vanderburgh County
- Property owners
- Public and elected officials
- Non-governmental organizations and advocacy groups
- Architecture, engineering, construction and real estate professionals
- City of Evansville and Evansville Water and Sewer Utility (EWSU) employees

Phased project strategies

The following pages outline outreach strategies, tactics and materials supporting the development of the IOCP.

Community Advisory Committee

CAC Guidelines and membership

In 2012, the *Renew Evansville* project team (Evansville Water and Sewer Utility, CH2MHill and Borshoff) – under direction of Mayor Lloyd Winnecke – assembled a Citizens Advisory Committee (CAC), comprised of informed community leaders, to gather feedback on area- and economic-specific elements of the plan.

Fifteen members, ranging in expertise from the environment to area business development, participated, including:

David Ballew	United Neighbors of Evansville, City Building Commission
Debra Bennett-Stearsman	Economic Development Committee of Southwest Indiana
Dona Bergman	Department of Sustainability, Energy and Environmental Quality
John Blair	Valley Watch
Chris Cooke	United Neighbors of Evansville
Donna Crooks	Growth Alliance for Greater Evansville (GAGE)
Pam Guthrie	United Neighbors of Evansville
Pat Keepes	City Engineer
Don Mottley	Save our Rivers
Cheryl Musgrave	Keep Evansville Beautiful
Bill Pedtke	Southwest Indiana Builders Association
George Postletheweight	Southwest Indiana Association of Realtors
Mike Schopmeyer	Kahn, Dees, Donovan and Kahn, LLP
Brian Swenty	University of Evansville
Charleen Williamson	United Neighbors of Evansville

CAC meeting topics

March 22, 2012 - At the inaugural CAC meeting, Jim Garrard presented an overview of *Renew Evansville* and explained Evansville's challenge to correct combined sewer overflows (CSOs). Presentation topics included defining CSOs, the Clean Water Act and the consent decree the City of Evansville entered into with EPA, the Department of Justice and the State of Indiana. The presentation also addressed specific planning goals of the Integrated Overflow Control Plan. Twelve CAC members and 11 team members were in attendance. The meeting lasted approximately an hour and a half.

April 25, 2012 - Paul Amico, project manager at CH2M Hill, educated CAC members about Evansville's sewer system infrastructure and its capacity levels. Using Google Earth and several diagrams of the system, he explained what characteristics of the system are causing Evansville's CSOs. Paul also described solutions that would improve both east and west service areas with respect to the modeling conducted by his team of engineers. Five CAC members and 10 team members were in attendance. The meeting lasted approximately an hour and a half.

May 17, 2012 - EMH&T, a city-contracted engineering firm, presented an overview of green solutions applicable to *Renew Evansville*. Green infrastructure, defined as a solution that would mimic natural processes, has potential uses in both the east and west service areas. Overall, green infrastructure planning is a critical conversation in any Evansville redevelopment project moving forward. Five CAC members and 13 team members were in attendance. The meeting lasted approximately one hour.

June 20, 2012 - Paul Amico from CH2M Hill described construction options that address fixing overflows in specific areas of the City. Included in this discussion was an analysis of Bee Slough and the reasoning behind crafting a wetland concept. Four CAC members and 10 team members were in attendance. The meeting lasted approximately an hour and a half.

July 18, 2012 - The *Renew Evansville* team updated CAC members about recent meetings with the EPA and the progress of the plan. At that point in the IOCP development, the team had identified a sizable gap between what ratepayers can seemingly afford and where regulators feel Evansville should be in terms of managing CSOs. A full summary of cost estimates were presented as well as the highest priorities included in a 30-year phased plan. Eight CAC members and nine team members were in attendance. The meeting lasted approximately two hours.

April 19, 2013 - Jim Garrard presented the CAC with program updates since the submission of the IOCP in July 2012. He explained the extension of the draft submission, caused by modeling one of the heaviest rainfalls on record in 2011. Models had been updated, and some of the program deliverables had already been completed. This progress resulted in more accurate measurements for modeling and a decrease in CSOs. The team also discussed strategy behind public outreach set to begin before the team's new May 31 deadline. Two CAC members and 10 team members were in attendance.

May 14, 2013 - Jim Garrard and Paul Amico presented the slide deck that was presented at each public meeting. The team discussed the financial analysis and capability statements in detail, and discussed the 28-year, $540 million plan being submitted. Five CAC members and seven team members were in attendance.

Media relations and social media

Media relations

Borshoff utilized local media as a communication vehicle to announce outreach efforts and public meetings for *Renew Evansville*. Since the effects of combined sewer overflows were widely unknown and largely ignored, it was imperative reporters and members of the media accurately reported the details of the program.

Before releasing a formal press announcement, Borshoff conducted a well-attended editorial board meeting in April 2012 for beat-specific reporters and editors to provide a detailed synopsis and summary of public outreach for *Renew Evansville*.

In May, *Renew Evansville* and the project website were promoted through media relations. Additional media campaigns followed to promote participation and attendance in the public meetings.

Social media

To reach rate payers and stakeholders in Evansville and drive traffic to www.RenewEvansville.com, EWSU adopted a Twitter feed. The feed, @RenewEvansville, began April 27, 2012, coinciding with the announcement regarding the start of public outreach.

The *Renew Evansville* team identified and began following Evansville social media leaders and members of the media who are active on Twitter; many of them became followers of @RenewEvansville.. Tweets for @RenewEvansville were timely and factual. They identified various aspects of the project, showing the impact of the program on the city. Tweets also announced new additions to the website, links to news releases and public meeting dates and times.

As of May 31, 2012, @RenewEvansville tweeted 17 times, has 51 followers and gathered 5 retweets.

Public meetings

The public meetings were promoted through media relations, Twitter and RenewEvansville.com.

August 28, 2012, public meeting

The Utility presented its draft Integrated Overflow Control Plan to the public on Aug. 28, 2012. It was held in the evening at Benjamin Bosse High School. Two members of the public attended. Two reporters, as well as many team members, also attended the event.

May 14, 2013, morning public meeting

The Utility presented its updated Integrated Overflow Control Plan to the public on May 14, 2013. It was held at 9 a.m. at McCollough Library. Twelve members of the public, four reporters and 12 team members attended the event.

May 14, 2013, evening public meeting

The Utility scheduled a public meeting at 6:30 p.m., May 14, 2013, at Bosse High School. No members of the public attended. One reporter and several team members attended the event. No formal presentation was given.

May 15, 2013 morning public meeting

The Utility presented its updated Integrated Overflow Control Plan to the public on May 15, 2013. It was held at 9:30 a.m. at North Park Library. Seven members of the public and six team members attended the event.

May 15, 2013 evening public meeting

The Utility presented its updated Integrated Overflow Control Plan to the public on May 15, 2013. It was held at 6:30 p.m. at Vogel Elementary School. Six members of the public and seven team members attended the event.

May 16, 2013, morning public meeting

The Utility presented its updated Integrated Overflow Control Plan to the public on May 16, 2013. It was held at 9:30 a.m. at Red Bank Library. Two members of the public and 10 team members attended the event.

May 16, 2013, evening public meeting

The Utility presented its updated Integrated Overflow Control Plan to the public on May 16, 2013. It was held at 6:30 p.m. at Fairlawn Elementary School. Nineteen residents, seven *Renew Evansville* team members and a member of the news media attended the event.

Outreach materials

The *Renew Evansville* team used many public outreach tools to communicate with the public. All materials were branded *Renew Evansville,* making them easily recognizable and associated with the IOCP. These materials included, but are not limited to:

- Comment cards, distributed at public meetings and at speakers bureau presentations
- Fact sheets/backgrounders, distributed at public meetings and speakers bureau presentations, and available for download on the website.
- Frequently asked questions, distributed at public meetings and speakers bureau presentations, and available for download on the website.
- Maps of the project area, available on the website and included in the fact sheet and on display boards.
- PowerPoints, display boards, signage, banners and report templates were developed and used throughout the IOCP's development.

The largest and most visible outreach tool was the website, www.RenewEvansville.com, The website was updated often while the IOCP was developed.

Speakers bureau

The outreach team proactively reached out to 63 civic, community, environmental, neighborhood and other area organizations, offering to present at a group meeting. The goal of the speakers bureau was to encourage a dialogue and increase understanding about the issue of combined sewer overflows, while answering the public's questions about the IOCP and future enhancements to the system. The 30-minute presentation included a PowerPoint, display boards, and question and answer sessions (as time allowed).

While only five groups scheduled presentations in 2012 and one in 2013, the Utility will continue reaching out to these organizations, especially as *Renew Evansville* enters the design and construction phases.

Appendix A

Citizens Advisory Committee Meeting Minutes

Appendix A.1

March 22, 2012
Location: Downtown Central Library

Attendees: Don Mottley – Save Our Rivers
Carol R. Oglesby – Valley Watch
David Ballew – United Neighborhoods of Evansville
Patrick Keepes – Evansville City Engineer
Brian Swenty – University of Evansville
Donna Crooks – Growth Alliance for Greater Evansville (GAGE)
Dona Bergman – Evansville Department of Sustainability, Energy and Environmental Quality
George Postletheweight – Southwest Indiana Association of Realtors
G. Michael Schopmeyer – Kahn, Dees, Donovan and Kahn, LLP
Chris Cooke – United Neighborhoods of Evansville
Cheryl Musgrave – Keep Evansville Beautiful
Debra Bennett-Stearsman – Economic Development Committee of Southwest Indiana

Project Team: Jim Garrard – Evansville Water and Sewer Utility, Renew Evansville
Allen Mounts – Evansville Water and Sewer Utility
Jenny Collins – Evansville Water and Sewer Utility
Vivian Holiday – Evansville Water and Sewer Utility
Michael Labitzke – Evansville Water and Sewer Utility
Harry Lawson – Evansville Water and Sewer Utility
Jeff Merrick – Evansville Water and Sewer Utility
Paul Amico – CH2M Hill
Lynn Wile – CH2M Hill
Erin Pipkin – Borshoff
Tim Coxey – Borshoff

Purpose: To introduce Citizens Advisory Committee (CAC) members to each other and to the Evansville Water and Sewer Utility (EWSU) *Renew Evansville* project team. CAC members were given background information on the project and will meet quarterly to discuss progress on the IOCP's development.

Discussion: Jim Garrard gave a project overview and explained the current status of the project (see attached presentation).

1) General Information:

- Jim Garrard opened the meeting at 11:30 a.m. with a welcome and asked CAC and team members to introduce themselves, along with those who were representing absent members.
- This CAC was created to serve in an advisory capacity and provide valuable community input. The CAC consists of representative stakeholders who will meet regularly to discuss common concerns about the project.
    - CAC members were each given an agenda, contact sheet, draft fact sheet and a copy of the PowerPoint presentation.

2) PowerPoint Presentation:

- **Project overview**
    - The EWSU system is comprised of two wastewater treatment plants (East Plant, capacity 22.5 mgd; West Plant, capacity 35 mgd), 92 lift stations and 833 miles of combined and separate sewer lines.
    - Utility previously contracted out the sewer system 15 years prior to 2010.
    - Combined Sewer Overflows (CSOs) are overflows in the sewer system caused by both wastewater and stormwater. By design, the system overflows and dumps untreated water into the Ohio River and Pigeon Creek usually during rain events or snowmelt. Overflows contain municipal/industrial waste, floating debris and disease-causing pathogens.
    - Many of the outfalls are located on the bend of the Ohio River and are causing pollution and erosion near its banks on the south side of downtown.
    - Attendees watched film that described the process in depth through graphics. Jim offered to coordinate Evansville wastewater treatment plant tours if any of the CAC members were interested.
    - **Question:** Are two wastewater treatment plants sufficient?
      Answer: That is something we're investigating. The plan we're developing will likely include upgrades to current treatment plants.
- **The EPA and the Clean Water Act**
    - The Clean Water Act of 1972 mandates a significant decrease in water pollution across the U.S. Cities face significant fines from the EPA if no plan is in place. In 2006, the EPA and the Indiana Department of Environmental Management (IDEM) prompted efforts to fix Indiana CSOs.
    - In April 2009, after years of discussion with the EPA, the Department of Justice drafted a decree focused heavily on improving separate sanitary systems and operational requirements.
    - In July 2009, EPA/IDEM/DOJ/EWSU met to discuss an implementation timeline. The DOJ wanted a long-term plan within six months. EWSU asked for more time to develop an integrated plan for combined and separate sanitary sewer systems before agreeing.
    - The DOJ sued EWSU in September 2009 with seven complaints aimed at operations and maintenance of EWSU.
- **Consent Decree**
    - A legal agreement (consent decree) was reached in November 2010 that gave EWSU more time to develop a plan for integrated overflow control (IOCP). The plan does not mention anything about cost, planning or ideas, but sets a framework in which to develop the first draft of the plan, which will be available for comment by the public, by Aug. 1, 2012.

- A final plan, with public comment, is due November 30, 2012.
- The consent decree requires:
  - An implementation schedule up to 20-25 years.
  - Reasonable operation and maintenance measures.
  - Early action projects and initiatives.
  - Supplemental environmental projects that will extend the sewer system into two neighborhoods with failing septic systems.
  - Fines and penalties for non-compliance.

- **Integrated Overflow Control Plan (IOCP)**
  - Includes two capital projects.
    - Long-term CSO control.
    - Sanitary sewer remedial measures that will identify and correct infrastructure defects that cause or contribute to sanitary sewer overflows.
    - EWSU would like to address how separate and combined sewer systems can work together in order to create a linear project scope. The Utility is aware that there will be much work to create a plan of this scope.
  - Overall planning goals of the IOCP include:
    - Maximize existing sewer infrastructure.
    - Seek green technologies that eliminate the need to transport and treat water that isn't necessary to treat.
    - Construct gray (new construction) infrastructure solutions.
  - Jim noted that many cities involved in the process are finding their plans are becoming very expensive and not working as hoped. These cities have asked for additional help and time from IDEM.
  - Development of the plan will include public participation to begin Aug. 1, 2012, assessment and evaluation of current infrastructure, data analysis of system-wide capacity, modeling of proposed solutions, technology screening and financial capability analysis.
  - All IOCP projects are to be completed by May 31, 2032, with a five-year extension allowed, depending on economic conditions.
- **Key Dates**
  - July 31, 2012 – Draft IOCP is complete; public comment period begins.
  - September 30, 2012 – Public comment ends.
  - November 30, 2012 – Final IOCP (20-25 year plan) is submitted to EPA.
- **Public Involvement and Branding**
  - Borshoff is working with EWSU to develop a strategic communications plan that includes branding, key message development, collateral, CAC and public meetings, a website (RenewEvansville.com), social media, a speakers bureau and media relations.
  - The recycled "e" logo and branding was introduced. *Renew Evansville* was created to attribute a refreshed, modernized approach to project. It closely aligns with the naming structure of other City initiatives. The tagline, "*Investing in clean water resources*," represents the long-term community investment.
- **Outreach timeline**
  - A comprehensive timeline outlining the schedule of communication tactics through November 2012 was presented.
  - Jim reported Mayor Winnecke likes what has been planned thus far in the project, and the team will start scheduling dates this summer.
  - The EWSU website will include pages for public records, fact sheets, a meetings schedule and a section for media.
  - Public meetings will be held in August and on opposite sides of the city. Each meeting will be promoted per federal regulations and will collect public input after a brief

presentation and open house. Attendance and presentations are documented and submitted as part of the final IOCP.

Question: Concerning Pigeon Creek, where does the EPA monitor upstream pollution?
Answer: A stream reach characterization and evaluation report shows that the water is polluted up north before it reaches Evansville. EWSU has submitted this concern to the EPA but has not heard back yet.

Question: How much of the Consent Decree will be made public?
Answer: EWSU will make it available online at RenewEvansville.com.

Question: Will the plan be developed in-house?
Answer: EWSU is working with its engineering consultants to develop the IOCP.

Question: Can you further define gray versus green infrastructure?
Answer: Gray means that new construction or that new pipe is laid. Green includes impervious solutions that keep as much rain water out of the sewer system as possible (6 million gallons a year). These solutions include pervious pavement like downtown's new sidewalks or rain barrels. Overall, green solutions give the city a better sense of pride. The new parking lot in Morgan Township that collects water underneath the pavement is still considered gray because it does not water trees and must be maintained.

Question: There are several green initiatives happening in 2012. Are any of these projects related?
Answer: The Vanderburgh County tree advisory board and 2012 Trees in 2012 are related, as each can be affected by sewer treatment and forthcoming green initiatives. DNR studies show that trees are dying in the exact same location as the outfalls along the Ohio River. EWSU applauds the green initiatives and would like for civic groups to come together at the same table to become aware of each other's plans in order to work alongside these efforts.

Question: What is the sewer's water capacity? As we push for food-related manufacturing to move into the city, can Evansville's sewer system handle this industry? Should we continue to promote?
Answer: First, it depends on where these companies are going to locate. Also, many companies are already under pressure to capture and reuse water and new manufacturing is much cleaner now.

Question: Do manufacturers have a gray water system?
Answer: Companies with private gray water systems are rare in the Midwest because constructing and maintaining them is very expensive. Manufacturers would have to be very large, like Toyota, to support their own system.

Question: At this point, what solutions do you think will be the most effective? More treatment plants? More pipes? Diverting? Maximizing current capabilities? Running a quicker process?
Answer: Making the system run quicker would only make a smaller footprint, not reduce cost. There is a trade-off between capital and life-cycle costs. U.V. has taken on a life cycle perspective. In Pigeon Creek, there are two dry-weather pipes. One solution would be to increase the size of the pipes. We could also optimize the current system with green processes and avoid building a large, costly storage tank. There are other sewer tunnels

that are not being used to capacity, and we might divert water there. We want to ensure the public feels we are investing wisely in our plans.

Question: What are some of the trade-offs in creating more drop shafts?
Answer: The trade-off is between air pollution and water pollution. Electricity is costly, as is building drop shafts, and all recent tunnel projects around the state came in over budget because of unforeseen issues. Evansville's proximity of CSOs makes their plan more challenging than other cities. Drop shafts may not be a long-term solution.

Question: What are some green solutions for CSOs that could alleviate issues like West Nile Virus and other mosquito issues in neighborhoods?
Answer: The common view on those issues is to create natural system that can alleviate its own natural problem. The open sewer system in Bee Slough needs to be addressed and gotten rid of. Creating a wetland near Bee Slough could be an option, but adding it near private property will be a challenge.

Question: How will this project affect homeowners?
Answer: Overall, there will be an impact on homeowners through rate increases. Homeowners need to be cognizant of current developments in the planning stages.

Question: How do we effectively clarify the sewage issue in Ohio River and Pigeon Creek? Can we tie it into human health concerns?
Answer: During Indianapolis' efforts, they chose to emphasize unsanitary conditions that constituted health and disease-related concerns. There are several ways that *Renew Evansville* can approach this issue: through money saved on healthcare costs as sewers are improved, through job creation, or through green initiatives that will be undertaken. Borshoff will incorporate elements of all these issues as they develop public outreach materials.

Question: Will the EPA take into account the outfalls on Pigeon Creek and the Ohio River, or the natural excrement that also pollutes the water?
Answer: The EPA is very focused on the recreational areas of the Ohio River. When looking at the plan in a broader scope, Evansville is very different than other cities. Indianapolis used to use every drop of the White River, and the St. Joseph River in South Bend is very different in size and scope. Jim believes that Evansville will have a very small, almost flipped, inflection curve when weighing cost benefits and scope of the project.

Question: Is there any way that residents can be made aware of downspout issues that cause problems for the sewer system?
Answer: The bottom line would be to disconnect any downspout or sump pumps that are connected into the combined sewer system.

Question: What resources are available to fund this project?
Answer: Federal monies and large grants, like the ones that were available when wastewater treatment plants were initially constructed, have all been used up, but there are a few smaller loans and grants to take advantage of. Most of the project will be funded through ratepayers and a rate increase.

3) Next Steps:

- CAC members agreed to meet on a monthly basis over an extended lunch period.
- The meeting adjourned at approximately 1 p.m.

-End-

Appendix A.2

April 25, 2012
Location: Downtown Central Library

Attendees: Debra Bennett-Stearsman – Economic Dvmt Committee of Southwest Indiana
Patrick Keepes – Evansville City Engineer
Cheryl Musgrave – Keep Evansville Beautiful
G. Michael Schopmeyer – Kahn, Dees, Donovan and Kahn, LLP
Brian Swenty – University of Evansville

Project Team: Jim Garrard – Evansville Water and Sewer Utility, *Renew Evansville*
Vivian Holiday – Evansville Water and Sewer Utility
Michael Labitzke – Evansville Water and Sewer Utility
Harry Lawson – Evansville Water and Sewer Utility
Allen Mounts – Evansville Water and Sewer Utility
Paul Amico – CH2M Hill
Katelyn Milius – CH2M Hill
Lynn Wile – CH2M Hill
Tim Coxey – Borshoff
Danielle Falconer – Borshoff

Purpose: To provide a general overview of Evansville's wastewater infrastructure and review integrated overflow control plan developments.

Discussion: Paul Amico gave perspective on the current wastewater and stormwater system in Evansville and its characteristics (see PowerPoint presentation).

1) General Information:

- Paul Amico opened the meeting at 12:15 p.m. and encouraged CAC members to ask questions throughout or pause to clarify any unfamiliar terminology.
- This CAC was created to serve in an advisory capacity and provide valuable community input. The CAC consists of representative stakeholders who meet regularly to discuss common concerns about the project.
- CAC members were each given a contact sheet and a copy of the PowerPoint presentation. The presentation used Google Earth to pinpoint important aerial locations, and printed maps of the Utility's service areas were displayed around the room.

2) PowerPoint Presentation:

- **General Overview of Evansville's Wastewater Infrastructure**
  - A picture from the March 22 CAC meeting was used to repeat the concept of Evansville's combined sewer overflows (CSOs).
  - The EWSU system is comprised of two wastewater treatment plants (East Plant, capacity 22.5 million gallons/day (mgd); West Plant, capacity 35 mgd), 92 lift stations and 833 miles of combined and separate sewer lines.
    - East plant covers area from downtown to Veteran's Parkway.
    - The West plant, expanded in 2009, covers the levee at Tekoppel Ave. to the Broadway Ave. area.
  - The West plant was expanded in 2009, bringing it to a larger capacity. The need for larger capacity was not related to dry-weather conditions.
  - Both plants service approximately equal parts of the city. (12 to 14 mgd per station.)

- The collection system is comprised of:
  - 60% combined sewer system
  - 40% separate storm/sewer system
- There are 92 lift stations, which is a large number for a city the size of Evansville. Geography of area (hilly terrain), combined with deep gravitational pull from the Ohio River, make it necessary for more lift stations to pump sewer water to other parts of the system.

- **Review Evansville's CSO Characteristics**
  - Sewer water that exceeds the capacity of the Weir Wall will flow directly into waterways and not toward a treatment plant. This is especially noted at several outfalls along Pigeon Creek.
  - Evansville has 22 CSO outfalls that create an annual average overflow of 4 billion gallons. Evansville overflows about the same volume as Louisville.
  - The system currently captures and treats one-fourth inch of rain during wet-weather flow (out of combined system and into pipes for treatment). This makes approximately 25% to 30% of total wet-weather flow.
  - Many variables are involved in wet-weather capture, including where and how it rains. It doesn't take much to create a variable.
  - The Ohio River, Pigeon Creek and Bee Slough all contain CSO outfalls.
  - Federal CSO policy requires 75% to 100% capture of overflows. The EPA understands 100% is unrealistic, but it wants cities to hit a high percentage capture rate.
    - An engineering analysis found that Evansville's percent capture target is based off the year 2000 – a typical storm weather year for the city.
    - Estimates are based off of the expectation of one major storm occurring every two years.
    - 100% capture would mean collecting and treating overflows from about 3.5 inches of rain in a 24-hour period. (This is not financially possible for the city, but gives a target framework.)
    - EPA will monitor Evansville's investments. EWSU plans to model the CSO plans to make sure our planning and investments will make every effort to meet the goal.

Question: Does Evansville have two to three overflows per location of outfall?
Answer: No, two to three overflows system-wide.

Question: What is the breakdown of 4 billion gallons? Can we divide it between commercial, residential and industrial?
Answer: Stormwater makes up 99% of water. Most of the overflows are occurring within residential areas.

Question: Who do we partner with to minimize run-off?
Answer: Initially, rate increases are needed to generate capital. However, this project will take a combination of partnerships; the "holy grail" of sewer operations is working with other organizations to control issues.

Question: How do you compel people to build a site with "green" efforts (permeable pavement, etc.)? Louisville installed rain barrels at no cost to residents.
Answer: It's ideal when EWSU can get brought into a construction project at the very beginning design stage to discuss solutions.

Question: Is Indianapolis subject to the same percentage capture rate since they are dumping into a smaller body of water? Seems like Indy should be targeting closer to 100% and Evansville closer to 75% because ours is more diluted.
Answer: Evansville should look at the cost benefit according to our CSOs, and it will be much closer to 75%. We will negotiate that with the EPA: Our system will closely mirror Louisville, but we have to make sure we don't get stuck compared to other cities that do not have the geography that Evansville does.

- **Describe East and West Systems**
  - East Service Area
    - Denoted in green and is responsible for treating 18 million gallons of sewer water a day. Includes Bee Slough and the East wastewater treatment plant.
    - Most lift stations are found in Lloyd Express trunk system. This system only carries sanitary sewer lines under the expressway.
    - The city is heavily impacted by the river. When the river is up, everything has to be pumped up by the levee. We have had off-the-chart rainfalls the past several years.
    - CSO outfalls along the Ohio River are the largest CSOs in the system. They carry sewer overflows from the entire area.
    - The southeast-side areas subject to stormwater flooding are in their last phase of improvements.
    - Weinbach is a major lift station – flows down to treatment plant.
    - The East treatment plant processes all solids from the system. The West and East solids get pumped to the landfill together to create cover.
  - West Service Area
    - Compared to the East, this system is more complex.
    - The West system flows to the 7th Ave. lift station and cannot go past Pigeon Creek. Therefore, the Pigeon Creek lift station is the main vein to the station. The current system takes sanitary flow by gravity into the Pigeon Creek interceptor (PCI).
    - Diamond Avenue trunk contains the largest upstream CSO along Pigeon Creek (CSO 025) and is located near Diamond Ave. and Heidelbach Ave. The stormwater pipe is 90 inches in diameter and the combined sewer pipe is 36 inches. Both run under Diamond Ave. This creates an opportunity to reassess and use the 90-inch pipe for alternate purposes as we plan.
    - The 7th Avenue lift station is 40 feet deep.
    - With more sewer traffic flow, the Evansville system does not get larger around congested areas.
    - The system is largely under water, which means there is not much corrosion. That's due to lots of stormwater.

Question: Why aren't we just putting in pipes to capture waste and not water?
Answer: This may not be our only option. We have to alleviate both storm and wastewater overflows because they work together and come out of the same budget.

Question: Shouldn't we have built a Pfeiffer Rd. plant?
Answer: The disadvantage at Diamond Ave. is that 10 million gallons flow through its system at its peak. It discharges 3 million gallons in a day. The sewage flow is a small percentage of the CSO that the plant would have done nothing. The stormwater is the issue, and the Indiana Department of Environmental Management confirmed this.

Question: Why don't we just dump the stormwater in Pigeon Creek at Pfeiffer Rd.?
Answer: Stormwater is also generated at the site. CH2M Hill has been modeling Pfeiffer Rd. for more than two years. It has been under water and flooded most of the time because it is heavily affected by creek water levels, and it is full because of stormwater.

Question: When did we stop pumping sewage into Pigeon Creek?
Answer: We stopped in 1955 when the 7th Ave. lift station was built. An alternate plan to build a wastewater treatment plant downtown was discussed, but residents and businesses understandably did not want it.

- **Review IOCP Development Activities**
  - Includes two capital projects.
    - Long-term CSO control.
    - Sanitary sewer remedial measures that will identify and correct infrastructure defects that cause or contribute to sanitary sewer overflows.
  - The goal of the IOCP is to provide the highest level of service at the lowest life cycle cost. The PCI used to fill over capacity and cause water to reverse its flow back to the interceptor. To remedy the situation, engineers used an integrated approach to be as cost-effective as possible. It was the best return on the city's investment.
  - Overall planning goals of the IOCP include:
    - Maximize existing sewer infrastructure.
    - Seek green solutions that eliminate the need to transport and treat water that isn't necessary to treat.
    - Construct gray (new construction) infrastructure solutions.
  - If the city continues its interest in stormwater diversion plans in the downtown area, EWSU can work with these plans and keep storm water out of sewer lines as much as possible.
  - There have been more than 20 deliverables already submitted to the EPA and IDEM over the past two years. Many times, EWSU works on two to three deliverables at a time. These include a public participation plan, system characterization and evaluation, data analysis and monitoring. Those in progress include alternative analysis and final plan selection.
  - EWSU has completed about 30% to 50% of the IOCP, and it has regained credibility with the federal government with their work.
  - Smoke testing was performed on 10% of the system.

Question: Where can we view the consent decree?
Answer: It is available at www.renewevansville.com. Borshoff will send a link once it's available.

- **Discuss Findings and Possible Solutions**
  - East Service Area
    - Possibly expand capacity of wastewater treatment plant. EWSU knows it has to build a bigger system at some point.
    - Restore Bee Slough in a variety of ways, including a wetland treatment. Needs creative thought that goes beyond getting by with what the EPA allows. Right now, pollution and sewage is visible, so it is very important for the public to see ways of improving the area. This will need to be discussed further in meetings.
    - Pigeon Creek CSOs

        - Oak Hill is a slam dunk. Stormwater infrastructure is working and there is room for storage. It is not necessary to build relief sewers in outlying areas to remedy stormwater intake.
        - A gray solution is necessary and will be mandated by EPA for the downtown area. Fixing sewage and stormwater systems underneath a street is already the most cost-effective way to fix the infrastructure. However, bringing green infrastructure to the table is up for discussion and helps the public "see" the solutions in place.

Question: Where does the Bee Slough discharge go?
Answer: Covert Ave.

    - West Service Area
        - Wet-weather optimization of Pigeon Creek interceptor.
        - Adding green infrastructure – up for discussion.
        - Infiltration and inflow happen along US 41. The system has 90-inch sewer lines full of sewage, but also has 90-inch stormwater lines that are not. There might be potential usage from the unused stormwater lines.
        - It would be best to move forward on treatment plant expansion, CSO storage, conveyance and treatment once EWSU analyzes and estimates how much stormwater can be taken out of the system.
        - The city cannot afford to move forward fixing both separate and combined sewer systems.
- **Key Dates/EPA Submittals/What's Next**
    - On July 31, a draft IOCP must be complete and ready for public comment. It must be very focused and provide options. EWSU should have a goal of about two to three options available with different cost levels. EWSU should maintain control of options and proposals. The public should see a list of proposed projects, recommendations and maps within a binder.
    - The final IOCP must be complete, with public comment, by Nov. 30.
    - Currently, EWSU is evaluating:
        - Green infrastructure projects like bioswales, rain ducts, rain barrels, eco-treatments – creating wetlands or swamplands that speed up a natural process to allow water to flow underground naturally
        - Benefits of implementing sewer separation projects and infiltration/inflow projects.
        - Pigeon Creek interceptor flow maximization strategies.
        - Wastewater treatment plant expansion alternatives.
        - Funding options.
    - Evansville is 10 years behind other cities in like circumstances; but, the city is in a position to capitalize on seeing the success or failure of other plans, as well as more accurately estimate costs.
    - The themes for this project:
        - Make the best use of the city's investment and to implement solutions.
        - Keep stormwater out of the system when we can. We don't want to treat water we don't have to.
        - The sewer is the largest capital investment as far as assets. Rivals the road system.
    - Outreach of *Renew Evansville* will begin with the launch of RenewEvansville.com on Friday, April 27, and a news release the week of April 30. *Note: delayed until May 2.*

Question: What is the state of mapping stormwater in the city? Can we discuss adding retention ponds? Is redevelopment at the table, and can redevelopment projects provide land to use for green initiatives when targeting stormwater control?
Answer: These are all topics that can go into planning. Retroactively, it might be difficult to add retention ponds, but if there is room, and a desire, it could be a solution.

Question: Would demolishing housing in southeast side development solve some sewage issues?
Answer: No because it doesn't really address the larger problem. It would just displace people. Adding a storage tank or retention pond would not be an effective alternate solution either.

3) Next Steps:

- The next meeting date will be held at 11:30 a.m. Thursday, May 17, at the Downtown Central Library. A fourth meeting will be scheduled for early June.
- The meeting adjourned at approximately 1:40 p.m.

-End-

Appendix A.3

May 17, 2012
Location: Downtown Central Library

Attendees: Dona Bergman – Evansville Department of Sustainability, Energy and Environmental Quality
John Blair – Valley Watch
Donna Crooks – Growth Alliance for Greater Evansville
Pat Keepes – Evansville City Engineer
Cheryl Musgrave – Keep Evansville Beautiful

Project Team: Jim Garrard – Evansville Water and Sewer Utility, *Renew Evansville*
Jenny Collins – Evansville Water and Sewer Utility
Vivian Holiday – Evansville Water and Sewer Utility
Michael Labitzke – Evansville Water and Sewer Utility
Harry Lawson – Evansville Water and Sewer Utility
Jeff Merrick – Evansville Water and Sewer Utility
Allen Mounts – Evansville Water and Sewer Utility
Paul Amico – CH2M Hill
Miles Hebert – EMH&T
Doug Turney – EMH&T
Nick Jahn – VS Engineering
Tim Coxey – Borshoff
Danielle Falconer – Borshoff

Purpose: To provide a general overview of Evansville's wastewater infrastructure and review integrated overflow control plan developments.

Discussion: The engineering firm EMH&T presented conceptual strategies and potential renderings of green infrastructure opportunities for the wastewater and stormwater system in Evansville (see PowerPoint presentation).

1) General Information:

- Jim Garrard opened the meeting at 11:35 a.m. with introductions.
- This CAC was created to serve in an advisory capacity and provide valuable community input. The CAC consists of representative stakeholders who meet regularly to discuss common concerns about the project.
- The PowerPoint presentation modeled and explained green infrastructure solutions in relation to the Integrated Overflow Control Plan for Evansville. The presentation was led primarily by Miles Hebert from EMH&T, a City-contracted engineering firm.

2) PowerPoint Presentation:

- **Integrated Overflow Control Plan (IOCP)**
  - Includes two capital projects.
    - Long-term CSO control.
    - Sanitary sewer remedial measures that will identify and correct infrastructure defects that cause or contribute to sanitary sewer overflows.
  - EWSU would like to address how separate and combined sewer systems can work together to create a linear project scope.
  - Overall planning goals of the IOCP include:

        - Maximize existing sewer infrastructure. We will discuss a few opportunities concerning storm sewers on the West side.
        - Aggressively seek green technologies that eliminate the need to transport and treat water that isn't necessary to treat. According to the EPA, we want to "slow it down, spread it out and soak it in."
    - Construct gray (new construction) infrastructure solutions.
- **What Is Green Infrastructure (GI)?**
    - Miles Hebert: Not necessarily referred to as the use of plants, but designed to mimic natural processes.
    - The technologies presented today are all appropriate for Evansville.
    - Examples include pervious pavement and curb extensions to slow water down so it slowly releases into the stormwater system.
    - Downspout disconnection, rain barrels and retrofitting parking lots are also part of the toolbox of initiatives for Evansville.
- **Potential East System GI Solutions** *[slides 11-25]*
    - Engineering analysis, data collection, modeling and mapping mimics very well what the gray infrastructure team is doing. We will marry these efforts up at the end.
    - Planning has had to consider overlapping initiatives that are ongoing or have occurred in the past. These initiatives will provide valuable information on ways that we can incorporate green technology.
    - Three main target areas for inserting GI into ongoing projects include the
        - Jacobsville redevelopment area;
        - Downtown master planning area – changes to traffic flow, street character, using green roofs and green streets;
        - Arts District – preservation and redevelopment, brick streets, wide streets, renewal and revitalization.
    - Opportunities and Constraints
        - High infiltration zones (opportunity).GI is very incumbent on soil types, and Evansville is fortunate to have an area of deep sand and gravel that can soak in the water.
        - Low-lying areas/floodplain (constraint).The area is protected by the levee, but the engineering team has decided to stay out of that for a variety of reasons.
    - E-1, E-2, E-4 areas – there is no sewer separation to tap into. Paul eluded storm sewer could be extended in some areas, but it is not a possibility here.
    - EMH&T configured a scoring system that would give a representation of which areas are ideal for GI initiatives. Their scoring system took into account flood zones, street slopes, street type, redevelopment, number of travel lanes, tree canopy density, geology and proximity toward a combined sewer (CS). Scores were overlaid onto a map of the East zone. The map revealed high potential for green infrastructure planning in key areas of the downtown grid.

Question: Why do high density tree canopies negatively affect scoring for green infrastructure?
Answer: Tree canopies and their leaf litter provide a maintenance burden for pervious pavement applications. If it's an older, established neighborhood with a dense tree canopy, it would create a smaller negative.

    - Focus on Vine Street
        - Improvements include bringing four lanes down to two, pervious permeable pavement in the parallel parking spots, bike travel lanes added based on

feedback from the downtown master plan and a tree canopy in Bicentennial Park.
        - EMH&T provided a rendering of what Vine Street would look like when green solutions were implemented.
        - A cutaway view of the system showed sand and gravel area below, under-drains connect into a dry-well (manhole).
        - There are lots of connecting downspouts from nearby buildings going into the same system. Engineers can't intercept those, but we can change that in the residential areas by getting downspouts from individual homes out of combined sewer and into a separate capture system.
        - City has widely spaced catch basins (about 200-300 ft.)
        - Pervious pavement will act as one continuous catch basin. Water drains through pavers and into an under-drain that is not seen.
        - This type of treatment is more cost effective than a gray infrastructure solution. The sand and gravel layer and low flood plain issues require gray infrastructure to go much deeper into the ground than green infrastructure would.
    - EMH&T modeled and analyzed GI results from a typical year of rainfall and demonstrated what would happen in the combined sewers. It showed a downward trend in overflows.
    - There is an element of gray in the analysis. Most of the water and sewer from the East goes from the big areas to regulators and interceptor pipes before getting to the treatment plant. EMH&T feels there are small improvements that can be made to the pipe, which will have an effect on CS overflows to Ohio River.
- **Potential West System GI Solutions**
    - West system poses different opportunities, constraints and solutions.
    - The focus will be on Subbasins W-5 and W-2 and optimizing existing system. The city has already been implementing significant sewer improvements, including taking storm water out of the system.
    - Virginia St. system that falls out to Pigeon Creek has stubs, allowing the system to be expanded. The EHM&T team is looking at optimization of that scenario.
    - EMH&T is looking at even more scenarios (purple shaded area) to bring optimization of green infrastructure to expand tributary area and take water out of combined sewer.
    - Analysis of a fully optimized GI system in the West section showed a doubling in the percentage of CSOs reduction.
    - The West side is the same concept as the East side. It incorporates the same toolbox (green alleys, pervious pavement, public parking lots).
    - Green infrastructure programs needs to have a focus on public and private ownership opportunities. Both need to interact to achieve a common goal and do it in a way that's conducive to the overall program.
- **Discuss GI Project Prioritization**
    - Nick Jahn from VS Engineering has been brought in to the EMH&T team to work through cost analysis and prioritization.
    - The scoring criteria are very objective and are in close relationship with the City's goals. It uses a method called the Triple Bottom Line, and it allows a community to capture (and rank) monetary and non-monetary values when determining the feasibility of capital improvement projects.
    - Two projects can be compared side-by-side to objectively look at the opportunities for green infrastructure.

- Green infrastructure brings social and environmental metrics to the table and requires the City to weigh in on the benefits. The teams are just getting started in the process, and EMH&T plans to form preliminary action steps in the next month or two.

- **Graphics**
  - Green roofs – example given on how to augment new construction with GI.
  - Adams Ave. in Arts district – near historic theatre purchased by DMD.
    - This is a good example of improving streets beyond CSO issues. Pervious brick streets work well here because it's residential; a historic area that already has brick streets and not heavily traveled.
    - Water quality device and drywell – A simpler approach (still called green infrastructure) and uses existing and new inlets. This would be a lot less expensive than other improvements we were looking at.

Question: What kind of maintenance is needed on a drywell device potentially used for Adams Avenue?
Answer: About once a month, a City or a city contractor would have to pump out the collection of water and debris.

  - Parking lot scenarios – simple, cost effective options include:
    - The use of pervious pavement, which wouldn't interrupt parking spots.
    - The use of tree islands with underdrains that go to a drywell system. The drywell would direct to a sand and gravel layer.
  - Pocket Park concept (Governor St.) – City has a land bank on the fringe of the arts district. The location could become host to an attractive feature for the neighborhood. It could also be multi-purpose so it gives back to the community and creates value to the land around it.
  - Washington Avenue – retrofitting parking lots with pervious pavers.
    - This is an example of needing to create a separate infiltration gatherway instead of having a drywell because of spacing of infrastructure.
    - Washington Ave. doesn't have a lot of storm sewer pipes. But, it has great soil to work with to use infiltration systems.

Question: Seeing the drywell examples, what is the magnitude of systems needed? Dozens? Hundreds?
Answer: Somewhere between hundreds or thousands. We are looking at widespread green infrastructure applications. In order to plan, we will say we want green solutions from one intersection to another intersection. We'll point out specific blocks within the city. There is going to be a large number of projects, and many public parking spots will be big wins. Paul Amico: From an overall overflow control plan perspective, we know this plan has to be implemented over 20-25 years. Near-term projects will address the greatest needs, which are the CSOs that are hardest to control. In one of the upcoming meetings, we'll show you sequencing of projects over the next few years. This planning depends on how aggressive the city wants to be in terms of the social and environmental factors aside from the sewer and traffic disruption.

Question: Since EMH&T has worked on other cities' projects, could you discuss incentives and public-private partnerships revealing themselves, especially from the early stages?
Answer: In Fort Wayne, the city developed their IOCP without implementing green infrastructure systems. Soon afterward, they came back and asked for help in understanding how to get rid of some of the gray and bring in green infrastructure. EMH&T wanted to take any public improvement project and put green infrastructure into it and they see that it

can bring about quick wins. Paul Amico: Our experience is that the coasts pioneered this. (Portland, Oregon was one of the first). Most recent success is seen in Syracuse, NY. They've seen a dramatic reduction in CSO volume and saved money on long-term control plan. This is a good news and bad news situation for Evansville. The City is behind with consent decree negotiations, but the City is also one of the first that will aggressively incorporate GI. Other communities are now back-tracking to include more green. Evansville can learn more about the performance of the green technologies by examining other cities using it, and we can approach it with eyes more open. In the past, engineers could easily model and predict the benefits of gray infrastructure. Today, there is more prediction around green infrastructure. In fact, the EPA model now includes green infrastructure variables. Evansville is in a good negotiating perspective because we haven't agreed to anything yet.

Question/Comment: Please speak to maintenance. As we plan and identify where we're going to do this, will maintenance become a key part of the planning?
Answer: One of the criteria of our scoring system is lifecycle cost, which includes maintenance. In terms of the CSO control measures, we want to make sure the water is disinfected before it hits the waterway. These green infrastructure systems will reduce how "nasty" the water quality is in the unit.

Question: As far as planting trees, is there a need to maintain the landscaping, especially with new pervious pavement options?
Answer: In the downtown core, pervious pavement fits the bill very well. We also have results from other projects to show pervious pavement reduces lifecycle maintenance costs.

Question: Do you have plans for Bee Slough?
Answer: The next CAC meeting will discuss this issue. Currently, the project team is looking at wetland options. It is potentially a big project, and something will happen because some of our largest outfalls are in that area. Nearly 30% of the total overflow comes off that system. By looking at how much we'd need to incorporate green infrastructure to make a difference in that area, we know it will become a large, expensive undertaking.

- **Next steps**
  - The next CAC meeting will be in June. The team will discuss Bee Slough as well as upgrades to wastewater treatment plants.

  - The meeting adjourned at approximately 12:40 p.m.

-End-

Appendix A.4

June 20, 2012
Location: Downtown Central Library

Attendees: Donna Crooks – Growth Alliance for Greater Evansville
Chris Cooke – UNOE
Pam Guthrie – Old Evansville Historic Association
Mike Schopmeyer – Keep Evansville Beautiful; Kahn, Dees, Donovan and Kahn, LLP

Project Team: Jim Garrard – Evansville Water and Sewer Utility, *Renew Evansville*
Carl Gist – Evansville Water and Sewer Utility
Michael Labitzke – Evansville Water and Sewer Utility
Harry Lawson – Evansville Water and Sewer Utility
Jeff Merrick – Evansville Water and Sewer Utility
Allen Mounts – Evansville Water and Sewer Utility
Paul Amico – CH2M Hill
Lynn Wile – CH2M Hill
Erin Pipkin – Borshoff
Danielle Falconer – Borshoff

Purpose: To provide a general overview of Evansville's wastewater infrastructure and review integrated overflow control plan developments.

Discussion: The engineering firm, CH2M Hill, presented potential approaches to combat the combined sewer overflows, as well as a potential solution to addressing Bee Slough.

1) **Timeline for plan development**
   - June
     - Complete development of overall technical solution
     - Determine level of control and financial burden
     - Complete outline and first draft of IOCP
   - July
     - Second draft of IOCP
     - Seek plan approval from Mayor Winnecke, Utility Board and CAC
     - Pre-submittal meeting with EPA and DOJ
   - August/September
     - Outreach to neighborhood groups and civic organizations
     - Hold at least four public meetings to solicit public input
     - Compile public comments for EPA
   - October/November
     - Negotiations with EPA
     - Final plan development
     - Potential dispute resolution with federal court

2) **System characterization - Required component of the IOCP**
   - Two wastewater treatment plans
     - East WWTP peak wet-weather capacity: 22.5 mgd
     - West WWTP peak wet-weather capacity: 35 mgd
       - Discharge limits to the river are set around these numbers

- Collection system
  - 833 miles of sewers
  - 60% combined and 40% separate storm/sanitary
  - Treatment is divided evenly between the WWTPs
  - 92 lift stations
- 22 CSO outfalls
  - Discharge 3 billion gallons per year
  - Discharges go to Pigeon Creek (along Weinbach), Bee Slough and at bend in Ohio River
  - Anything over a quarter of an inch overwhelms the system and 70-75% of wastewater goes out to the river untreated
- Hydraulic Models – Flow based on 2000 data, CSOs based on 2011 data
  - Pigeon Creek 1,675 MG; 9 CSOs (more than half of overflow) – ultimately discharges to Ohio River
  - Bee Slough; 806 MG; 3 CSOs
  - Ohio River; 714 MG; 10 CSOs
  - These are existing numbers; future numbers will have to consider growth
- East WWTP service area
  - A smaller sewer shed or service area than the west.
  - Overflow is by Casino Aztar and mostly submerged under water unless river is very low.
  - Other is at Bee Slough
  - Weinbach or Oak Hill on Pigeon Creek is the other outfall area
  - $100 million in improvements on the southeast side remedied backups getting into the streets or peoples' homes, which is much worse than ponding because people had direct contact with sewage.
  - Ultimately affected the Bee Slough outfall. That outfall has seen a reduction because of that project.
  - Cass Ave. and Adams overflows go into Bee Slough. WWTP Headworks overflow also contributes to Bee Slough.
  - Typical year: 222 events; 36 activations (looking at reducing this number); 1,373 MG (looking at reducing this number); most occur along Kentucky Ave.
  - One third of rain events produce overflows.
- West WWTP service area
  - Major interceptors – Pigeon Creek and 7th Ave.
  - Pigeon Creek interceptor captures most of the flow in the west WWTP service area. Its effectiveness depends on how the river works with the system. The Army Corps of Engineers controls the levels of Pigeon Creek and the Ohio River (as does rainfall).
  - Service area characteristics: Diamond Ave. is the largest CSO; also the farthest away from the treatment plant, which gives us limited solutions at Diamond Ave.
  - Delaware is also a large overflow at Pigeon Creek.
  - When some systems have been improved, Diamond Ave. has overflowed more.
  - 1,821 MG, 293 overflow events and 48 activations

Question: We're looking at year 2000 rainfall. It's wetter now. Are you guys looking at that?
Answer: We take weather patterns and changing climate systems into consideration. We use the typical storm data approved by the EPA for 2006/2007.

- Water quality impacts: SRCER (Stream Reach Characterization and Evaluation Report)
  - In Indiana, the SRCER is the 9th minimum control
  - From 1996 IDEM CSO Control Strategy
  - SRCEC identifies quick, inexpensive solutions to pollution
  - In Indiana, we have fishable, swimmable solutions. Bacteria are the only pollutants of concern in Evansville's water quality report.
  - Pigeon Creek CSOs tend to have lower bacteria levels than Ohio River CSOs.
  - To completely eliminate CSOs, Evansville would have to collect and treat 3 to 5 inches of rainfall in a 24-hour period.
  - Even if CSOs were eliminated, the quality of Pigeon Creek won't be completely improved because the water is dirty when it gets to Evansville.

Question: Did your study reveal Atrizene (fertilizer) in the water?
Answer: Atrizene was not identified as a major pollutant. We determined most of the water quality issues in Pigeon Creek happened upstream.

Question: We're handling Elberfeld, right?
Answer: No, we need to go back and look at the 2000 study.

- SRCER (cont'd)
  - Ohio River designated as sensitive area because of human use
  - Pigeon Creek was designated as a priority area
  - Federal CSO policy requires 75-100% capture
  - Zero to 12 days of activation per year, subject to affordability
  - 100% capture in Evansville would mean collecting and treating 3.5 inches of rain in a 24-hour period
  - Evansville cannot do 100% capture
  - Presumptive approach (85% or 6 captures per year) vs. demonstration approach (go through a process with the state of Indiana to determine how you achieve 85%). We believe demonstrative makes sense for Evansville.
    - This is the guiding policy

3) The Plan

- West Service Proposed improvements
  - In order to reliably treat this flow on a consistent basis, Evansville needs a more modern, reliable facility that's easier to operate.
  - Expand wet weather treatment capacity from 35 MGD to 50 MGD
  - Replace and expand headworks, which will match peak secondary treatment capacity
  - Upgrade disinfection system
  - Eliminate bottlenecks
  - Option – Install a 5- to 10-million gallon underground storage tank at Howell Park
    - A gravity in, gravity out process requires no power
    - During rain events, main pipes flood above where they normally are at dry weather
    - Push water into equalization basins. Those basins can drain by gravity and pump into the plant. [See footprints, photo next to school.]
    - Something could be placed on top of it (basketball court; baseball court, etc.). Can more accurately predict where overflow goes in rain events.

Question: How long does that take to construct?
Answer: One to two years.

Question: Did you realize the largest youth football program in the city is run there? That white building is their concession area. Mater Dei and Reitz feeder program plays there.
Answer: No, but that is one of the benefits of presenting these plans to a Citizens Advisory Committee. You can help us identify local issues that may impact planning. With that in mind, we can consider one 5 MG storage tank only.

Question: We did a headworks project on the east side a few years ago. Didn't that solve the problem?
Answer: That $23 million project only improved the East WWTP. The West WWTP headworks are 55 years old.

Question: So, we didn't expand or replace headworks on west side?
Answer: We did other improvements.

- Option - Replace 7th Ave. lift station at Fulton Ave., which is more than 50 years old
  - Increase pump and storage capacity
  - It is cheaper to replace it than to modernize it
  - Water can be treated on site

Question: Why not treat it before it goes to Diamond Ave. interceptor on the north side? Population growth is going to be to the northeast. We bought all that land when we considered building a third WWTP.
Answer: The overflow issue at 7th Avenue is generated in a different part of the service area. The area to the east causes the CSOs along lower Pigeon Creek. Hydraulically speaking, those things are separate issues.

Question: Any growth in the northeast will have a separate system anyway, right?
Answer: Yes

- Option – Fulton Avenue CSO storage/treatment tank (sampled from Dearborn, Mich.)
  - Dearborn has geology similar to Evansville's with glacial outwash, including sand and gravel. It makes construction challenging.
  - 105 feet wide
  - 100 feet deep
  - 5-million gallon round tank
  - Team has been talking with the manufacturer to see if the tank can include the ability to treat wastewater on site
  - Suggesting for storage along Delaware and Maryland
  - We think this has a lot of promise. If this performs as expected, could save Evansville money as opposed to pumping and treating. This is a complete gravity solution.
  - Settles the solids out and charges the water out
  - Cost - $40 million - $45 million

Question: Where you're proposing it is the highest traffic flow in the community along the Lloyd, right? Why does it have to come out of the ground? Can it be covered or have trees planted around it?
Answer: Yes, it could. We probably have the ability to discharge it underground because our waterways are lower than in Dearborn.

- Option - Delaware Street CSO control facility
  - Army Corps of Engineers (Corps) like deep storage because construction is reliable and they have experience with it. Don't want us to dig deep holes next to the levee.
- Option - Maryland Street CSO facility
  - Challenging site
  - This outfall is very deep (40 feet below ground)
  - Lose storage volume because outfall is so deep
  - Bedrock is 80 feet here; not the typical 100 feet
  - There are railroad tracks right there
  - May be able to build a storage tank and build a parking lot on top
- Option - 6th Avenue facility
  - Facility to screen and disinfect water
- Option – Oakley Street facility
  - Facility to screen and disinfect water
- Option - West Service area proposed upper Pigeon Creek interceptor improvements - Diamond Ave. CSO facility
  - Redirect Baker Street CSO to Diamond and discontinue use of outfall for "typical year" storms
  - The interceptor is 90 inches now; may be able to store water there instead of building a new, deep facility
  - Flows and peak rates in Pigeon Creek interceptor are huge
  - Wet-weather treatment plant
  - Chemically enhanced treatment. Put chemicals in this to promote settling.
  - Example - Tampa Bay's versatile treatment technique; 66-million gallon capacity

- East Service Area
  - Proposed WWTP improvements
    - Expand wet weather treatment capacity from 22.5 MGD to 40 MGD
    - Bypass and manual screen in headworks
    - Increase secondary treatment capacity
    - New UV disinfection system
    - 40 MGD effluent pumping station
    - Bee Slough has obvious sludge problem. Removing water from the sludge will allow us to treat it more efficiently. Currently, plant effluent sits there.

Question: Why have you begun to consider UV disinfection?
Answer: We reviewed information on UV and determined it's much cheaper, good for air quality and safer for employees. West side will still be chlorine. Bleach is a lot safer. Not as toxic. UV allows higher capacity.

- Option – 40 MG effluent pumping system downtown treatment that combines green and gray infrastructure
  - Green infrastructure in sub-basins E-1, E-2 and E-4
  - Storage would be located underground
  - Increase conveyance capacity of several downtown CSS trunks
- Option - Oak Hill
  - Implement stormwater master plan projects to reduce inflow in the basin
  - Construct storage and treatment for residual overflow
  - Will need to look at storage in that system
- Option - Bee Slough wetland concepts
  - Team has discussed wetland solutions before.

- Wetlands are ecosystems characterized by extended periods of saturation resulting in hydric soils and dominated by vegetation adapted to such conditions.
- Capture and treat 100% of CSO volumes from CSOs 001, 002 and 004 (at Kentucky, Cass and Adams)
- Pre-treat CSO discharges prior to discharge
- Benefits and components of wetland concept
  - Keeping a little bit of water helps pre-treat sludge and pollutants
  - Manmade system designed to replicate the physical and ecological components
  - Uses natural treatment processes: national sedimentation, BOD (Biochemical Oxygen Demand) reduction, disinfection processes
  - Saves energy
  - Uses no chemicals, produces no residuals
  - Provides habitat for wildlife
  - Provide opportunity for education
  - Looks nicer for community; creates an amenity the city can be proud of
  - The greenway could be extended to include the wetland
- Wetlands for water treatment
  - 50 years of experience
  - Many different treatment technologies developed
  - Robust natural processes create a natural habitat
  - 10s to 100s of species
  - Can be scaled
- Wetland types
  - Domestic - single households or small towns
  - Municipal – larger cities and commercial centers
  - Industrial – food processing, pulp and paper, landfills, petrochemical, mining
  - Agricultural – confined livestock, crop production
  - Stormwater – Urban, industrial, CSOs, streams and river, non-point source
- Vegetation
  - Won't look like a swamp
  - Natural flora and fauna
  - Ector management (mosquitos, etc.)
    - Natural fish
    - Larval monitoring
    - Maintain habitat for natural predators
  - Examples:
    - Oregon
    - Kentucky
    - New York
    - Indiana
    - Europe
    - Washington, Indiana just opened
  - Pump the flow in, goes through a wetland, treats it through the wetland. Look at retention time or amount of time water spends in the wetland. Washington has a 5 million gallon storage tank.
  - A lot of airports use for de-icing operations
- UV and Outfall
  - Washington treats with UV
  - Has a liner
- Features of Bee Slough Restoration concept

- Option1: Incorporates treatment units. Only a handful in service in U.S. right now. Getting EPA approval on treatment technology. Would like to add coagulant to encourage settling and make them more reliable and pre-treat before it gets to the wetland. Treats at Kentucky Ave.
    - Wetland treatment on both sides of the road. Looking at about 40 or so. Needs to be 90 million gallons of storage. Concrete cradle would be removed.
    - Downstream, need to figure out what to do with the concrete cradle. Would recommend stream restoration. Will depend on performance of treatment center. We're proposing to construct this first so wetland serves as downstream solution. Looking at what Dearborn has done. Trying to not be on the bleeding edge of technology.
    - Recommending a 24-inch drain that comes back to treatment plant for residual flow. So, you won't have water sitting in the Slough for a long time. Also looking at all treatment as it comes in before it goes to wetland.

Question: You can empty it, but you have to recharge it at some point. Won't you just kill the wetland?
Answer: We're looking at it now. We need to keep section wet, and farther down, it could be a concrete drain.

Question: What does it look like in terms of retention time?
Answer: To really get effective treatment, it's one to two days. Can be less. Needs to be more than 30 minutes of detention time, which can barely be called treatment. Two days is what designers think is needed. Water would pond up 4 to 5 feet before it starts draining. There's a pipe under the ground right now.

Question: The effluent right now never crosses under the highway, right?
Answer: No, it crosses at Shawnee.

- The fundamental problem with Bee Slough is water sits there for several long days, which makes a compelling reason to separate effluent from those pumps. Those big pumps cost more than a separate effluent pump would.
- Option2: Roughly the same cost
    - Captures flow from metal culvert and drops down underground. Brought to Kentucky Ave. stations. Would be allowed to come over to wetland cell across the highway. Overflow would go into treatment area.
        - Gives us more detention time. Even though there's power here, it's using the entire area to treat overflow. Tradeoff is paying in piping.
        - Two treatment units v. one treatment unit and one pump station
        - Pump station and treatment unit

Question: How much green infrastructure is in the plan?
Answer: We're still looking at that. From a dollars standpoint, green infrastructure (GI) is not as effective, but there are other obvious benefits that need to be considered. Mike Labitzke has been leading a taskforce that has been exploring GI. Green infrastructure gets more expensive because we're in the downtown area. Usually other infrastructure is required.

Question: Why not desensitize the river like they've done in Louisville? Evansville has lots of docking space and can't dock because of the way the river is configured. Are we fools to not take that out? Louisville has a lot more boats in their riverfront.

Answer: We fought that fight during the negotiations. If you call it all sensitive, none of it is sensitive. There's a mussel bed south of the west plant outfall that they're trying to protect.

Question: How much time are you looking at to complete construction? If we were to have one of those heavy rain events during construction, what would we need to prepare public for? Would there be backups?
Answer: We wouldn't shut it off. You'd start at the outfall and work back. There will be provisions for flow handling. It's pretty open construction and it's offline. What will drive this project is cash flow, not affectability. Consent decree is 20+ years. Will see a lot of front-end activity – heavy in 7 to 10 years. The east side treatment plant alone should take 3 to 5 years, depending on rate models and cash flow Bee Slough could get done in 2-3 but more likely 4 years.

Question: Have vertical treatment tanks been tested for seismic activity like Evansville's?
Answer: We don't know. The tanks would be anchored to bedrock with extensive grouting. It certainly could be designed to handle our conditions.

4) General discussion

- At the next meeting, we'll talk about options for the separate sewer system.
- We'll likely have two meetings in July.
- For the next meeting, we'll map out a public meeting schedule (Aug/Sept).
- Jim has five to six neighborhood and community group meetings scheduled for August/September.
- We plan to loop the CAC in as public outreach advances and may lean on them to support our cause.

- Where has CH2M Hill worked on similar plans?
    - St. Louis, Cincinnati, Louisville, Kansas City
    - They were selected because they have been through this before

-End-

Appendix A.5

July 18, 2012
Location: Downtown Central Library

Attendees: Dona Bergman – City Office of Sustainability
Debbie Bennett-Stearsman – Economic Development Corporation
Bill Blair – Valley Watch
Chris Cooke – UNOE
Pam Guthrie – Old Evansville Historic Association
Pat Keepes – City Engineer's Office
Cheryl Musgrave – Keep Evansville Beautiful
Mike Schopmeyer – Keep Evansville Beautiful; Kahn, Dees, Donovan and Kahn, LLP

Project Team: Jenny Collins, Evansville Water and Sewer Utility
Jim Garrard – Evansville Water and Sewer Utility, *Renew Evansville*
Vivian Holiday – Evansville Water and Sewer Utility
Michael Labitzke – Evansville Water and Sewer Utility
Harry Lawson – Evansville Water and Sewer Utility
Jeff Merrick – Evansville Water and Sewer Utility
Paul Amico – CH2M Hill
Erin Pipkin – Borshoff
Danielle Falconer – Borshoff

Purpose: To provide a general overview of Evansville's wastewater infrastructure and review integrated overflow control plan developments.

Discussion: The presentation focused on the project team's July 12 meeting with the EPA, as well as the financial capabilities of the Utility and ratepayers to support the integrated overflow control plan (IOCP).

1) **Renew Evansville team update**
   - The team has been looking at different combinations of control level and costs to meet the requirements of the consent decree. At this point in the IOCP development, the team has identified a sizable gap between what they think ratepayers can afford and where regulators feel we should be in terms of managing combined sewer overflows (CSOs).
   - July 12 the team met with the EPA in Chicago. To date, the team has:
     - Submitted 20 consent decree deliverables over the past 18 months; met every deadline and avoided penalties
     - Processed more wet weather flow at the wastewater treatment plants (WWTPs) – 24 million gallons a day (MGD) at East; 35 MGD at West
     - Completed stress testing and implemented enhancements, including increasing the East WWTP capacity to 28 MGD
     - Septic elimination programs to bring sewers to two neighborhoods with septics on track for completion by December 2012
     - Four southeast side sewer separation and drainage projects are on track. Three are complete and the fourth should be complete in 2014. The cost for all four is $53 million.

2) **Recent progress**
   - Combined and separate system models developed
     - 2011 was the wettest year in Evansville's history
     - Additional flow monitors have been installed
     - West system model is more complex than East system
   - CSO alternatives analysis has been robust
   - SSRMP – completed review of targeted areas per decree
   - Updated FCA (building analysis) is being prepared for July 31 submittal
   - Draft IOCP is being prepared for July 31 submittal to public and agencies

3) **Financial issues - recent rate increases**
   - Five annual increases since 2007 amounting to 63% increase. The current average in-city rate is $32.95/month.
     - Increase has been dedicated to expanding capacity of the west WWTP and funding the southeast side projects.
   - Retirement of existing debt
     - Existing debt is $12 million/year until July 31, 2023
     - Debt load is then $11 million/year until July 31, 2031
     - All existing debt retired July 31, 2031
     - Some initial funds could be available at that point
   - Financial capability – capital needs
   - EPA pushes us to spend 2% of median household income over 20, 25 and 30 years (10% increase each year).
     - Pay as you go funding
     - Bond funding
   - Major cost components
     - Regular operating expenses
     - Capital infrastructure costs outside of IOCP
     - IOCP costs
     - Reasonable assumptions, interest rates, CPI, MHI growth, etc. EPA analysts have different approach than we have.
   - Optimized paygo and debt funding options project most capacity for capital funding

Financial capability – capital options
   - 20-year plan
     - $227 million in project funding
     - Avg. residential rate: $77.75/month
   - 25-year plan
     - $383 million in project funding
     - Avg. rate: $83.50/month
   - 30-year
     - $518 million in project funding
     - Avg. rate: 91.40/month
   - Shows what a certain level of CSO control will cost Evansville

4) **Summary of anticipated IOCP – Background and Evansville's CSOs**
   - 22 CSO outfalls
     - Combined sewer system (CSS) area – 17 square miles
     - Average annual overflow volume

    - Currently capture and treat less than 0.1 inches of rain (about 20-25% of wet-weather flow)
- Receiving streams. When the river is up, our system acts very differently and makes it harder to deal with river impacts.
    - Bee Slough
    - Ohio River
    - Pigeon Creek

5) Summary of anticipated IOCP - Unique challenges

- Large CSO volumes
    - Evansville average year CSO volume: 3.4 billion gallons (BG)
    - Fort Wayne - 1.1 BG
    - South Bend - 0.9 BG
    - Indianapolis - 7+ BG (four times the customers but only twice as much overflow problem)
    - Louisville - 4 BG
    - Milwaukee - 9 BG
    - Omaha - 3.5 BG
- Bee Slough's unique characteristics
    - 3 large outfalls
    - It is an eyesore and health risk
    - Bee Slough discharges are about 70% of the total volume discharged into the Ohio River.
        - Half and half discharge between Ohio River and Pigeon Creek
        - Bee Slough needs special consideration according to EPA
        - Bee Slough is not a navigable waterway
- Levee and river level impacts
    - Most CSO discharges are pumped by the Levee Authority Pump stations when level of Ohio River is high.
    - Most CSO outfalls pass through the levee.
- Something needs to happen at all of the outfalls to hold down activations. EPA wants to see single-digit activations at the outfalls.
- CSO controls will require deep excavations adjacent to the Levee; this makes the Army Corps nervous. Design and construction of this type are expensive.

6) Anticipated IOCP – Next steps

- Over the next few weeks, we'll stop focusing on West and East and will instead focus on the impact to the waterways – Ohio River and Pigeon Creek. Need to focus on entire system basis and streaming basis.
- Big takeaways: Bee Slough is a problem in terms of volume. Diamond Ave. is a problem in terms of size and overflow volume. Delaware St. also creates significant flow into Pigeon Creek.
- As we talked to other community members, CAC and the mayor, the highest priority is Bee Slough for obvious reasons. There are unique challenges to Bee Slough. The most notable portion of the solution is likely an all or nothing solution. Any solution that allows any overflow into Bee Slough wouldn't do anything to control the problem, because you'd still have solids sitting at the bottom. We think the wetland treatment is an elegant solution.

Question: Is that like the pit you showed at the last meeting? Would it rule those out?

Answer: No. What you're doing is stabilizing the soil around your excavation and digging out your middle. Our bedrock is sandstone, which is very productive, from a groundwater perspective.

7) Specific IOCP planning goals

- Remedy Bee Slough
- Maximize underutilized existing storm infrastructure by better utilizing what's in the ground today to store more water. The project team doesn't have time to really study options because of plan deadlines. What you're seeing today assumes most of the costs and solutions.
- Maximize use of green infrastructure
- Optimize Pigeon Creek Interceptor operations
- Provide necessary redundancy and backup power at 7th Ave Lift Station. Today, it doesn't have backup power and has one screen in there. It's very intensive to operate and maintain and doesn't meet current standards.
- Provide for better control of West WWTP influent hydraulics
- Cost effectively reduce inflow/infiltration
- Right size CSO controls to increase capture and treatment of CSOs system-wide

10) CSO Technical Approach

- We performed a process of screening out hundreds of alternatives by running a scientific process. After comparing solutions on a 40-year cycle cost, we looked at sustainability and good stewardship of the City's resources.
- East and West CSO
  - Storage until the rain passes and then flowing it to the plant when the rain passes
  - Green infrastructure where practical
  - Expansion of both treatment plants
  - Treatment plant CSO bypass
  - Sewer separation
  - Remote, high-rate treatment (3 units)

Question: Can you discuss how that storage process would work?
Answer: At Diamond Ave., we'd divert water into a storage tank during wet weather and it would go through an onsite treatment process. It's basically a treatment facility that achieves primary treatment. Water is treated by hydrochloride; only about 50% is removed, but otherwise all would go into the river untreated.

11) Analysis and recommendations for addressing CSOs

- We are continuing to refine and tweak this plan even today. Our goal is to reduce the number of CSOs to 11 to 14 each year.
- East service area
  - East WWTP expansion
  - De-bottleneck and utilize primary effluent bypass
  - Rehabilitate chlorine contact tanks to fully utilize 40 MGD capacity. Secondary process is to push out and hold for now. This would comply with CSO policy and can be done cost-effectively.
  - Expanded in 1972 where additional capacity was improved.
- Bee Slough Restoration/CSO Treatment
  - Captures and treats 100% of Kentucky Ave. CSO volume

- Screening/grit removal of first flush
- Wetland storage/treatment system
- Vertical treatment shaft for Cass Ave. and Adams St. CSOs
- Water would be pretreated before it entered the wetland

- Complete Sewer Separation Projects from 2007 Stormwater Master Plan. Those projects affect Oakhill CSO.

12) Bee Slough wetland concept - Why consider wetlands to meet Bee Slough CSO treatment requirements?

- Natural Treatment processes: Natural sedimentation, biochemical oxygen demand (BOD) reduction, disinfection processes.
- Supplemental energy needed for treatment.
- Requires no chemicals.
- Provides a habitat for wildlife, 10s to 100s of species.
- Offers educational opportunities.
- We can get the same amount of treatment with aesthetic benefits. This would be a major cost savings in the future.

Question: So what you proposed wouldn't affect the Levee according to the Army Corp?
Answer: There will be two berms in there; one would keep overflow off their Levee. The pump station is what causes water to pond in there now. If you really want to fix the problem, then K4 really needs to be looked at. We're moving forward as if K4 still exists and will stay as it is today. It's a $70-$100 million facility.

13) Wetlands for water treatment

- 50 years of technology experience
- Many technologies that can create robust natural processes
- Biota: 10s to 100s of species
- Scalable
- Known wildlife, education, recreation and economic benefits

14) East service area - Downtown CSOs

- Very focused on green infrastructure (Civic Centre is a green infrastructure project)
  - Streetscape projects
  - Infiltration/dry well projects
- Optimize in-system storage through weir wall adjustments
- Distributed storage
- If this doesn't achieve objectives, we'd look for storage solutions for the downtown area

15) West service area options

- 7th Ave Lift Station is critical to us
  - Replace 7th Ave. lift station and expand capacity
  - Construct 5 MG of above-ground storage
    - Above-ground storage provides a cost savings
    - Requires less risky construction techniques.
  - Construct 90 MGD of CSO treatment, which would save energy to not have to pump all the way to the West WWTP. A pump station will be needed, and Utility staff will influence how it's designed so they can better operate it.

Question: What's the size of a storage facility there, compared to an office building?
Answer: Typical water tanks hold 1/2 M gallons. One million gallons of water would fill a football field up to the depth of 4 feet. So, these will be pretty big facilities.

Question: There have been past issues with the 7th Ave. area; some ground issues when you get underground. There's a railroad on one side, Ohio River on the other side and a creek on another side.
Answer: The team is looking at moving it a little farther away from the river.

- 9th Ave CSS Basin
  - Pump CSO flows to Broadway interceptor
- St. Joe CSS Basin
  - Increase underflow pipe to 36"
- West WWTP expansion
  - Replace headworks and expand capacity to 50 MGD
  - Construct 4 MG of storage/equalization

16) Pigeon Creek program options

- Oak Hill CSS Basin
  - Weinbach LS rehabilitation (nearly complete)
  - Sewer separation/optimize underutilized storm infrastructure
  - CSO storage
- Pigeon Creek interceptor optimization and real-time control (takes flow from Diamond Ave. and then on to both sides of Pigeon Creek in that area)
  - Clean the interceptor, which has 12 inches of sediment at the bottom of the pipe. (Pipe is 48 to 66 inches wide.)
  - Enhance monitoring
  - Control interceptor and outfall gates
  - Maximize use of collection system for storage (leveraging past investments type of approach)
- Diamond Ave/Baker Street CSS basins, which carry flow up to Diamond when Ohio River is high.
  - Separate sewer and optimize the storm infrastructure
  - Pump Baker St. CSO to proposed Diamond Ave
  - Construct CSO storage
  - Treat CSOS near the Diamond Ave. CSO outfall
- Oakley Street CSS Basin
  - Construct CSO storage
- 6th Ave. CSO basin
  - Pump flows to Oakley St. CSO storage
- Dresden Street CSS Basin
  - CSO storage, or relief sewer to Maryland/Delaware CSO
  - Will bring flow to one central location through either storage tank or treatment
- Maryland Street CSS basin
  - Separate sewer and optimize storm infrastructure
  - Use green infrastructure solutions
  - Construct CSO storage and/or treatment
- Delaware Street
  - Pump CSO flows to proposed Maryland/Delaware CSO storage
- Franklin Street

- Construct new relief sewer to proposed 7th Ave./Fulton Ave. CSO storage and treatment.

Question: We're storing a lot of water. How long can you store it? Can it be recycled for fire protection or anything?
Answer: Can be stored for two days and then needs to get treated. It's pretty gross.

17) **Sanitary system remedial measures plan**
- We put together different hydraulic methods and calibrated in wettest periods of history and simulated the performance of the system. Looked at 2-year storm, 5-year storm and two 10-year storms.

Question: Do you have water leaving the system before it goes to the treatment plant?
Answer: We found areas of surcharging and sanitary overflows during wet weather. We also did manhole inspections and blew smoke into sewers to look for leaks. We found a lot of leaks and will fix the obvious problems. Then, after other clean water has been taken out, we'll address any other problems we discuss.

- Plan will include:
  - Inflow reduction
  - Structural bottleneck correction
  - Sewer rehabilitation
  - Ongoing small diameter sewer assessment program
  - Trunk sewer assessment program
  - Flow monitoring and hydraulic model maintenance
  - Right size conveyance infrastructure after infiltration/inflow removal and sewer rehabilitation

18) **Anticipated Costs – 90% capture of all the wet weather that falls on the city**
- Total Anticipated IOCP cost: $610M; some green options, but a large gray solution.

CSO Long-term Control Plan*	Sanitary Sewers Remedial Measures Plan
West: $353M	$21M
East: $221M	$15M
Total: $574M	$36M

*14 activations West, 11 activations East
**Capacity projects; 2-year storm

19) **Anticipated Costs – 76% capture of all the wet weather that falls on the city**
- Total Anticipated IOCP cost: $416M
- Refinement opportunities are available and likely

CSO Long-term Control Plan*	Sanitary Sewers Remedial Measures Plan
West: $187M	$21M
East: $193M	$15M
Total: $380M	$36M

*48 activations West, 29 activations East
**Capacity projects; 2-year storm

20) Anticipated Costs – Draft $227M option

- Total Anticipated IOCP cost: $227M, not appealing to the EPA
- Does not address separated sanitary sewer system.
- Assumes the city would begin to invest more in infrastructure enhancement when money is available.

Control Measure	Cost
Bee Slough	$130M
7th Ave. Lift Station	$90M
WWTP Modifications*	$7M
TOTAL	$227M

*After Bee Slough and 7th Ave. lift station improvements are complete, remaining funding would be allocated for WWTP hydraulic debottlenecking and PE bypass at East WWTP.

21) 20-year plan to address highest priorities – Planning dilemma

- EPA wants only four CSOs/year
- High level of control in the sanitary side of town (no overflows during storms of a magnitude of five to 10 years)
- Evansville can't reach these benchmarks because of unique system challenges
- Existing Evansville consent decree deal
  - 20 years – EPA will want rates raised to 2% median household income (MHI).
  - 25 years if we have rates projected at 2.5% of MHI: This is too high.
  - Currently have financial analysts assessing what we can afford.

Question: What does the high level of control number mean?
Answer: We gathered data for 2-, 5-, 10-year storms. The EPA typically wants us to control the sanitary side overflows for a 5- or 10-year storm (a severe storm that would only occur every 5 or 10 years; not your usual storm.) Sanitary sewers are 8-inch diameter pipes. It doesn't take much to flood those pipes and have water coming out of the system untreated. Those storms are not very frequent.

- Need input, collaboration and flexibility from regulators to solve this problem – a lesser level of control or significantly more time for implementation.
  - 20 years at 2% MHI is a $240M program.
  - 30 years at 2% of MHI is a $520M program.

22) Made a request to defer July 31 draft IOCP submittal: Justification

- Current plan options for Evansville that are likely to meet agency approval are too expensive – rates have already increased significantly in recent years.
- Want to utilize additional time to work with EPA and IDEM on a solution that is acceptable for all parties.
- Evansville does not want to submit a plan to the agencies and the public that may not be affordable or approvable.
- EPA declined, and mandated the draft IOCP must still be submitted by July 31.

23) What's next?

- Publish draft plan with a range of options for regulatory and public review/comment by July 31.

- Will include a recommended plan, but EPA/IDEM are not likely to approve it.
- Submission will trigger EPA/IDEM feedback.
- Plan may be revised via discussions with regulators leading to additional, more robust public comment in October.
- Final plan must be submitted on Nov. 30, 2012.
- Potential for dispute resolution with court over final plan – we're not going to self-impose a plan we can't afford.

24) Summary of 30-year program

- Phased approach that is affordable over 15-20 years, followed by a second phase that would allow for a program re-evaluation and more time – total of 30 years.
- Allows time:
  - For additional evaluations and relentless pursuit of affordable and cost-effective solutions.
  - For additional flow redirection/removal.
  - To optimize existing infrastructure.
  - To ensure we "right size" CSO storage/treatment facilities based upon the best available future information.
  - For $12 million in debt service to retire in 2031. This allows for additional funding capacity for IOCP.
- U.S. conference of mayors has taken issues to EPA for not being flexible. EPA does not normally bend on stipulations.

Question: Do we know what weight the public comments will have on the EPA?
Answer: Some, but they won't be a driver. Typically, if you have a range of options that are close, they'll give weight to the solution the citizens prefer.

Question: So on July 31, you will submit a plan you know they won't approve?
Answer: We'll submit a range of plans and tell the public where we are.

Question: Are you saying you need more time?
Answer: We need more time and EPA and Department of Justice (DOJ) assistance. Our baseline discussion with them was, "let's take some time to discuss this. We don't want to take plans to the public until we have time to discuss with you." The other option is not submitting by July 31, but then we must pay fines, which we also don't think is wise to do.

Question: Are any Indiana public leaders influential with the organizations you mentioned?
Answer: No. IDEM is not a driver. EPA will be the driver behind the program. Political influence on those folks is tough.

Question: Earlier you talked about green. Now, the only part that looks green is Bee Slough. In this, will the plan include some tree programs? We're losing them right and left through that area and they won't be placed because that area's poor.
Answer: Yes. There have been a number of green infrastructure projects identified, particularly downtown.

Question: The void of trees is around Diamond Ave. There are hundreds of thousands we're losing because of the drought.
Answer: There will be green infrastructure components. We'll put the word "trees" in there.

Question: Louisville has a progressive parks system. The reality here is the pollution isn't that bad. We're going into the river, but not affecting animal life.
Answer: That's the goal: To make positive impact outside of overflow impact. The real challenge is cost/performance for gray attains results better than green in many cases. Engineers can quantify gray easier.

Question: You had mentioned you hadn't received much feedback from EPA/DOJ. Do you have the sense that green infrastructure is cost-effective, and they'll agree to that?
Answer: Yes. EPA has turned that corner more.

Question: I want to emphasize something: You put Indy up there. Indy's outfall is a creek and ours is a river. From a volume standpoint, it's really not relative. At the outfall here, the river volume is larger. From a quality point, we're not worse than Indy because they're dropping into a creek. We're dropping into a much larger river. (The public has to understand Indy's greater impact of the environment.) It would be good to put population numbers on that slide (with Indy figures).
Answer: From water quality impact, that's exactly right. The water quality is atrocious before it reaches us. But water quality aside, when we discuss level of control policy, volume matters. The point of that slide is to show that Indianapolis has, with a larger service area, has four times the population to pay for that project. We tried to get that sensitive area designation undone and they said no.

Question: It would be nice to know who these regulators are. I want their contact names.
Answer: We should discuss that a bit to make a coordinated effort. Jack Basure is our primary contact. He's cooperative as he can be, but he's not a decision-maker. It's a couple of attorneys from DOJ. Their concern is to make sure each program across the country is consistent.

Question: Will you share the names, titles and contact info of the people making these decisions with us?
Answer: Yes.

Question: What are the criteria for a sensitive area?
Answer: Human contact and waterways used primarily as a recreational area are sensitive. It also considers endangered species and other environmental impacts. (Pictures of jet skiers influenced their decision.) The theory is if it's sensitive we have to address how realistic it is to relocate an outfall. The sensitive area designation helps us because it prioritizes Bee Slough and fixing that issue. The Bee Slough solution alone is over $100 million with the green infrastructure and treatment. The EPA will NOT remove the sensitive designation.

Question: Once it reaches the river, how do you model to determine it's fully dispersed throughout the river? How far down the river would that be?
Answer: The Utility's water quality model went all the way down below the sensitive area to the musselbed. They also did a two-dimensional model. We can give you a link to the document.

Question: Is there anything the public can be doing to alleviate overflows?
Answer: In the combined system, there's not much you can do. In dry weather, people can examine or disconnect their downspouts. There has not been a significant push

in Evansville to make people aware of downspout disconnection. Regardless, volumes in the combined sewer system are much larger compared to the sanitary volumes.

-End-

Appendix A.6

April 19, 2013
Location: Downtown Central Library

Attendees: Debbie Bennett-Stearsman – Economic Development Corporation
Cheryl Musgrave – Keep Evansville Beautiful

Project Team: Jenny Collins, Evansville Water and Sewer Utility
Jim Garrard – Evansville Water and Sewer Utility, *Renew Evansville*
Vivian Holiday – Evansville Water and Sewer Utility
Michael Labitzke – Evansville Water and Sewer Utility
Harry Lawson – Evansville Water and Sewer Utility
Allen Mounts – Evansville Water and Sewer Utility
Ed Ziemer – Evansville Water and Sewer Utility
Paul Amico – CH2M Hill
Erin Pipkin – Borshoff
Danielle Falconer – Borshoff

Purpose: To provide a general overview of Evansville's wastewater infrastructure and review integrated overflow control plan developments.

Discussion: The presentation focused on the project team's progress with EPA since the draft IOCP was submitted, as well as the deliverables and public outreach approach surrounding the May 31 deadline for the final IOCP.

1) **Final IOCP extension**
    - Final plan now due May 31, 2013
    - Evansville submitted draft on schedule (July 31, 2012)
    - Notice of Dispute and Force Majeure event filed with EPA requesting additional time to develop and submit final IOCP
        - 2011 wettest year in history; impacted data, and wanted to ensure we weren't over-predicting flows, which would have made us overbuild.
        - Received no feedback on most of the more than 20 technical submissions to EPA during plan development
        - EPA ultimately agreed to additional time, and court approved.
        - Submitted a lot of technical info to EPA; idea was they would review it and move us along. EPA has not reviewed much of it and didn't pay much attention.
        - No feedback from EPA on the 20 technical submissions; EPA contact is new in his position.

2) **Goals during extended schedule**
    - Gather additional flow data and refine hydraulic models, then right-size infrastructure solutions
    - Engage regulators (EPA) more robustly in discussions. No concrete feedback. No firm yes or no.
    - Dialogue will likely continue after final plan is delivered.

Question: What would be the timeframe for the approval?
Answer: Could be six weeks; could be a year. Three options:
    - Submit the plan and EPA approves

- Submit and EPA gives feedback for changes/negotiations
- See it and approve parts of it or none of it – we go back to court and submit it to the judge. This is all part of the process.
- We submitted a key deliverable in January 2012. Proceeded through three technical meetings and discussed that particular deliverable. It would have been helpful to have had that discussion a year earlier.

Question: What's the draft value of the plan?
Answer: $600 million, but we're seeing the costs come down.

- We have more confidence in the model now having had a chance to evaluate it in the field; we are more confidence for how it will work in the field.
- We were predicting a higher volume of flow with the old model and have shifted to accommodate for lower flow, which will lower costs.
- In May, we'll have an updated cost estimate
- Paying it over 20 or 30 years will make a big difference. Plan suggests paying over 30 years. A large debt will fall off in 20 years, which will free up some capital for us to use in 20 years. A 30-year plan makes a lot of sense for Evansville.

3) Recent Major Progress and Status

- Nearly 30 IOCP deliverables
- More wet weather flow at wastewater treatment plans (WWTPs)
  - 26 MGD at East WWTP
  - 27 MGD at West WWTP
- Number of CSO activations has gone down
- Sewer enhancement projects bringing sewers to two neighborhoods with failing septic systems were completed in December 2012
- Regular communication with EPA, including monthly meetings since October 2012. Much of the discussions have centered on explaining Evansville's system and technical data and elaborating on approach taken to develop IOCP.
- The team collected additional flow monitoring data– combined and separate system hydraulic models refined. What can Evansville afford? What assets make sense to build? How do you phase those assets? All solutions aim to improve water quality.
- Water quality model updated:
  - Additional IOCP alternatives evaluated – many at EPA's request – to make sure water quality benefit lines up with expense
  - EPA wants us to spend to the max and catch as much as possible. But, from a cost-benefit analysis, we want to capture volume and ensure water quality benefit.
  - Additional flow monitoring data showed future baseline percent capture is 30% compared to 25% with old data (existing % capture is 35%)
  - Total annual overflow volume is down from 3.4 billion to 2.0 billion gallons
  - Hydraulic computer model refinement resulted in:
    - More realistic projection of future flows
    - More accurate seasonal groundwater variation
    - More accurate estimating
    - Model accuracy verified via comparison to actual data and rain events
    - Consequently, we can right-size the infrastructure projects

Question: When you're doing analysis of what Evansville can afford, what do you consider?

Answer: We consider population levels, the number of people at or below the federal poverty level, median household income, number of households in service area and the Utility's current debt levels. We accounted for a very modest increase in population.

Question: What is the study group? Is it EWSU service customers? Vanderburgh County residents?
Answer: EPA wants us to use an apples-to-apples comparison, so we include all of our sewer customers. When you look at poverty trends, they're inside the city of Evansville. 75% of the customers are in the city, so it's mostly those folks who are impacted by the program. The updated financial model we submitted to EPA led to a lot of discussion. It's time to have the real discussion, which is: What is the cost of this plan going to be? We've had separate tracks of discussions with EPA about the plan and the cost, but they're focused on water quality.

4) **Summary of IOCP**
    - 22 annual CSO outfalls; CSS area is 17 square miles
    - Bee Slough
        - Three large CSO outfalls discharge into Bee Slough
        - Ohio River level and Levee Authority pumping controls flow and water levels in Bee Slough
        - Bee Slough is an eyesore and a heavy risk; specifically referenced in Consent Decree. It is the City's highest priority – it must be addressed.
        - Engineers have rarely ever seen a system like Bee Slough because it is heavily impacted by river levels
        - Bee Slough outfall is Evansville's most upstream discharge to the Ohio River
        - Bee Slough discharges are 70% of total volume discharged to the Ohio River
        - Likely all-or-nothing solution to the problem (100% CSO control)
- IOCP planning goals
    - Maximize underutilized existing storm infrastructure by understanding past investments made and truly capitalizing those enhancements
        - Push more flow through the plants. Under EMC, the wastewater treatment plant (WWTP) was only processing 22 MGD when the capacity was 44 MGD. Re-plumbing helped direct more flow to the WWTPs. Since the West WWTP was improved, the 7th Avenue Lift Station hasn't activated.
    - Maximize use of green infrastructure
    - Optimize Pigeon Creek Interceptor operations
    - Provide necessary redundancy and backup power at 7th Ave. lift station
    - Provide for better control of West WWTP influent hydraulics
    - Economically reduce infiltration and inflow. Don't transfer and treat water that doesn't need it.
    - Right-size CSO controls to increase capture and treatment of CSOs system-wide
- CSO technical approach
    - Building a huge tunnel system is not feasible for Evansville. This approach happens in larger cities like Indianapolis, Chicago, Milwaukee, Cleveland, Detroit and Atlanta.
    - Use green infrastructure where practical – 13 or so projects funded through time. Green projects help beautify the city, and EWSU works with other city departments to integrate green infrastructure whenever it's feasible.
    - The Utility has expanded both treatment plants. A new headworks facility is needed to reliably capture flow.

- Capture and disinfect water before it goes to the WWTPs.
- Maximize existing infrastructure. For instance, there is a tunnel under Weinbach Avenue built in 1999, but only two laterals were connected to it. There was also a tunnel built under Diamond Avenue when INDOT completed work there.

Question: You didn't mention building a third WWTP. Why not?
Answer: We analyzed what a north side plant would do, and it didn't do much. So, that cost would be over and above what we could come up with for a full plan now. It could be a solution in the future if the north side grows.

- Highlights
  - East WWTP expansion – De-bottleneck and utilize primary effluent bypass. Rehab the chlorine contact tanks to utilize the WWTP's 40 MGD capacity.
  - Bee Slough – Create a wetland to naturally treat some of the effluent. It would be on both sides of Veterans Parkway. The part to the northeast would only be activated six or seven times a year. The difference between zero activations and six or seven is about $20 to $30 million.
    - 100 percent of the Kentucky Avenue CSOs dump into Bee Slough
    - The proposed wetland treatment system includes screening/grit removal, as well as wetland storage
    - We may reroute the outfall and use the area in between for equalization
    - Water would be diverted to a new pump station that would pump the water into the wetlands treatment area. Can't do excavation because you can't dig next to the Corps of Engineers' Levee. And, there's Veterans Parkway, which is the main gateway into town.
    - The positive attributes about that pump station are:
      - ✓ We can recirculate that water. We need the time because we're mimicking a natural process.
      - ✓ Or, we can choose not to pump that water and plumb that water over to the treatment plant.
      - ✓ Or, we can plumb the water to the treatment plant after it goes through the wetland.
      - ✓ An early project for Bee Slough was to build drains from Bee Slough and plumb it over to the treatment plant. A very cost effective way of treating the Slough.

Question: So the incoming water will be treated before it goes into the wetland?
Answer: We will screen the wastewater and will remove the grit. It will smell better. Solids go to the treatment plants. The wetlands have natural processes. Our wetland scientists assure us that wetland solutions don't stink.

Question: The Levee Authority isn't concerned that there's water on both sides?
Answer: We have to build berms to keep it off the levee. We have to force it to stay in the wetland for a few hours to two days, which is the ideal treatment time. This wetland would only fill seven times a year based on our analysis. The other rain events would be contained to the wetland. This wetland may not be used 30 times per year. You'd only see water in the wetland up to about 20 times per year.

Question: Would you as neighbors be willing to have stored water near your neighborhood for a few hours?

Answer: No, not really. If you're going to do the project, fix it right. Don't treat the river better than the people.

Question: How does the flow go to the wetlands side?
Answer: There are outlet points along the Slough.

Question: If you put the pump station in Sunset Park, would Sunset Park have to be given up?
Answer: No, the structures would be built in the park, but the only disruption would be during construction.

Question: What's the advantage of having our own pump?
Answer: Utility controls when water gets pumped out. Today, you just put it in a pipe but don't have control over it. The combination of our control structures can treat and discharge. If we get a storm event bigger than what we've planned for, we can go back and treat it. The other advantage is there's a gate structure and we'll keep gates closed. There's no more recycling and untreated water going out like there is now – we have many new features with this solution.

Question/statement: I thought IDEM no longer permitted wetland treatment.
Answer: There are two in Indiana. EPA is actually very favorable about them.

Question: Does this mean all of your proposed solutions would be custom?
Answer: Yes. All of the tools in the box are largely the same. It's how you place them and what you select to do. Diamond Avenue is a good example because there's a lot of flow out there that can't travel to the plant. On the north side of Evansville, we store water underground. It's more than a football field square and 30 feet in the air. We do not just want to build huge storage tanks.

5) **Public outreach**
   - We plan to have public meetings in mid- to late-May.
   - We will also have a final CAC meeting then.
   - The final IOCP and any updates will be on the website.

-End-

Appendix A.7

May 14, 2013
Location: Downtown Central Library

Attendees: Dona Bergman – Evansville Department of Sustainability, Energy and Environmental Quality
John Blair – Valley Watch
Patrick Keepes – Evansville City Engineer
Cheryl Musgrave – Keep Evansville Beautiful
Mike Schopmeyer – Kahn, Dees, Donovan and Kahn, LLP
Brian Swenty – University of Evansville

Project Team: Jim Garrard – Evansville Water and Sewer Utility, *Renew Evansville*
Jenny Collins – Evansville Water and Sewer Utility
Michael Labitzke – Evansville Water and Sewer Utility
Allen Mounts – Evansville Water and Sewer Utility
Paul Amico – CH2M Hill
Tim Coxey – Borshoff
Erin Pipkin - Borshoff

Purpose: To provide CAC members with an overview of the final IOCP due to state and federal regulators on May 31, 2013.

Discussion: Jim Garrard and Paul Amico presented specific aspects of the IOCP, including construction projects, cost analyses and funding solutions.

1) General Information:

- Jim Garrard opened the meeting at 11:35 a.m.
- Jim mentioned the dates of the remaining public meetings and encouraged members to spread the word about attendance. He also mentioned the Courier and Press' mistake in the paper, noting the plan will cost $540 million, not $815 million. A retraction was placed online and will be printed tomorrow.
- Although the presentation given at the public meetings was available for review, many CAC members had already seen it at the April 2013CAC meeting. Jim and Paul focused mainly on the financial capability and cost and schedule for the program.

2) PowerPoint Presentation:

- A brief synopsis of the Evansville's Consent Decree and background was reviewed.
- Overflow Control Planning and Challenges
  - CSOs and percent capture
    - The question is not if we fix our systems, but how and for how long
    - Evansville's plan will not achieve a 100% capture rate of CSOs
  - Financial capability - Evansville cannot afford a 20-year plan to achieve satisfactory capture rating from EPA
  - Challenges unique to Evansville

- Large CSO volume: Our new volume is calculated at 2.0 billion gallons, which saves us for similar control.
  - **Comment:** • Integrated Overflow Control Planning (IOCP)

- Two capital improvement plans
  - CSO long-term improvement plan
  - Sanitary sewers remedial measures plan
- Specific goals
  - Completely address Bee Slough and create a wetland area
    - Natural treatment process
    - No supplemental energy requirements for treatments
    - Provides education, aesthetic, natural, bio-friendly environment

Question: Will Bee Slough be attractive?
Answer: Yes, greenways and good for bird watching. The City can make it an amenity.

- Levee and river level impacts
- Maximize underutilized existing storm infrastructure
- Incorporate green infrastructure where possible
- Downtown has opportunities
- Control Oak Hill CSO
- Financial Capability and Plan Options

- EPA wants cities to achieve between 90% and 98% CSO control through these plans. For Evansville, that means less than four CSO activities.
- Many cities have agreed to plans to achieve 90%, and then have returned to the EPA to request more time because they lacked funding.

Question: What do 4 activations cost?
Answer: 4 would be $815 million; zero would be $916 million. To prevent even more flow into the sanitary sewer, it would cost another $100 million.

Question: When are these activations occurring?
Answer: Throughout the year. Only four to six are during the recreation season.

Question: Where is pollution coming from?
Answer: We did a water quality model of Ohio River and Pigeon Creek. Oak Hill CSO, northernmost is agricultural runoff. Pigeon Creek meets 122 days of recreation attainment, 125 days with full control.

Comment: We've had an idea back in 2000 from an agricultural study. Much like the SRCCR done successfully in Louisville. We have to address bacteria.

Question: Who should bear the cost to clean up agricultural run-off?
Answer: IDEM would have to look upstream. We even looked at metals in our analysis, but determined the metals weren't a huge impact.

- Recent rate increases and retirement of existing debt
- Financial capabilities

- The final plan approved by EPA will most likely result in annual rate increases of 10% for at least six years before the 2% median household income threshold is reached
    - 20-yr.: $85.30 and $115.20
    - 28-yr.: $87.19 and $117.60 – less because debt will fall off the books. Median household income drives the levels.
    - Evansville rates are $26.30 and $35.50 per month currently. And our existing debt will be carried to 2023 and 2031. There are other things the Utility will still have to fund, like operating expenses, cleaning and maintenance, reasonable assumptions. We need to work on "diffusing bombs before they go off."
    - CSO policy makes it clear it must be affordable, and the U.S. Conference of Mayors has pursued changing the mindset of the EPA to focus on affordability.
    - We're looking at in-city and out-of-city median household income. Inner-city people shouldn't bear the cost.
    - Pigeon Township is $22,000/yr., and most have a 35% differential. These numbers are based on 2040 terms.
    - **Comment from CAC member:** This type of increase pales in comparison to rising energy costs.
    - We considered several storage tanks – a little bit of storage can eliminate 40 activations a year (10 very big storms with 1.5 inches)
    - At 7th Ave., we pump 135 million gallons a day. Two above ground storage tanks could be used, masked to look like offices. These are reflected in the 21-28-yr. plan.
    - We are not building another wastewater treatment plant because of the power costs associated with transporting the water. It's actually cheaper to replace the west wastewater treatment plant and 7th Ave. Lift State than renovate.
- The meeting adjourned at 1:15 p.m.

3) Next steps

- The CAC members were encouraged to spread the word about public meetings and diffuse any confusion over the rate issue with their staff, friends or neighbors.

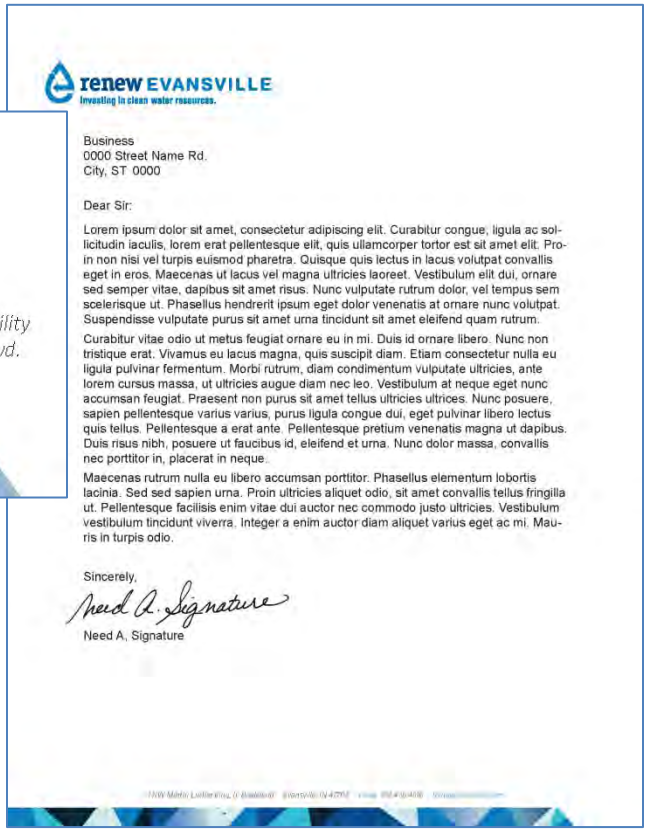
-End-

APPENDIX B

Outreach materials

Branding

renew EVANSVILLE
Investing in clean water resources.



Website – www.RenewEvansville.com

Home page

CSOs

EVANSVILLE INDIANA

Home | About Us | Living | Visiting | Business | Government | I Want To... | Links

- Evansville Water & Sewer Utility
  - Boil Advisories and Information
  - Combined Sewer Overflow Real-time Viewer Notification Site
  - Customer Service
  - Water Department
  - Sewer Department
  - Trash and Recycling
- Renew Evansville
  - Combined Sewer Overflows (CSO)
    - Evansville Combined Sewer Overflow Facts
    - CSO Impacts
    - CSO Solution
    - Helping
    - Links
    - Resources
    - Timeline
    - Draft IOCP
    - Public Reports
    - Frequently Asked Questions
    - Community Resources
    - News
    - Contact Us
- Engineering Operations
- Doing Business With Us
- News
- Legal Notice

EVANSVILLE COMBINED SEWER OVERFLOW FACTS

Approximately 100 years ago, Evansville began building a sewer system to carry storm water away from homes, businesses, and streets.

Later, when indoor plumbing arrived, homes and businesses connected their sewage lines into these storm sewers, making them "combined" sewer systems (CSS). Evansville's two wastewater treatment plants were not constructed until the 1950's. Approximately 504 miles of sanitary and 318 miles of combined sewers are under the authority of the Evansville Water and Sewer Utility (EWSU).

During dry weather, the combined sewers transport sewage to the City's two treatment plants. However, after significant rainfall, combined sewers can become overloaded with the incoming storm water. When this happens, overflows are directed into Pigeon Creek and the Ohio River, preventing the sewers from backing up into homes and onto streets. This is referred to as a combined sewer overflow event, or CSO.

Combined sewers serve mainly the older parts of town, while outlying sections of the city are served by separate sanitary and storm sewers. However,sanitary sewage from those outlying areas eventually flows through the combined sewer system before reaching a treatment plant.

Combined sewers are sanitary sewers that convey both sewage and storm runoff. During dry weather, combined sewers carry sewage from domestic, commercial, and industrial sources to the wastewater treatment plant. During wet weather events, the same sewers also convey surface runoff collected from streets, lawns, parking lots, parks, etc. to the wastewater treatment plant (WWTP). When the capacity of the WWTP is exceeded, such as during heavy rainfall events, the excess wastewater is occasionally allowed to bypass directly to surface water bodies, including the Ohio River and Pigeon Creek, through flow diversion structures. This excess wastewater is called combined sewer overflow (CSO).

The combined sewer system in Evansville is located in the south central part of the city, bounded generally by the Ohio River on the south, Pigeon Creek on the north, Carpenter Creek on the west, and Vann Avenue on the east. Figure 1.1 shows the major interceptors and the subsystems of the City's combined sewer area.

CSO impacts

EVANSVILLE INDIANA

Government

- Evansville Water & Sewer Utility
  - Boil Advisories and Information
  - Combined Sewer Overflow Real-time Mewer Notification Site
  - Customer Service
  - Water Department
  - Sewer Department
  - Trash and Recycling
- Renew Evansville
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CSO IMPACTS

CSO discharges contain municipal and industrial wastes, floating debris, and disease causing pathogens, among othercontaminants. These pollutants are harmful to the environment, human health, and detract from our ability to use the waters where the discharges occur to the full extent possible. The discharges from the more than 9,000 CSO outfalls has a significant impact on downstream waters and communities that use those waters.

The table below presents the concentration of several pollutants in a variety of water discharges including untreated and treated waste water, urban runoff, and CSO discharges. The discharge from CSOs is a combination of untreated waste water and urban runoff. It is for that reason that the pollutant loads are similar between these three categories of discharge.

Chemical Pollutants

These pollutants are chemical compounds that are either discharged by industry, homeowners, or washed from the street into the combined sewer systems. It is important to remember that every chemical that we put in our sinks or empty onto our streets will be discharged directly into our waters during wet weather events. These pollutants have a serious impact upon the aquatic life in our streams and can render the water undrinkable in the absence of expensive treatment. They may be either inorganic or organic compounds.

The inorganic pollutants tend to be metals, including but not limited to, zinc, copper, nickel, mercury, and lead. The organic substances found in CSO discharges include oil, grease, benzene, chloroform, phenol, toluene, and many other organic compounds. To view concentrations of organic and inorganic substances in CSO discharges

Pathogens

Pathogens include bacteria, viruses, and parasites. Untreated sewage contains virtually every well known disease causing pathogen that we take so many steps to avoid in our everyday lives. Some of the pathogens that can be found in CSO discharges include E. coli, Salmonella, Fecal coliform, Enterococci, Shigella, typhoid, cholera, dysentery, hepatitis, diphtheria cryptosporidium, and giardia. These pathogens pose a risk for those who ingest contaminated water directly or indirectly. Particularly, vulnerable are those with weakened immune systems, such as young children and the elderly.

Direct routes of exposure can occur through inadequately purified drinking water, swimming, boating, etc. Indirect exposure includes the consumption of food that has been contaminated by pathogen tainted water. CSO discharges limit our use of waters for recreation, drinking, and for food supplies. An example of these limitations are the closure of shellfish beds and fishing areas. Many of these shellfish beds are constantly in a state of closure due to the activity of CSOs. In fact, between 10 and 20 percent of harvest-limited shellfish acreage, amounting to nearly 600,000 acres, is attributed to CSOs according to a 1991 National Oceanic and Atmospheric Administration report

CSOs (cont'd)

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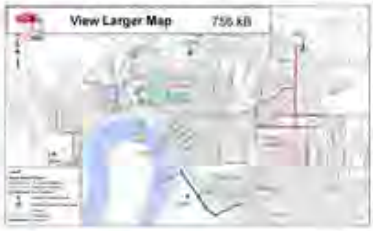
CSO SOLUTION

What has already been done to reduce CSO impacts?

Construction of two wastewater treatment plants in the 1950s eliminated Evansville's direct discharge of untreated sewage into the Ohio River and Pigeon Creek. The Ohio River Valley Water Sanitation Commission (ORSANCO) is an eight-state water pollution control agency established in 1948. ORSANCO data indicates that the Ohio River's water quality has improved considerably during that time. ORSANCO's web site, "EMPACT", states, "Ohio River pollution control on the federal, state, and local levels have done much to improve water quality in the Ohio River. Fifty years ago, the Ohio River was treated as an 'open sewer'.



People are now using the river for swimming, boating, jet-skiing, and fishing; festivals in celebration of our Ohio River heritage are held in many towns along the river . . . all possible because of improved water conditions over the last few decades." Since the 1930s, interceptor sewers were constructed which connect multiple CSOs and "intercept" wet weather flow immediately prior to it reaching the receiving stream via the CSO outfall. That "intercepted" flow is retained in the system and diverted to one of the two wastewater treatment plants. While interceptor sewers have no problem carrying the waste water to the plants during dry weather, additional water flowing into the system during wet weather often exceeds the capacity of the interceptors.

The City has spent millions of dollars completing treatment plant and collection systems improvements during the last decade. Collection system rehabilitation projects and the rerouting of a major eastside sub-basin have reduced volumes and eliminated several bottle-necks, thus saving treatment plant capacity for other wet weather flows. Each year funds are allocated to perform collection system rehabilitation which reduces system failures and keeps groundwater from entering joints and cracks. Continuing efforts such as these will ensure the improvement of Evansville's combined sewage network.

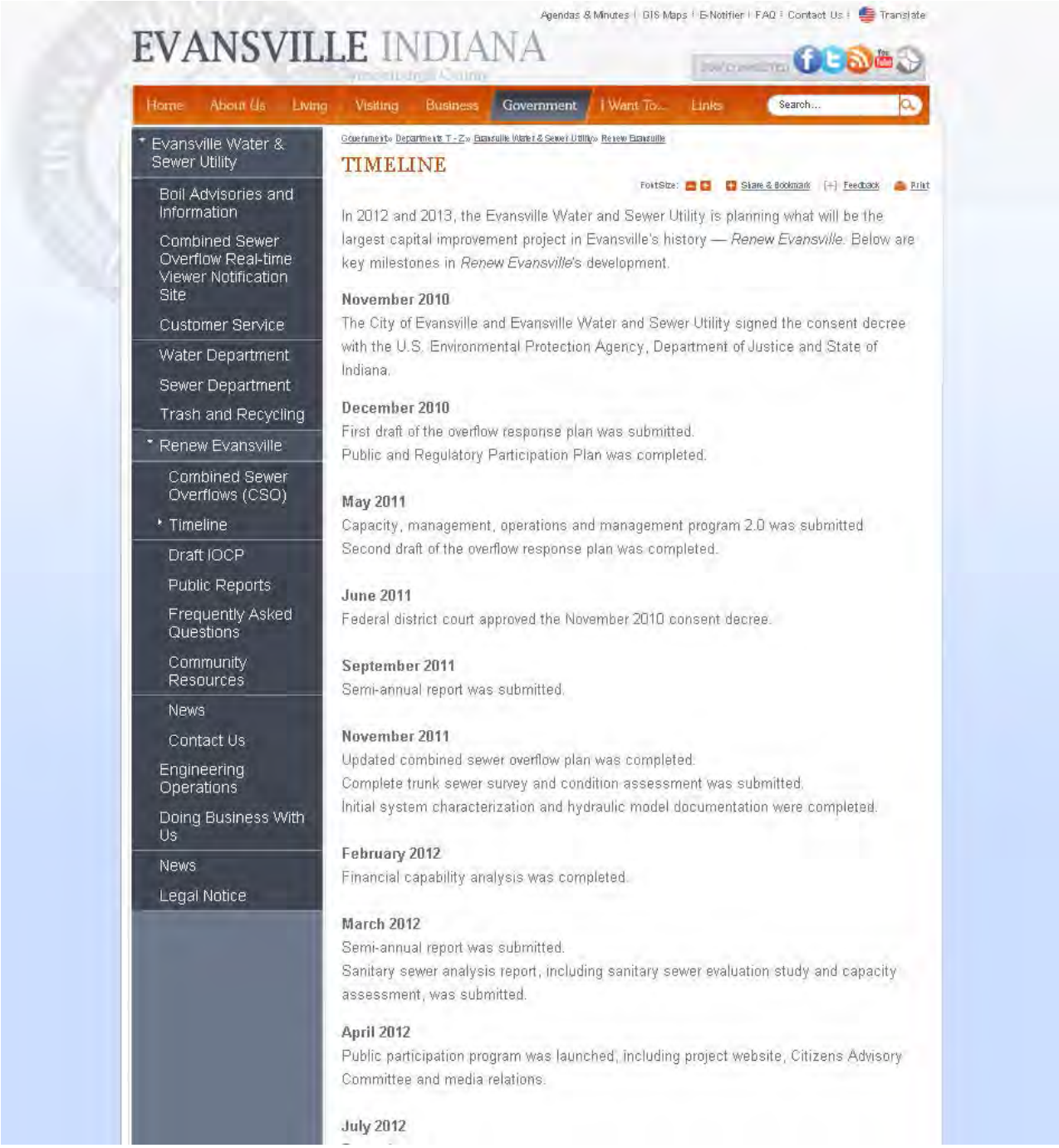
What is presently being done to reduce CSO impacts?

The EWSU is currently developing a Long Term Control Plan. The LTCP will ltilize the results and recommendations of the Pigeon Creek SRCER to help establish practical and effective CSO controls for the Pigeon Creek CSO network. The same type of controls will be considered for the Ohio River CSO network. In both networks, E. coli reduction will be a targeted priority.

Extensive collection system flow monitoring has recently been performed which will allow the creation of a computerized hydraulic model of the CSS. The model is useful in simulating the CSO reduction possible by modi6cations to the collection system. It creates a cause/effect relationship between precipitation and CSO discharge quantities. It will also be used to determine what net reduction prior control projects have had upon CSO discharge frequency and volume.

Helping (CSOs)

Timeline



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TIMELINE

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In 2012 and 2013, the Evansville Water and Sewer Utility is planning what will be the largest capital improvement project in Evansville's history — *Renew Evansville*. Below are key milestones in *Renew Evansville*'s development.

November 2010
The City of Evansville and Evansville Water and Sewer Utility signed the consent decree with the U.S. Environmental Protection Agency, Department of Justice and State of Indiana.

December 2010
First draft of the overflow response plan was submitted.
Public and Regulatory Participation Plan was completed.

May 2011
Capacity, management, operations and management program 2.0 was submitted.
Second draft of the overflow response plan was completed.

June 2011
Federal district court approved the November 2010 consent decree.

September 2011
Semi-annual report was submitted.

November 2011
Updated combined sewer overflow plan was completed.
Complete trunk sewer survey and condition assessment was submitted.
Initial system characterization and hydraulic model documentation were completed.

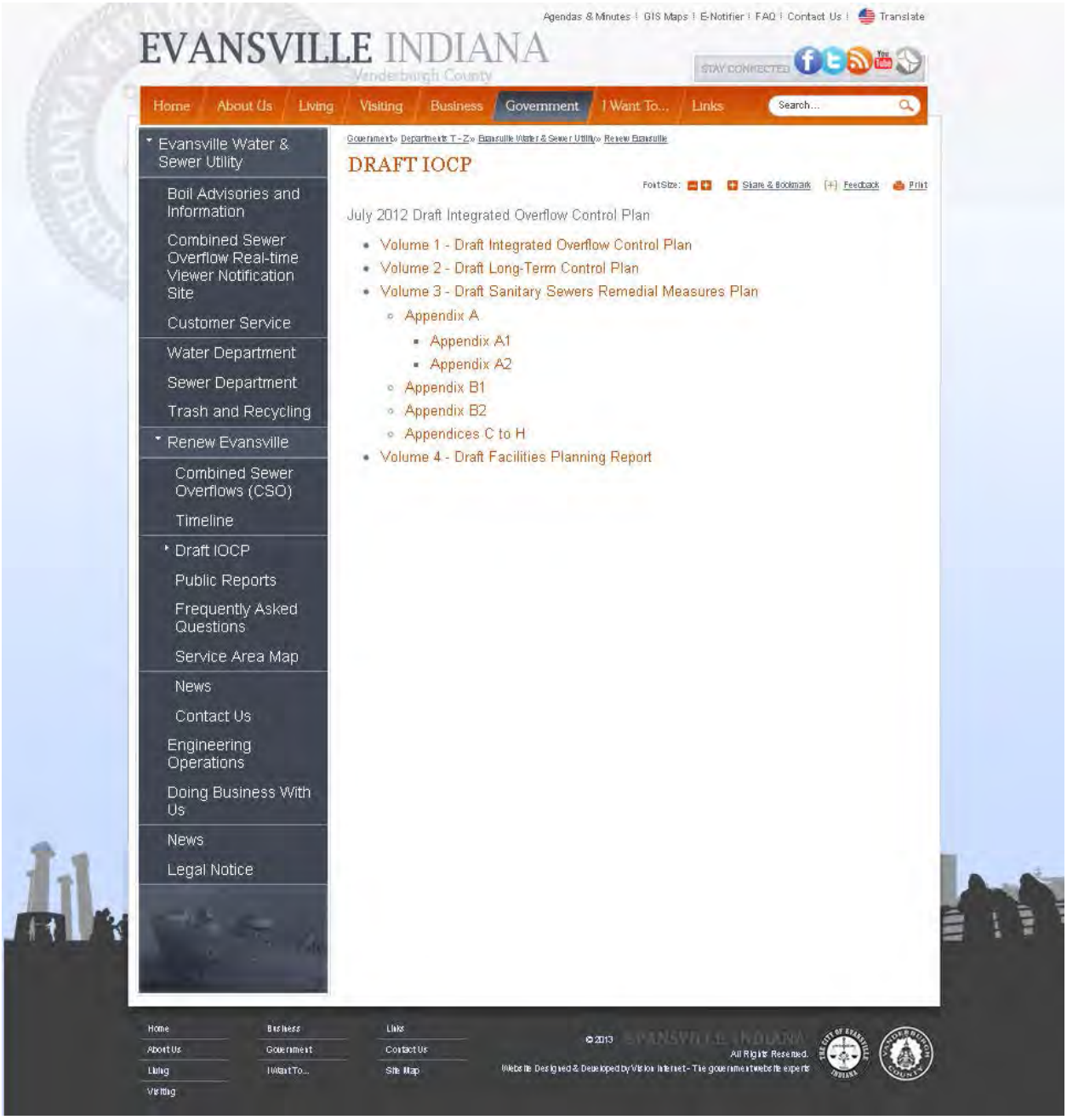
February 2012
Financial capability analysis was completed.

March 2012
Semi-annual report was submitted.
Sanitary sewer analysis report, including sanitary sewer evaluation study and capacity assessment, was submitted.

April 2012
Public participation program was launched, including project website, Citizens Advisory Committee and media relations.

July 2012

Draft IOCP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Volume 2 - Draft Long-Term Control Plan
Volume 3 - Draft Sanitary Sewers Remedial Measures Plan
Appendix A
Appendix A1
Appendix A2
Appendix B1
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Volume 4 - Draft Facilities Planning Report
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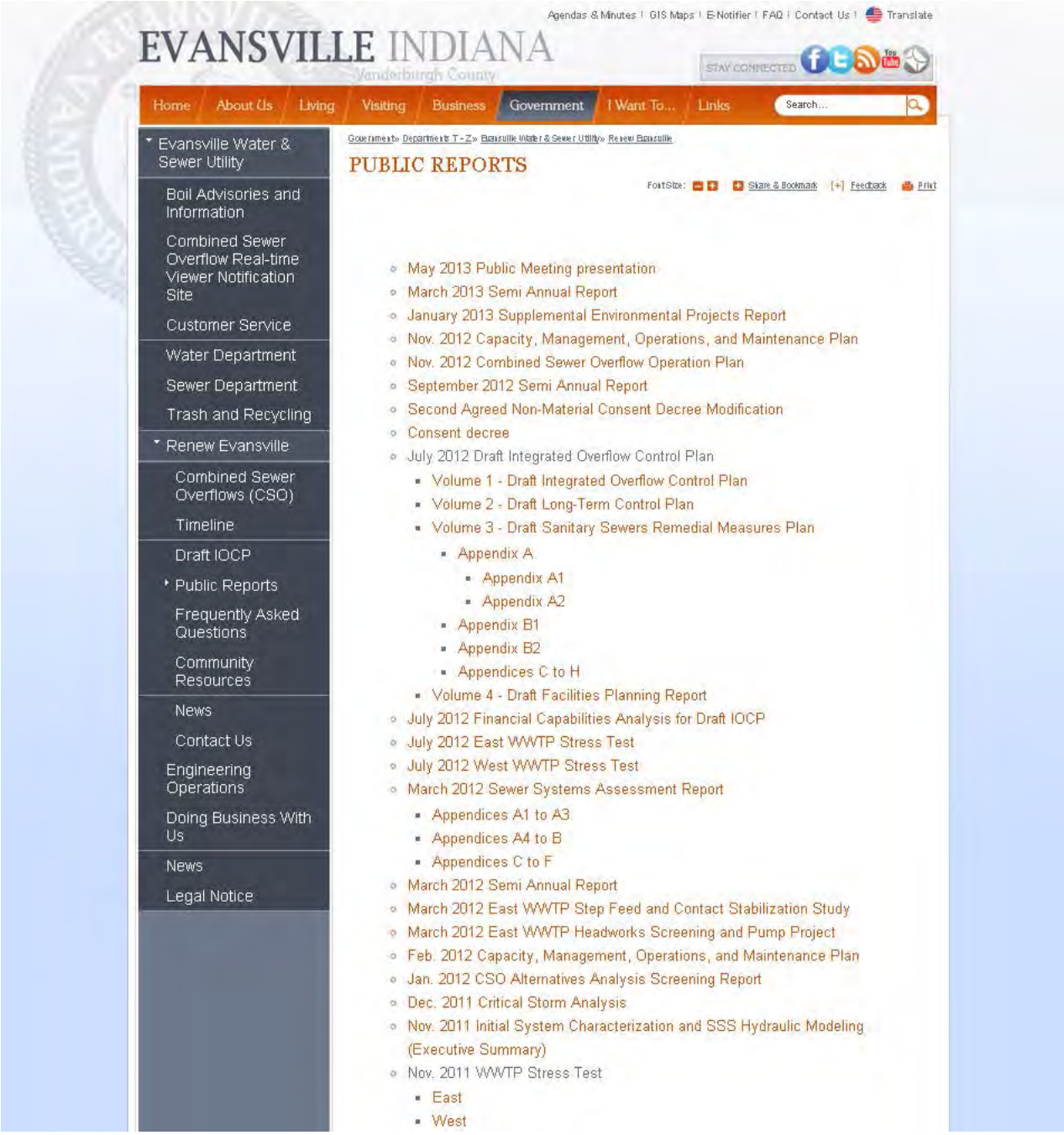
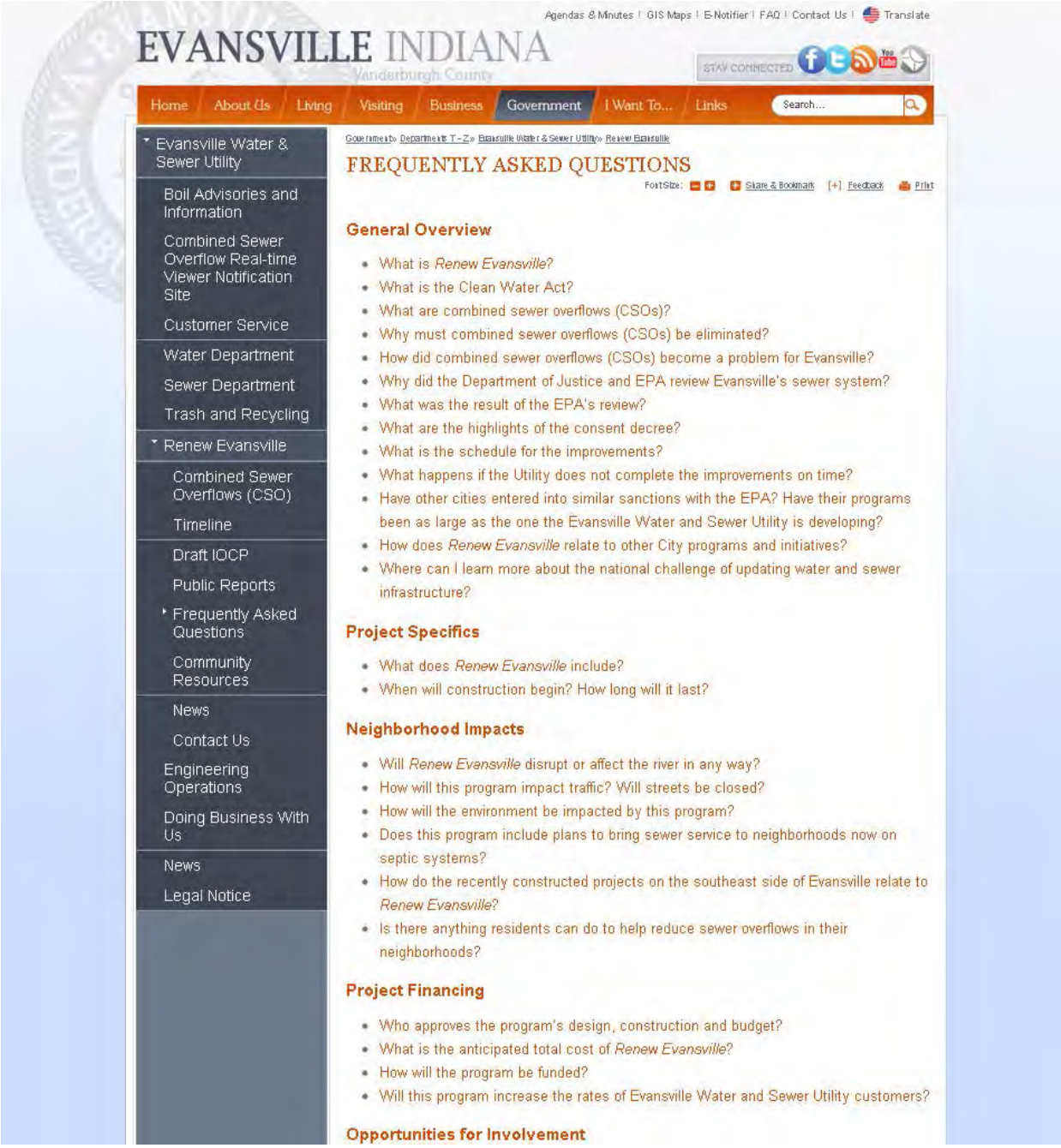


Frequently asked questions



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FREQUENTLY ASKED QUESTIONS

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General Overview

- What is *Renew Evansville*?
- What is the Clean Water Act?
- What are combined sewer overflows (CSOs)?
- Why must combined sewer overflows (CSOs) be eliminated?
- How did combined sewer overflows (CSOs) become a problem for Evansville?
- Why did the Department of Justice and EPA review Evansville's sewer system?
- What was the result of the EPA's review?
- What are the highlights of the consent decree?
- What is the schedule for the improvements?
- What happens if the Utility does not complete the improvements on time?
- Have other cities entered into similar sanctions with the EPA? Have their programs been as large as the one the Evansville Water and Sewer Utility is developing?
- How does *Renew Evansville* relate to other City programs and initiatives?
- Where can I learn more about the national challenge of updating water and sewer infrastructure?

Project Specifics

- What does *Renew Evansville* include?
- When will construction begin? How long will it last?

Neighborhood Impacts

- Will *Renew Evansville* disrupt or affect the river in any way?
- How will this program impact traffic? Will streets be closed?
- How will the environment be impacted by this program?
- Does this program include plans to bring sewer service to neighborhoods now on septic systems?
- How do the recently constructed projects on the southeast side of Evansville relate to *Renew Evansville*?
- Is there anything residents can do to help reduce sewer overflows in their neighborhoods?

Project Financing

- Who approves the program's design, construction and budget?
- What is the anticipated total cost of *Renew Evansville*?
- How will the program be funded?
- Will this program increase the rates of Evansville Water and Sewer Utility customers?

Opportunities for Involvement

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NEWS

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May 7, 2013

Evansville Water and Sewer Utility public meetings scheduled next week

Utility to present information and seek feedback on *Renew Evansville* sewer plan

EVANSVILLE, Ind. – The Evansville Water and Sewer Utility (EWSU) is hosting a series of public meetings next week to present its proposed final Integrated Overflow Control Plan (IOCP) to improve and modernize Evansville's sewer system. The IOCP is mandated by the Indiana Department of Environmental Management (IDEM), the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Justice.

The effort to implement the plan, called Renew Evansville, will be one of the City's largest capital improvement projects to date. Community members are encouraged to attend the meetings, which will be hosted by Renew Evansville team members and engineers.

Public meeting dates, times and locations:

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Tuesday, May 14
9 to 10:30 a.m., McCollough Library, 5115 Washington Ave.
6:30 to 8:00, Bosse High School, 1300 Washington Ave.

Wednesday, May 15
9:30 to 11 a.m., North Park Library, 960 Koehler Dr.
6:30 to 8:00 p.m., Vogel Elementary, 1500 Oak Hill Rd.

Thursday, May 16
9:30 to 11 a.m., Red Bank Library, 120 S. Red Bank Rd.
6:30 to 8:00 p.m., Fairlawn Elementary, 2021 S. Alvord Blvd.

Community members are invited to submit comments and questions during the meeting or online at www.RenewEvansville.com using the "Contact Us" link on the left side of the page. For more information or a copy of the draft plan, visit www.RenewEvansville.com.

More News:

Evansville Water and Sewer Utility submits draft sewer overflow control plan to EPA

Outreach materials

Fact sheets

January to May 2013

About the Evansville Water and Sewer Utility

The Evansville Water and Sewer Utility serves approximately 60,000 customers. The entire sewer system:

- Contains more than 800 miles of combined and separated sanitary sewer pipes that collect and transport millions of gallons of wastewater each day.
- Includes two wastewater treatment plants and 90 lift stations.
- Employs 195 individuals full-time.

Evansville's Combined Sewer Overflows (CSOs)

Approximately 100 years ago, Evansville and thousands of other cities began building sewers to carry stormwater away from homes, businesses and streets. Later, with indoor plumbing, homes and businesses connected their sewage lines into those storm sewers, making them "combined" sewers.

Wastewater treatment plants were constructed in the 1940s and 1950s to treat the waste, but during rain events or snowmelt, by design, wastewater overflowed into local bodies of water to prevent flooding and backups of the system. In 1994, the U.S. Environmental Protection Agency (EPA) issued the National CSO Policy, which was subsequently incorporated into Section 402(a) of the Clean Water Act. The policy requires the control of CSO discharges.

In the past decade, Evansville has invested more than $120 million to improve its sewer system. While these projects are largely eliminating the decades-old problem of flooding on the southeast side of Evansville and have expanded the capacity of the city's treatment plants, much work remains to address CSOs.

More than 100 cities in Indiana have combined sewers, and every city must work to address CSOs. Approximately 10 cities in Indiana have entered into federal consent decrees with EPA. The other cities will comply with the CSO Policy per agreed orders and permit obligations via the Indiana Department of Environmental Management (IDEM).

What is the Clean Water Act of 1972?

The Clean Water Act (CWA), enforced by EPA and IDEM, mandates the control of sewer overflows across the U.S. Specifically, the CWA requires that the city develop a long-term plan to control combined sewer overflows, consistent with applicable water quality standards.

About *Renew Evansville*

Renew Evansville is a response to a federal mandate and will significantly upgrade one of Evansville's most important, yet unseen, assets … its sewer system.

This long-term capital improvement program will address combined sewer overflows and overflows in parts of the separate sanitary sewer system. The program includes:

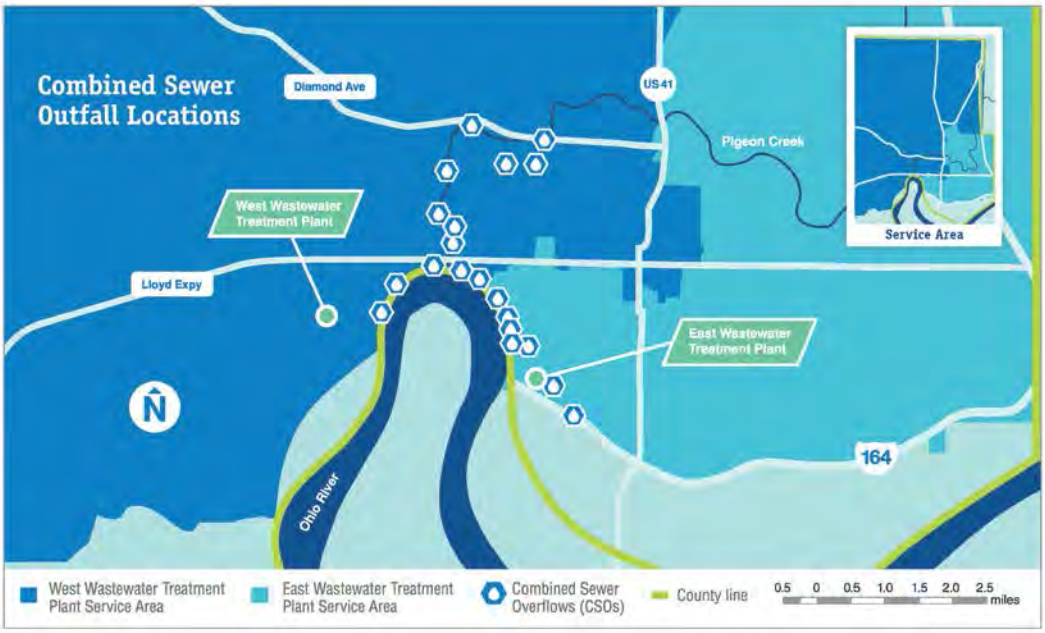
- Significant upgrades to existing infrastructure.
- New infrastructure to capture and treat additional wastewater.
- Sustainable and "green" infrastructure solutions.
- Improvements to the Utility's operations and maintenance.

Engineers and Utility management have developed a long-term Integrated Overflow Control Plan (IOCP) that addresses Evansville's CSOs and capacity issues in portions of the separate sanitary sewer system. The result will be a significant reduction in combined sewer overflows into the Ohio River and Pigeon Creek during rain events and snowmelts, and a reduction of backups and sewer overflows in the separate sanitary sewer system.

A draft IOCP was presented to the public, as well as state and federal regulators, for comment on July 31, 2012.

What's Next?

After receiving comments from the public, and state and federal regulators, and after additional sewer system analysis, engineers are updating the draft IOCP. A final plan is due for submission to EPA and IDEM on May 31, 2013. Pending EPA approval, the Utility expects to construct the program through 2040.



Glossary

Combined sewers
Combined sewers are designed to collect sanitary sewage and stormwater runoff in a single pipe system.

Combined sewer overflow (CSO)
A combined sewer overflow (CSO) occurs when the amount of stormwater runoff and sanitary wastewater exceeds the capacity of the combined sewer infrastructure. During rain events, rain water overwhelms the capacity of the pipes and, by design, causes the excess water and sewage to overflow into local bodies of water — the Ohio River and Pigeon Creek in Evansville.

Consent decree
A consent decree is a settlement agreement that is subject to court approval. Evansville's consent decree is a legal agreement between the Evansville Water and Sewer Utility, the City of Evansville, and the U.S. Environmental Protection Agency and State of Indiana. The agreement was reached in November 2010 and approved by the federal district court on June 22, 2011.

Integrated Overflow Control Plan (IOCP)
Evansville's IOCP is a plan to reduce combined sewer overflows and overflows in parts of the separate sanitary sewer system.

Sanitary sewer
Sanitary sewers carry wastewater from residential and commercial buildings to wastewater treatment plants.

Storm sewer
Storm sewers capture only rainwater and transport it to local bodies of water.

Wastewater
Wastewater is residential and commercial waste collected from homes, businesses and industrial facilities.

5/13

Investing in clean water resources

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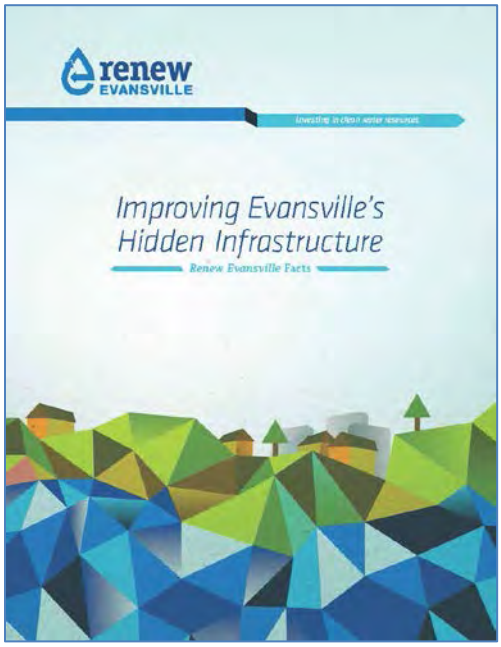
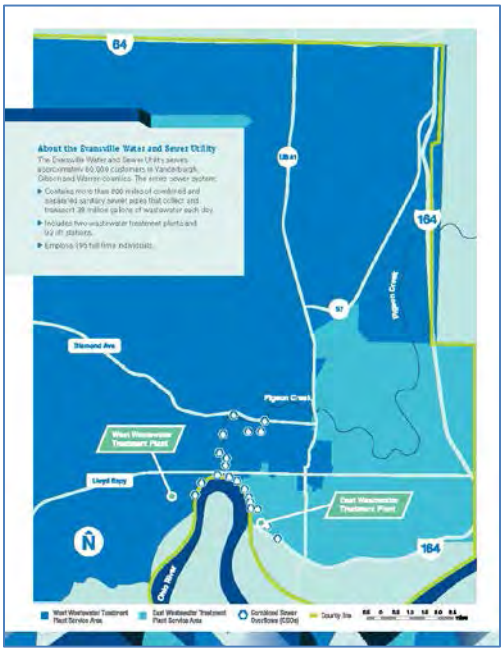
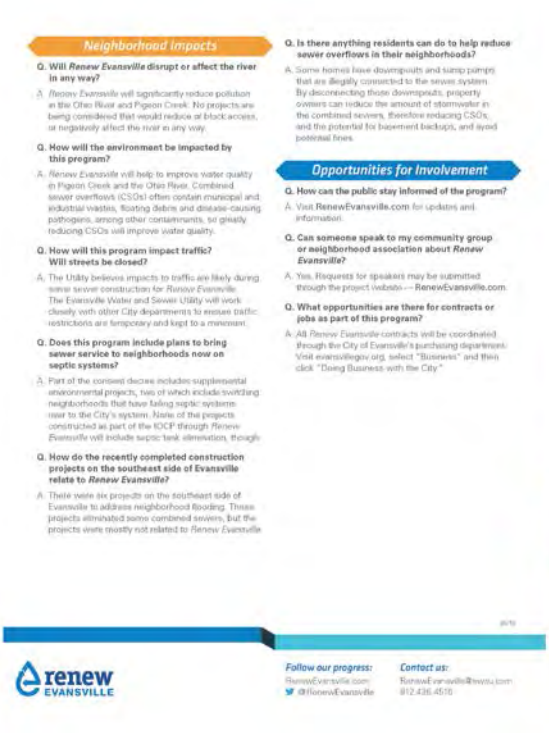
April to December 2012





Frequently asked questions (final)



Neighborhood Impacts

Q. Will *Renew Evansville* disrupt or affect the river in any way?

A. *Renew Evansville* will significantly reduce pollution in the Ohio River and Pigeon Creek. No projects are being considered that would reduce or block access, or negatively affect the river in any way.

Q. How will the environment be impacted by this program?

A. *Renew Evansville* will help to improve water quality in Pigeon Creek and the Ohio River. Combined sewer overflows (CSOs) often contain municipal and industrial wastes, floating debris and disease-causing pathogens, among other contaminants, so greatly reducing CSOs will improve water quality.

Q. How will this program impact traffic? Will streets be closed?

A. The Utility believes impacts to traffic are likely during some sewer construction for *Renew Evansville*. The Evansville Water and Sewer Utility will work closely with other City departments to ensure traffic restrictions are temporary and kept to a minimum.

Q. Does this program include plans to bring sewer service to neighborhoods now on septic systems?

A. Part of the consent decree includes supplemental environmental projects, two of which include switching neighborhoods that have failing septic systems over to the City's system. None of the projects constructed as part of the IOCP through *Renew Evansville* will include septic tank elimination, though

Q. How do the recently completed construction projects on the southeast side of Evansville relate to *Renew Evansville*?

A. There were six projects on the southeast side of Evansville to address neighborhood flooding. Those projects eliminated some combined sewers, but the projects were mostly not related to *Renew Evansville*.

Q. Is there anything residents can do to help reduce sewer overflows in their neighborhoods?

A. Some homes have downspouts and sump pumps that are illegally connected to the sewer system. By disconnecting those downspouts, property owners can reduce the amount of stormwater in the combined sewers, therefore reducing CSOs, and the potential for basement backups, and avoid potential fines.

Opportunities for Involvement

Q. How can the public stay informed of the program?

A. Visit RenewEvansville.com for updates and information.

Q. Can someone speak to my community group or neighborhood association about *Renew Evansville*?

A. Yes. Requests for speakers may be submitted through the project website — RenewEvansville.com.

Q. What opportunities are there for contracts or jobs as part of this program?

A. All *Renew Evansville* contracts will be coordinated through the City of Evansville's purchasing department. Visit evansvillegov.org, select "Business" and then click "Doing Business with the City."

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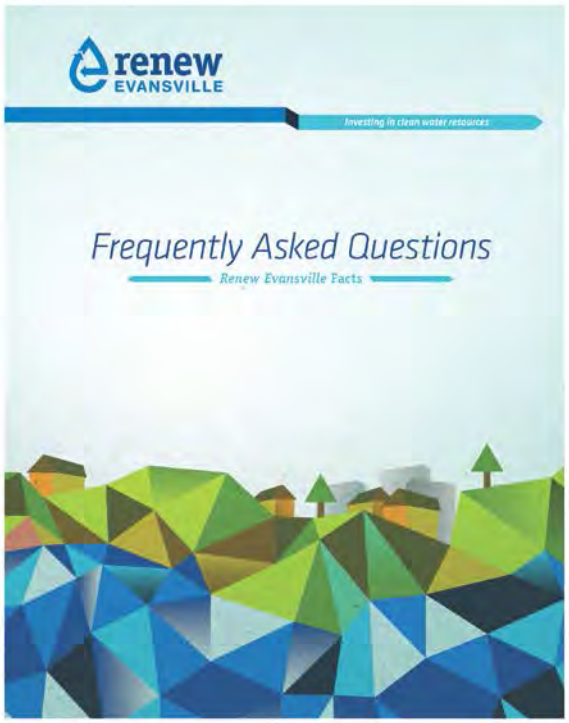


General Overview

Q. What is *Renew Evansville*?

A. The Evansville Water and Sewer Utility has been developing a long-term program that will be the largest capital improvement project in Evansville's history. This program — *Renew Evansville* — is in response to a federal mandate and will significantly upgrade one of Evansville's most important, yet unseen, assets…its sewer system.

Q. What is the Clean Water Act?

A. The Clean Water Act, enforced by the U.S. Environmental Protection Agency (EPA) and the Indiana Department of Environmental Management, mandates the control of sewer overflows across the U.S. Specifically, the Clean Water Act requires that the City develop a long-term plan to control combined sewer overflows consistent with applicable water quality standards.

Q. What are combined sewer overflows (CSOs)?

A. Combined sewer overflows (CSOs) occur when the amount of stormwater runoff and sanitary wastewater exceeds the capacity of the sewer infrastructure. In dry weather, stormwater and wastewater are sent to treatment plants. During rain events or snowmelt, the pipes cannot contain the stormwater/snowmelt resulting in overflows into local bodies of water. This was the way sewers were designed to operate until the 1950s.

Q. Why must combined sewer overflows (CSOs) be eliminated?

A. CSOs contain municipal and industrial wastes, floating debris and disease-causing bacteria, among other things. These pollutants are harmful to the environment and humans, and can prevent people from using the waters. Federal and state agencies are demanding cities across Indiana and the nation address CSOs by committing to large, long-term corrective capital programs. In essence, we have to rebuild our sewer infrastructure in Evansville.

Q. How did combined sewer overflows (CSOs) become a problem for Evansville?

A. Approximately 100 years ago, Evansville and more than 1,000 other cities across the U.S. began building sewers to carry stormwater away from homes, businesses and streets. Later, with indoor plumbing, homes and businesses connected their sewage lines into those storm sewers, making them "combined" sewers. Wastewater treatment plants were constructed in the 1940s and 1950s to treat the waste, but in times of heavy rainfall or snowmelt, by design, wastewater overflowed into local bodies of water. In 1994, the EPA issued the National CSO Control Policy, which was subsequently incorporated into Section 402(q) of the Clean Water Act. The Policy requires the control of CSO discharges.

In the past decade, Evansville has invested more than $120 million to improve its sewer system. While these projects are largely eliminating the decades-old problem of flooding on the southeast side of Evansville and have expanded the capacity of its treatment plants, much work remains to address CSOs.

Q. Why did the Department of Justice and the EPA review Evansville's sewer system?

A. Since the mid-1980s, the EPA has worked with the Department of Justice and state departments of environmental management to review combined sewer overflow (CSO) discharges across the U.S. Indiana has CSOs in approximately 100 cities. The federal EPA pursued consent decrees — binding legal agreements — with 16 of those cities, including Evansville. The other 80 cities are addressing CSOs through agreements with the state. Regardless of whether the agreements are with federal or state regulators, all cities must work to reduce combined sewer overflows.

Q. What was the result of the EPA's review?

A. The City of Evansville and the Evansville Water and Sewer Utility entered into a consent decree — a binding legal agreement — with the EPA, Department of Justice and State of Indiana in November 2010. That agreement was approved by a federal court in June 2011. The consent decree outlines Evansville's plan to significantly reduce its combined sewer overflows. That program is *Renew Evansville*.

Q. Have other cities faced similar sanctions from the EPA? Have their programs been as large as the one the Evansville Water and Sewer Utility is developing?

A. More than 1,000 cities across the U.S. have combined sewer overflows. The larger the city, the more robust and expensive the efforts typically must be to address combined sewer overflows. Approximately 16 cities in Indiana have entered into consent decrees with the EPA. The other cities must still comply with the CSO policy, but their efforts are reviewed at the state level and implemented through discharge permits and/or state enforcement orders.

Project Specifics

Q. When will construction begin? How long will it last?

A. Evansville has already implemented some early action projects and expects work on Evansville's Integrated Overflow Control Plan (IOCP) to begin in earnest in 2014. The Utility submitted a first draft of the IOCP on July 31, 2012, and a final version was originally scheduled to be delivered on Nov. 30, 2012. Regulators agreed to extend the deadline to May 31, 2013, after considering unprecedented rainfall measurements in 2011. As a result, specific construction projects and a schedule for improvements have not yet been approved. Once *Renew Evansville* projects have been approved by federal and state officials, the Utility anticipates it will have until 2040 to complete the construction projects to address overflows in the combined and separate systems.

Q. What does *Renew Evansville* include?

A. The major capital program will include:

- Immediate upgrades to existing infrastructure.
- A long-term capital improvement program to address combined sewer overflows and overflows in parts of the separate sanitary sewer system.
- Sustainable and "green" infrastructure solutions.
- Improvements to the utility's operations and maintenance.

Q. What is the schedule for the improvements?

A. Evansville's IOCP projects will be constructed in two phases through 2040.

Q. What happens if the Utility does not complete the improvements on time?

A. Cities that do not meet the terms of the consent decree face fines and penalties. Many of those fines range from $1,000 to $8,000 for each day the terms are not met.

Q. How does *Renew Evansville* relate to other City programs and initiatives?

A. The Evansville Water and Sewer Utility will coordinate planning, design and construction with several City departments, including those related to sustainability and maintaining streets and sidewalks.

Project Financing

Q. Who approves the program's design, construction and budget?

A. The federal and state regulators will give final approval for *Renew Evansville* and its programs. While *Renew Evansville* is being developed, community members' feedback will be collected through a Community Advisory Committee, on RenewEvansville.com and at public meetings.

Q. What is the anticipated total cost of *Renew Evansville*?

A. During the first 20 years, the draft IOCP is estimated to cost $373 million. To achieve results targeted by EPA, the City's plan calls to extend the IOCP approximately eight more years for an estimated total cost of $540 million.

Q. How will the program be funded?

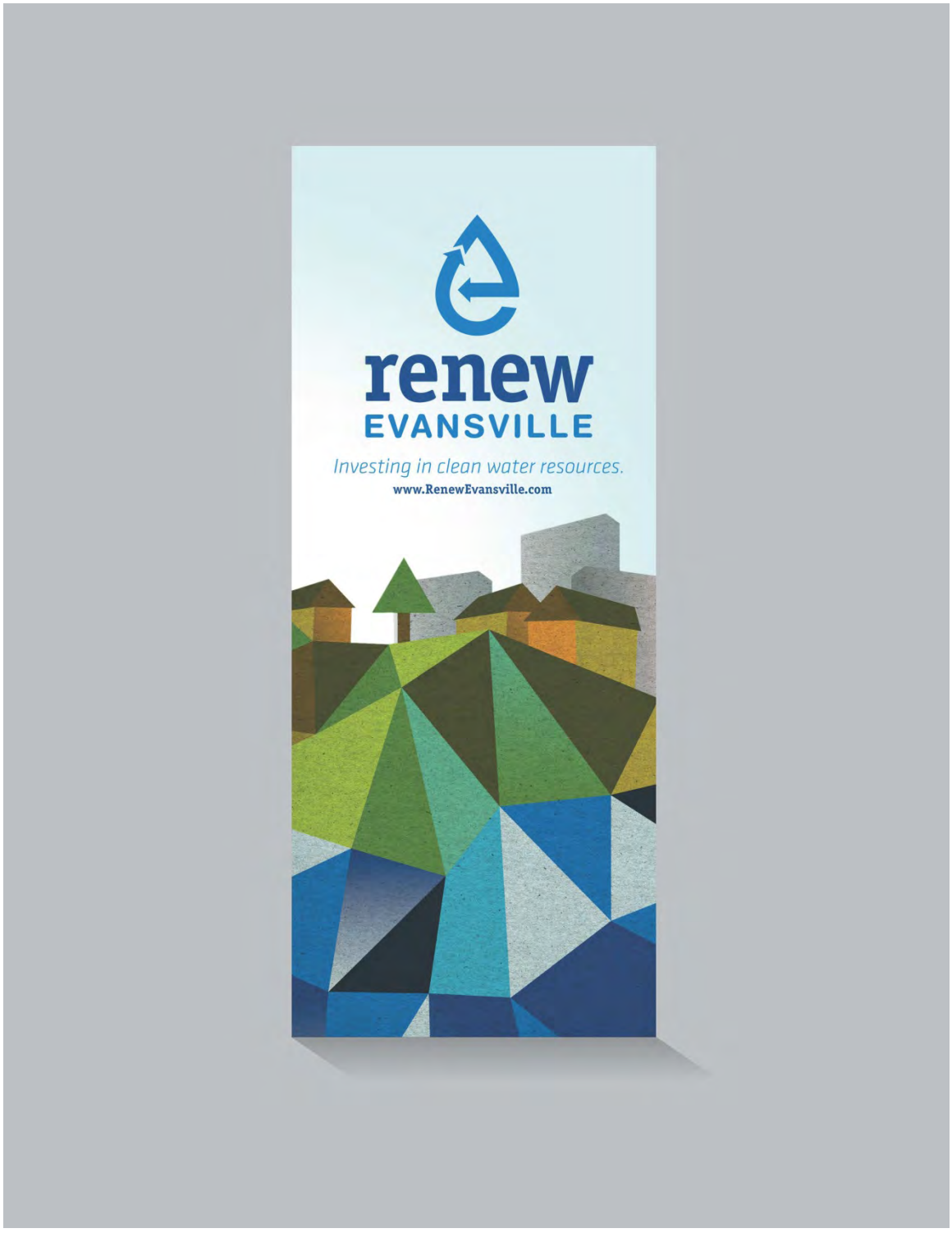
A. *Renew Evansville* will be funded mostly through user fees. The Utility will pursue low interest loans and grants where possible to help offset some of the costs.

Q. Will this program increase the rates of Evansville Water and Sewer Utility customers?

A. Yes, customer rate increases are expected over the duration of the program, but are not expected to exceed 2% of Evansville's median household income.

Templates and signage

Standing banner



PowerPoint template

APPENDIX C

Public Meeting 1 – August 28, 2012

The Utility presented its draft Integrated Overflow Control Plan to the public on Aug. 28, 2012. The meeting was advertised through media relations and Twitter. It was held in the evening at Benjamin Bosse High School.

Two members of the public attended. Two reporters, as well as many team members, also attended the event.

Meeting minutes

Purpose: To provide a general overview of Evansville's wastewater infrastructure, review the draft Integrated Overflow Control Plan and discuss preliminary cost estimates.

Discussion: Jim Garrard led the public meeting and answered questions.

1) **Exhibits and displays were posted and the team fielded questions from 5 to 7 p.m.**

2) **Presentation**
   - The formal presentation began at 5:26 p.m.
   - Introductions from Jim Garrard, *Renew Evansville*
   - Regulatory Background
     - Clean Water Act of 1972
     - Overview of Combined Sewer Overflows (CSOs)
   - Evansville Consent Decree
     - Negotiations with Environmental Protection Agency (EPA), Indiana Department of Environmental Management (IDEM) and U.S Department of Justice (DOJ)
     - Final Consent decree requirements
     - Recent program and status
       - Delivered 21 submittals in 19 months
       - Draft IOCP submitted July 31, 2012
       - Processing more wet-weather flow at WWTPs by almost 25%.
       - Septic elimination projects bringing sewers to two neighborhoods by December 2012
   - Sewer System Overview
     - Evansville's wastewater collection and treatment systems – Two wastewater treatment plants
       - East WWTP peak wet-weather capacity – 26 mgd
       - West WWTP peak wet-weather capacity – 27 mgd
       - 833 miles of sewers (60% combined, 40% separate), evenly divided between the WWTPs, 90 lift stations.
     - Evansville's CSOs and receiving streams
       - 22 outfalls
       - 3.4 billion gallons

        - Process 25% of wet-weather flow
        - Ohio River and Pigeon Creek
- Overflow Control Planning and Challenges
    - CSOs and percent capture
        - The question is not if we fix our systems, but how and for how long.
        - Evansville's plan will not achieve a 100% capture rate of CSOs.
    - Financial capability - Evansville cannot afford a 20-year plan to achieve satisfactory capture rating from EPA
    - Challenges unique to Evansville
        - Large CSO volume
        - Bee Slough
        - Levee and river level impacts
- Integrated Overflow Control Planning (IOCP)
    - Two capital improvement plans
        - CSO long-term improvement plan
        - Sanitary sewers remedial measures plan
    - Specific goals
        - Completely address Bee Slough and create a wetland area
- Natural treatment process
- No supplemental energy requirements for treatments
- Provides education, aesthetic, natural, bio-friendly environment
        - Maximize underutilized existing storm infrastructure
        - Incorporate green infrastructure where possible
- Downtown has opportunities
    - Optimize Pigeon Creek Interceptor operations for wet-weather operations
- Control Oak Hill CSO
    - Provide necessary redundancy and backup power at 7th Avenue lift station
    - Provide for better control of West WWTP influent
    - Reduce rainwater that enters the separate sewer system
    - "Right size" CSO controls to increase capture and treatment of CSOs system-wide
- Financial Capability and Plan Options
    - EPA wants cities to achieve between 90% and 98% CSO control through these plans.
    - Many cities have agreed to plans to achieve 90%, and then have returned to the EPA to request more time because they lacked funding.
- Recent rate increases and retirement of existing debt
- Financial capabilities
    - The final plan approved by EPA will most likely result in annual rate increases of 10% for at least six years before the 2% median household income threshold is reached.
- Approvable IOCP costs too high over 20 years
    - 20-year plan
        - $227 million
        - Avg. residential rate: $77.75/month
    - 25-year plan
        - $383 million
        - Avg. residential rate: $83.50/month
    - 30-year plan
        - $518 million

        - Avg. residential rate: $91.40/month
- Draft IOCP
    - Summary of proposed 30-year plan to reach approvable level of control
        - Phase 1
            - 20-year plan, $227 million
            - Captures 55% of CSOs
        - Phase 2
            - Additional 10 years, $379 million
            - Total
            - $606 million
            - Captures total of 90% of CSOs
            - Public Involvement and Next Steps
- Public Involvement
    - Website – www.RenewEvansville.com
    - Citizens Advisory Committee (CAC)
    - Twitter: @RenewEvansville
    - Public information tools (contact cards, fact sheets)
    - Public meetings
- Next Steps
    - EPA feedback
    - Revisions to IOCP
    - Final draft by Nov. 30, 2012
    - Potential for dispute resolution in court

3) Questions

Question: If the unification passes, will those inside and outside of city limits pay the same rates?
Answer: That's a City-Council question. It will depend on the type of bond structure for debt the Utility already has.

Question: Is the dual rate structure imposed on both residential and business customers?
Answer: Yes, they are billed by gallons of water used as their respective rates.

Question: Are the two rates calculated from volume used?
Answer: Yes, and this system applies to both industrial and residential rates. There are some industrial customers, however, who are billed at lower rates per gallon because they use so much water.

Question: After your proposed Phase 1, after 20 years, what percentage of the CSOs is eliminated?
Answer: About 55%.

Question: So we are currently only controlling 25% of CSOs?
Answer: Yes.

Question: When the Utility's debt is retired, do you mean a total of $23 million will be available for additional capital investment?
Answer: No, the Utility will pay $12 million in debt each year until 2023, and will continue paying $11 million in debt each year until 2031.

Question: Does the average residential rate from the 20-year plan ($77.75) consider both city and county rates?
Answer: Yes.

Question: Are you still expecting two different rates, city and county, in the 20-year plan?
Answer: Yes.

Question: I saw John Blair's comment in the Courier & Press [about other funding sources]. Have you found any other opportunities for financing the project?
Answer: We have, and there are few other options. There are some earmarks and grants to take advantage of, but not much we can depend on. Loaning and borrowing is Evansville's process – it's not free, but it's the cheapest way to get funding instead of borrowing privately. Other states are vying for the same grant money, too. And once the free money is gone, it's gone.

4) Meeting adjourned

Public Meeting 2 – May 14, 2013

The Utility presented its updated Integrated Overflow Control Plan to the public on May 14, 2013. The meeting was advertised through media relations and Twitter. It was held at 9 a.m. at McCollough Library.

Twelve residents, four reporters and 12 team members attended the event.

Meeting minutes

Purpose: To provide a general overview of Evansville's wastewater infrastructure, review the proposed Integrated Overflow Control Plan, and discuss preliminary cost estimates and timing for construction.

Discussion: Jim Garrard led the public meeting and answered questions. Paul Amico contributed to the presentation, giving the presentation on the recommended projects that comprise the plan.

1) **Exhibits and displays were posted around the room.**

2) **Presentation**
   - The formal presentation began at 9:10 a.m.
   - Introductions from Jim Garrard, *Renew Evansville*
   - Regulatory Background
     - Clean Water Act of 1972
     - Overview of Combined Sewer Overflows (CSOs) – When combined sewers were built, up to 50 or 60 years ago, engineers believed "dilution was the solution," meaning that if you add enough storm water to waste, then drain that combined sewer wastewater into a larger body of water, the hazardous material would be so diluted that it wouldn't' adversely impact plant or animal life.
   - Evansville Consent Decree
     - Negotiations with Environmental Protection Agency (EPA), Indiana Department of Environmental Management (IDEM) and U.S Department of Justice (DOJ)
     - Consent decree was approved in federal court in June 2011.
     - Final Consent decree requirements
       - Two years to develop an IOCP – Nov. 2010 to Nov. 30, 2012.
       - Final IOCP due date extended to May 31, 2013.
       - 20 or more years for construction.
       - Supplemental environmental projects to eliminate septic tanks at Cave Ave. and Fickas Road.
       - Fines and penalties for non-compliance.
       - Final consent decree requires Evansville to develop a long-term plan to make significant upgrades to existing infrastructure and new construction, address combined sewer overflow and overflows in parts of the separate sanitary sewer system, provide sustainable and green solutions, and improve the Utility's operations and strengthen maintenance disciplines.
     - Recent program and status
       - Delivered 75 submittals so far
       - Draft IOCP submitted July 31, 2012
       - Processing more wet-weather flow at WWTPs

        - Septic elimination projects brought sewers to two neighborhoods by December 2012

- Evansville's wastewater collection and treatment systems
    - Evansville's wastewater collection and treatment systems – Two wastewater treatment plants
        - East WWTP peak wet-weather capacity – 26 mgd
        - West WWTP peak wet-weather capacity – 27 mgd
        - 833 miles of sewers (60% combined, 40% separate), evenly divided between the WWTPs, 90 lift stations.
    - Evansville's CSOs and receiving streams
        - 22 outfalls
        - 2.0 billion gallons
        - Process 35% of wet-weather flow
        - Ohio River, Pigeon Creek and Bee Slough

- Overflow control and planning challenges
    - CSOs and percent capture
        - CSOs must be addressed because of federal mandates. It's not if, it's when and how.
        - Federal CSO policy requires 75-100% capture, 0-12 days of activation/year.
        - We used 2000 as a "typical year" for modeling and planning.
        - 100% capture would mean collecting and treating overflows from about 3.5 inches of rain in a 24-hour period.
        - Evansville's plan will not achieve 100% capture.
        - Most programs are in the 90-98% range.
    - Challenges unique to controlling Evansville's overflows
        - Large CSO volumes (2 billion gallons a year)
        - Bee Slough's unique characteristics
        - Levee and river level impacts
        - Separate sanitary sewer overflows and capacity issues in four priority areas must be address.
    - Evansville's CSO volume is 2.0 billion gallons (BG) a year.
        - Fort Wayne's is/was 1.1 BG, South Bend's is 0.9 BG, Indianapolis' is 7 BG, Louisville's is 4 BG, Milwaukee's is 9 BG and Omaha's is 3.5 BG
        - Evansville has a big city problem with a small city ratepayer base.
    - Bee Slough's unique challenges
        - Three large CSO outfalls
        - Ohio River level and Levee Authority pumping controls flow and water levels in Bee Slough
        - It's an eyesore and a health decree. The decree includes a reference that it must be addressed.
        - City's most upstream discharge to the Ohio River sensitive/recreational area.
        - It contributes about 70% of total CSO volume discharged into the Ohio River.
        - It's an all or nothing solution; those CSOs must be controlled 100%.
    - Unique challenges attributed to river level and levee impacts
        - Most CSO discharges are pumped by the Levee Authority Pump Stations during high Ohio River levels. This demands more up-pipe solutions.

- Pigeon Creek water level is influenced by Ohio River's level.
- Periods of high river/creek levels require the Utility to hold water in the system, reducing available storage volume during wet periods.
- High river/creek levels cause significant infiltration into the system during wet periods due to elevated groundwater levels.
- Most CSO outfalls pass through the levee.
- CSO controls may require deep excavations adjacent to the levee in sand/gravel soils.

- Integrated overflow control planning
  - IOCP
    - Two capital plans – Addressing both plans at once allows Evansville to get the best return for its investment.
      - CSO long-term control plan
      - Sanitary sewer remedial measures plan
    - Looking for best benefit for City's investment
  - Specific IOCP planning goals
    - Address Bee Slough!
    - Maximize underutilized existing infrastructure.
    - Incorporate green infrastructure where possible.
    - Optimize Pigeon Creek sewer main. There are about 12 inches of sediment in the bottom of the Pigeon Creek sewer. Cleaning it out is about $3 million, but that's a good investment for the returned, increased capacity.
    - Provide necessary redundancy and backup power at 7th Avenue lift station.
    - Provide for better control of West WWTP influent.
    - Reduce rainwater that enters the separate sewer system.
    - Right size CSO controls to increase capture and treatment of CSOs system-wide.
  - Summary of anticipated IOCP - Presented by Paul Amico, CH2M Hill
    - About 20 to 25 engineers worked on the plan. As it was developed, the team considered seven different alternatives to get to the target range of 0 to 12 CSO activations a year.
  - Summary of anticipated IOCP – CSO technical approach
    - Increase amount of storage
    - Use green infrastructure when practical. One example of green infrastructure is a green alley.
    - Create a wetland to address Bee Slough CSOs
    - Expand both WWTPs
    - Build a treatment plant to bypass CSOs
    - Separate sewers in some areas, especially those along Diamond Avenue, where INDOT built separated sewer pipes a few years ago during reconstruction. new, separated pipes haven't been linked to existing sewers yet.
    - Build three units to provide remote, high-rate treatment. Those would be along Diamond Avenue near Garden Park, at the mouth of Pigeon Creek/Ohio River meeting place, and near the West WWTP.
  - West service area findings and proposed solutions
    - Clean out the Pigeon Creek sewer main so Utility can have maximum storage during wet weather. We need to get clean water out of the system.

        - Use green infrastructure when possible. This includes working with other city agencies and finding ways to implement sewer fixes that are green, when available.
        - Separate sewers. The sanitary sewers are 50 to 60 years old and they have roots growing into them. About $16 to 17 million of rehab needs to be done to existing sewers.
        - Improve pumping systems at the WWTPs.
        - Build larger storage facility and units to treat CSOs
        - Reduce the amount of inflow/infiltration entering the separate sanitary sewer.
    - East service area findings and proposed solutions
        - Treat Ohio River and Bee Slough CSOs by expanding the wet-weather treatment capacity of the WWTPs, creating a wetland to naturally treat CSOs in Bee Slough, use green infrastructure in downtown.
        - Eliminate the Oak Hill CSO by building additional storage.
        - Reduce the amount of inflow/infiltration entering the separate sanitary sewer.
    - Bee Slough wetland – Eliminate the above-ground concrete cradle and bury the pipe.
        - Uses natural treatment processes. Water will be screened before it enters Bee Slough.
        - Requires no additional energy for treatment. Water can sit for up to 48 hours.
        - Uses no chemicals, produces no residuals.
        - Provides a food source and habitat for animals and vegetation.
        - Provides educational opportunities.
        - Provides a better aesthetic value than large storage facilities.
    - Bee Slough Integrated Pest Management Plan
        - The plan includes larval monitoring; maintaining a habitat for natural predators; treating for bacteria, mosquitoes and black flies.

- Financial capability analysis – Presented by Jim Garrard
    - Rates and existing debt
        - Little to no federal or state grant money is available to fund sewer system upgrades; projects must be funded through rate increases.
        - Evansville will pursue whatever grants are available and utilize low-interest state loan program as much as possible.
        - Current average in-city rate based on 3,859 gallons of water usage is $26.30 a month. Out of city rate is $35.50 a month.
        - We need to retire existing debt for recent upgrades.
            - Existing debt is $12 million/year until July 31, 2023.
            - Debt load is then $11 million/year until July 31, 2031.
            - All existing debt will be retired by July 31, 2031.
    - Financial capability and major cost components
        - Regular operating expenses
        - Capital/infrastructure costs outside of IOCP
        - IOCP costs
        - Reasonable assumptions such as interest rates, CPI, MHI growth, etc.
    - Evansville's ability to fund the IOCP
        - CSO Policy of 1994 makes it clear that the financial health of the community is a factor in determining the cost and schedule for sewer upgrades.

- Nevertheless, EPA has pushed communities to spend to the very limits of affordability, as quickly as possible.
- This has been an ongoing source of frustration and financial struggle for cities across the U.S.
- The U.S. Conference of Mayors and communities have been aggressively pursuing change in EPA's approach to CSO program.

o The plan we anticipate the EPA to want is too costly.
- EPA will likely want no more than four CSOs a year.
  - Four days of CSO activations would cost up to $815 million.
  - Zero days of CSO activations would cost up to $916 million.
- Must have a high level of control in the sanitary sewer system.
- Evansville's system poses unique challenges: There may be a sizable gap between cost and level on control. Evansville cannot afford a plan EPA/DOJ may want over 20 or 25 years.
- Evansville needs more than 20-year IOCP to decrease impacts to rates.

- Proposed IOCP – Is 28 years instead of 25, and $540 million instead of the $606 plan submitted in July 2012. Achieves the same level of control.
  - 28-year program – Agree to steadily increase rates over life of the plan to keep sewer bills at or near the 2% MHI.

CSO Long Term Control Plan*		SSRMP **
West	$259 million	$22 million
East	$235 million	$22 million
TOTAL	$496 million	$44 million

*Total anticipated IOCP cost is $540 million over 28 years.
**SSRMP (Sanitary Sewers Remedial Measures Plan) – capacity projects at two-year storm.

- Summary of proposed 28-year IOCP
  - Pursue approach that is most affordable over 20 years.
  - Second phase allows reevaluation and refinement – total of 28 years.
  - Allows time:
    - For additional evaluations and relentless pursuit of affordable and cost-effective solutions
    - For additional flow redirection/removal
    - To optimize existing infrastructure
    - To ensure we "right size" CSO storage/treatment facilities based on the best available future information
    - $12 million in debt services retired in 2031 allowing for additional funding capacity for IOCP

- Summary of IOCP – First 20 years

Control Measure	Cost
1. Bee Slough improvement projects	$150 million
2. West side storage projects	$99 million
3. Sewer separation	$28 million
4. Green infrastructure and system optimization	$21 million
5. SSO abatement projects	$44 million
6. WWTP modification	$31 million
TOTAL	$373 million

Achieves about 70% capture with about 50 activations

- Summary of IOCP – Years 21 to 28
  Additional eight-year plan to reach *approvable* level of control

Control Measure	Cost
1. 7th Avenue lift station replacement	$109 million
2. Downtown storage	$58 million
TOTAL	$167 million

Achieves about 92% capture with about 12 activations in a typical year

- Summary of IOCP: Level of control and water quality impacts of IOCP
  - 12 CSO activations in a typical year provides best return on investment in water quality benefit:
    - The Ohio River and Pigeon Creek are adversely affected by pollutants upstream of Evansville CSOs.
    - Water quality sampling and modeling have shown that reducing overflow frequency to less than 12 activations per year has no net benefit to complying with water quality standards.
    - Negligible improvements and no additional days of recreational use.
- Proposed IOCP: Rate impacts
  - Approximate funding capability if rates increased to and never exceed at 2% MHI
    - 20-year plan
      - $373 million
      - Average residential rate: $85.20/month in city; $115.20/month outside city
    - 28-year plan
      - $540 million
      - Average residential rate: $87.10/month in city; $117.60/month outside city
  - The final plan submitted to EPA will likely result in in-city monthly rate increases of $7.45, $2.65 and $2.85 the first three years to begin funding the IOCP. Subsequent increases through duration of IOCP to reach and maintain 2% MHI threshold.

- Public involvement
  - Website – renewevansville.com
  - Citizens Advisory Committee (CAC)
  - Social media
  - Public information tools (contact cards, fact sheets)
  - Public meetings

- What's next?
  - Share public comments with regulators and incorporate into final plan.
  - Submit final plan to regulators May 31.

- EPA will respond to final IOCP – accept, reject or seek modification.
- Plan may be revised based on future discussions with EPA.
- Potential for dispute resolution and being back in court.
- Evansville will not agree to a plan that is unfair to rate payers and not reasonable.

3) Questions

Question: Why aren't you considering a wetland for the west side?
Answer: There is plenty of room for the wetland near the East WWTP. The west side has very deep sewers, so connecting those to a wetland-type treatment facility would be difficult.

Question: Why haven't these problems been addressed since the Clean Water Act passed in 1972?
Answer: That is a good question, but it's difficult to answer. Evansville took the same approach as 1,000 cities across the nation: you only spend capital dollars when you have to. Raising rates usually only happens by threat of federal penalties. Also, it's expensive just to maintain the infrastructure we have, so additional capital expenses, like you see here, will require rate increased. It's similar to how many people approach their house. When something breaks, you find money to fix it. However, if things are old, but still working fine, and improving them doesn't increase the value of your home, you're less likely to spend the money.

Question: What is being done in the city to limit expansion and manage planning to reduce the number of new hookups to the system?
Answer: Mike Labitzke with EWSU is contacted during the city's permitting process.

Question: So can EPA still reject this $540 million plan? If so, what happens next?
Answer: Yes, EPA can reject the plan. We've met with them several times and haven't received any concrete feedback, just mainly new questions. If they reject the plan, we'll go back to court and argue that our ratepayers can't afford a more expensive or compressed plan. However, it's more likely that we'll modify the plan to reach a compromise.

Question: When will rates increase? Are they right away after EPA approves the plan?
Answer: Rates may be raised as early as October of this year. We believe the EPA will agree to some of the early action projects we've recommended in the plan.

Question: How does this IOCP relate to projects on the southeast side?
Answer: The sewer projects for Cave Avenue and Fickas Road are not part of *Renew Evansville*. They addressed flooding by separating the sewers in those areas.

Question: 2011 was a very wet year, but 2012 was a dry year. Is that the data you used to develop the plan?
Answer: No, we considered averages over the past decade or so and determined that 2000 is a "typical year" for Evansville.

Question: When will design begin?
Answer: Design will begin after EPA approval and once rate increases have been implemented. Early action projects need to start as soon as possible.

Question: Does this plan include any resources for property owners who have backups or floods in their basements?
Answer: There's nothing like that in the works now. There are some legal concerns about using public money to fix private property issues.

Public Meeting 3 – May 14, 2013

The Utility scheduled a 6:30 p.m. public meeting at Bosse High School to present its updated Integrated Overflow Control Plan. The meeting was advertised through media relations and Twitter. No members of the public attended. One reporter and several team members attended the event. No formal presentation was given.

Public Meeting 4 – May 15, 2013

The Utility presented its updated Integrated Overflow Control Plan to the public on May 15, 2013. The meeting was advertised through media relations and Twitter. It was held at 9:30 a.m. at North Park Library.

Seven residents, one Board member and six team members attended the event.

Meeting minutes

Purpose: To provide a general overview of Evansville's wastewater infrastructure, review the proposed Integrated Overflow Control Plan, and discuss preliminary cost estimates and timing for construction.

Discussion: Jim Garrard led the public meeting and answered questions. Paul Amico contributed to the presentation, giving the presentation on the recommended projects that comprise the plan.

1) **Exhibits and displays were posted around the room.**

2) **Presentation**
   - The formal presentation began at 9:30 a.m.
   - Introductions from Jim Garrard, *Renew Evansville*
   - Regulatory Background
     - Clean Water Act of 1972
     - Overview of Combined Sewer Overflows (CSOs) – When combined sewers were built, up to 50 or 60 years ago, engineers believed "dilution was the solution," meaning that if you add enough storm water to waste, then drain that combined sewer wastewater into a larger body of water, the hazardous material would be so diluted that it wouldn't' adversely impact plant or animal life.
   - Evansville Consent Decree
     - Negotiations with Environmental Protection Agency (EPA), Indiana Department of Environmental Management (IDEM) and U.S Department of Justice (DOJ). Their initial demands were that we complete the plan in six months and construct the program in 10 years. We said that wasn't reasonable and the courts agreed with us.
     - Consent decree was approved in federal court in June 2011.
     - Final Consent decree requirements
       - Two years to develop an IOCP – Nov. 2010 to Nov. 30, 2012.
       - Final IOCP due date extended to May 31, 2013.
       - 20 or more years for construction.
       - Supplemental environmental projects to eliminate septic tanks at Cave Ave. and Fickas Road.

        - Fines and penalties for non-compliance.
        - Final consent decree requires Evansville to develop a long-term plan to make significant upgrades to existing infrastructure and new construction, address combined sewer overflow and overflows in parts of the separate sanitary sewer system, provide sustainable and green solutions, and improve the Utility's operations and strengthen maintenance disciplines. Overflows in the sanitary sewer system are absolutely illegal in all instances.
    - Recent program and status
        - Delivered 75 submittals so far
        - Draft IOCP submitted July 31, 2012
        - Processing more wet-weather flow at WWTPs
        - Septic elimination projects brought sewers to two neighborhoods by December 2012.

- Evansville's wastewater collection and treatment systems
    - Evansville's wastewater collection and treatment systems – Two wastewater treatment plants
        - East WWTP peak wet-weather capacity – 26 mgd
        - West WWTP peak wet-weather capacity – 27 mgd
        - 833 miles of sewers (60% combined, 40% separate), evenly divided between the WWTPs, 90 lift stations.
    - Evansville's CSOs and receiving streams
        - 22 outfalls
        - 2.0 billion gallons
        - Process 35% of wet-weather flow
        - Ohio River, Pigeon Creek and Bee Slough

- Overflow control and planning challenges
    - CSOs and percent capture
        - CSOs must be addressed because of federal mandates. It's not if, it's when and how.
        - Federal CSO policy requires 75-100% capture, 0-12 days of activation/year
        - We used 2000 as a "typical year" for modeling and planning
        - 100% capture would mean collecting and treating overflows from about 3.5 inches of rain in a 24-hour period.
        - Evansville's plan will not achieve 100% capture
        - Most programs are in the 90-98% range.
    - Challenges unique to controlling Evansville's overflows
        - Large CSO volumes (2 billion gallons a year)
        - Bee Slough's unique characteristics
        - Levee and river level impacts
        - Separate sanitary sewer overflows and capacity issues in four priority areas must be address.
    - Evansville's CSO volume is 2.0 billion gallons (BG) a year.
        - Fort Wayne's is/was 1.1 BG, South Bend's is 0.9 BG, Indianapolis' is 7 BG, Louisville's is 4 BG, Milwaukee's is 9 BG and Omaha's is 3.5 BG
        - Evansville has a big city problem with a small city ratepayer base
    - Bee Slough's unique challenges
        - Three large CSO outfalls

        - Ohio River level and Levee Authority pumping controls flow and water levels in Bee Slough
        - It's an eyesore and a health decree. The decree includes a reference that it must be addressed.
        - City's most upstream discharge to the Ohio River sensitive/recreational area.
        - It contributes about 70% of total CSO volume discharged into the Ohio River.
        - It's an all or nothing solution; those CSOs must be controlled 100%
    - Unique challenges attributed to river level and levee impacts
        - Most CSO discharges are pumped by the Levee Authority Pump Stations during high Ohio River levels. This demands more up-pipe solutions.
        - Pigeon Creek water level is influenced by Ohio River's level.
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        - Most CSO outfalls pass through the levee.
        - CSO controls may require deep excavations adjacent to the levee in sand/gravel soils.

- Integrated overflow control planning
    - IOCP
        - Two capital plans – Addressing both plans at once allows Evansville to get the best return for its investment.
            - CSO long-term control plan
            - Sanitary sewer remedial measures plan
        - Looking for best benefit for City's investment
    - Specific IOCP planning goals
        - Address Bee Slough!
        - Maximize underutilized existing infrastructure.
        - Incorporate green infrastructure where possible.
        - Optimize Pigeon Creek sewer main. There are about 12 inches of sediment in the bottom of the Pigeon Creek sewer. Cleaning it out is about $3 million, but that's a good investment for the returned, increased capacity.
        - Provide necessary redundancy and backup power at 7th Avenue lift station.
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        - Reduce rainwater that enters the separate sewer system.
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        - About 20 to 25 engineers worked on the plan. As it was developed, the team considered seven different alternatives to get to the target range of 0 to 12 CSO activations a year.
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        - Expand both WWTPs
        - Build a treatment plant to bypass CSOs

        - Separate sewers in some areas, especially those along Diamond Avenue, where INDOT built separated sewer pipes a few years ago during reconstruction. Those new, separated pipes haven't been linked to existing sewers yet.
        - Build three units to provide remote, high-rate treatment. Those would be along Diamond Avenue near Garden Park, at the mouth of Pigeon Creek/Ohio River meeting place, and near the West WWTP.
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        - Build larger storage facility and units to treat CSOs
        - Reduce the amount of inflow/infiltration entering the separate sanitary sewer.
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        - Eliminate the Oak Hill CSO by building additional storage.
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        - Uses no chemicals, produces no residuals.
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        - Provides a better aesthetic value than large storage facilities.
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        - The plan includes larval monitoring; maintaining a habitat for natural predators; treating for bacteria, mosquitoes and black flies.
        - Insert wetland configuration map
        - Insert before and after photos

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    - Rates and existing debt
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        - Evansville will pursue whatever grants are available and utilize low-interest state loan program as much as possible.
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            - Existing debt is $12 million/year until July 31, 2023.

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        - Capital/infrastructure costs outside of IOCP
        - IOCP costs
        - Reasonable assumptions such as interest rates, CPI, MHI growth, etc.
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- Proposed IOCP – Is 28 years instead of 25, and $540 million instead of the $606 plan submitted in July 2012. Achieves the same level of control.
    - 28-year program – Agree to steadily increase rates over life of the plan to keep sewer bills at or near the 2% MHI.

CSO Long Term Control Plan*		SSRMP **
West	$259 million	$22 million
East	$235 million	$22 million
TOTAL	$496 million	$44 million

*Total anticipated IOCP cost is $540 million over 28 years.
**SSRMP (Sanitary Sewers Remedial Measures Plan) – capacity projects at two-year storm.

    - Summary of proposed 28-year IOCP
        - Pursue approach that is most affordable over 20 years.
        - Second phase allows reevaluation and refinement – total of 28 years.
        - Allows time:
            - For additional evaluations and relentless pursuit of affordable and cost-effective solutions
            - For additional flow redirection/removal
            - To optimize existing infrastructure
            - To ensure we "right size" CSO storage/treatment facilities based on the best available future information

        - $12 million in debt services retired in 2031 allowing for additional funding capacity for IOCP
    - Summary of IOCP – First 20 years

Control Measure	Cost
7. Bee Slough improvement projects	$150 million
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Achieves about 70% capture with about 50 activations

    - Summary of IOCP – Years 21 to 28
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2. 7th Avenue lift station replacement	$109 million
2. Downtown storage	$58 million
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    - Summary of IOCP: Level of control and water quality impacts of IOCP
      - 12 CSO activations in a typical year provides best return on investment in water quality benefit:
        - The Ohio River and Pigeon Creek are adversely affected by pollutants upstream of Evansville CSOs.
        - Water quality sampling and modeling have shown that reducing overflow frequency to less than 12 activations per year has no net benefit to complying with water quality standards.
        - Negligible improvements and no additional days of recreational use.
    - Proposed IOCP: Rate impacts
      - Approximate funding capability if rates increased to and never exceed at 2% MHI
        - 20-year plan
          - $373 million
          - Average residential rate: $85.20/month in city; $115.20/month outside city
        - 28-year plan
          - $540 million
          - Average residential rate: $87.10/month in city; $117.60/month outside city
      - The final plan submitted to EPA will likely result in in-city monthly rate increases of $7.45, $2.65 and $2.85 the first three years to begin funding the IOCP. Subsequent increases through duration of IOCP to reach and maintain 2% MHI threshold.

- Public involvement
    - Website – renewevansville.com
    - Citizens Advisory Committee (CAC)
    - Social media
    - Public information tools (contact cards, fact sheets)
    - Public meetings

- What's next?
    - Share public comments with regulators and incorporate into final plan.

- Submit final plan to regulators May 31.
- EPA will respond to final IOCP – accept, reject or seek modification.
- Plan may be revised based on future discussions with EPA.
- Potential for dispute resolution and being back in court.
- Evansville will not agree to a plan that is unfair to rate payers and not reasonable.

3) Questions

Question: Is there a pump station by Diamond Avenue?
Answer: No, that is a Levee pumping station.

Question: Are you going to build a scouring structure?
Answer: No. Sewers are designed to flush themselves out a couple of times a day. The problem we have is you have a pipe to carry storm water, and it only carries sewer. So, this is an ongoing issue for the city.

Question: How do you clean the Pigeon Creek Interceptor?
Answer: The pipe is flat and built for storm water. It's an ongoing maintenance issue for the city. It may be $3 or 4 million every 10 years or so to keep it clean. That's still cheaper than building a new interceptor to run parallel to it.

Question: There are issues in the basins along the river and gulf. Organizations like Ducks Unlimited know all about natural types of solutions. Have you engaged groups like them?
Answer: Yes, there are several environmental experts and community organizations represented on our CAC. CH2M Hill has experts in wetlands who consulted for this project. This project is several years away, so we have plenty of time to work with experts and do robust public outreach once those plans start taking shape. When we started talking about the wetland, EPA asked us why we didn't just build a large storage basin. It's an entrance to our city, and we're committed to finding a solution that fixes the problem and looks better.

Question: Why did they remove the lake in Aiken Park? Couldn't it have served as a staging area of water?
Answer: Those facilities are great in localized areas. It's more challenging that than in urban areas.

Question: When did we know EPA was cracking down? The Utility was mismanaged for years and now you're asking the public to foot the bill. Why is the city allowing more expansion and construction that further burdens the system? How will this be managed down the road? What percentage of the water is clear water?
Answer: We will evaluate ordinances to look at building in flood plains in the future. We stopped constructing combined sewers in the 1960s. There are areas where clean water is about 20% of CSOs. There are others where it's only 3%.

Question: Why are there leaky sewers? Is it because you didn't do enough maintenance? Is the biggest problem area the southeast side of town?
Answer: We looked at a north WWTP, but determined that wouldn't reduce CSOs. That money was spent on the existing WWTPs to increase capacity. Other money went to fixing the southeast side's flooding issues, because it flooded during small rain events.

Question: How do we know this program will be managed properly?
Answer: Elected officials designate department heads, so you can show your support or opposition by voting.
Question: As you design this, are you designing with enough capacity for Evansville's future growth?

Answer: Yes. We're anticipating growth over the next 30-40 years.

Question: What are the fines for noncompliance?
Answer: They range in the thousands of dollars for each day the plan isn't submitted or construction isn't started. The bottom line in we have to do this, and we're in the same situation as cities across the U.S. There is no state or federal grant money.

Question: I've been hearing about this for at least 8 years. Why haven't we done anything sooner? (Comment: We had to build a stadium.)
Answer: Eight years ago, there were plans to do a north side treatment plant. That idea got scrapped because it wasn't going to resolve the CSO solution. No CSO benefit. That plan was scrapped and the financing went to west treatment plant and allowed us to treat additional flows. Much of that money was spent to upgrade that facility to manage flow. That money also went to address southeast side during rain events – about $100 million. But, you're right. The investment to deal with this issue hasn't been there. We've been focused on keeping the lights on.

Question: Why are the rates you show different, especially when sewers outside the city limits are newer and in better shape?
Answer: The rates differential was set years ago, and that policy was recently affirmed by the Indiana Utility Regulatory Commission. Sewers outside of city limits are harder to maintain and you have to pump the effluent further to treat it. The 35% differential will remain the same, but it appears that the out of city ratepayers pay more because the rates increase by percentage, not dollar amounts.

Question: Why didn't you hold meetings outside of the city limits?
Answer: We are holding meetings in each of the city's six wards, offering both morning and evening meetings. We've promoted them via the website and have received a lot of media coverage.

RE question to attendees: How would you propose we get the word out?
Answer: PSAs on the radio.

Question: The sewer and water facility are city-owned or county-owned?
Answer: City-owned

Question: Where does it say the city has to provide water to the county?
Answer: I don't believe it does. But, it's revenue for the city and promotes growth around the city. But, I don't believe there's any mandate to provide the service.

Question: So, in other words, if the county wanted to be separated, it would be like Darmstadt and have its own facility.
Answer: I suppose if there was a body that drove that, but it seems unlikely it would happen.

Question: Does Darmstadt flow into this system?
Answer: They do. They have a wholesale agreement with the city. Each home or property has a pressurized grinder pump. It's semi treated water when it comes into Evansville's system. Then, Evansville treats it, and there's a charge for it.

Question: How is Indy covering the cost?
Answer: Rate increases. Their volume is 7 billion gallons per year $1.7 billion. Indy had made no investment in infrastructure.

Question: What is going to be different 28 years from now?

Answer: We will be constantly checking water quality and readjusting our program based on that. Fort Wayne and Indianapolis have started residual discharge process guidelines, so we expect to start those in a few years.

Question: Would there be any merit to calculating services billed through monthly fees? It could motivate people to conserve their resources, especially those who have sump pumps and downspouts connected to the storm sewers.
Answer: Some cities do that via a storm water utility. Industrial customers are billed for items such as flat roofs and parking lots.

Question: Consider credits for rain barreling and other programs where there are incentives if you take these steps.
Answer: Traditionally it's the commercial customers who take most advantages of those improvements because they have flat roofs, etc. It's something worth looking at. If your sump pump is connected to your sewer line, disconnect it.

Question: Does the city close access to Pigeon Creek or the Ohio River when CSOs have been activated?
Answer: No, although people are generally aware of water quality, especially when there's wastewater in Bee Slough. When I say days of recreation, I mean when Pigeon Creek meets water quality standards for E. coli. Overall, water is probably as safe as it was when we were kids; it's just that we're more aware of pollution today.

Question: This may be comic relief, but the Ohio River was used for recreation. Now, I don't see anyone skiing or boating. Is this due to pollution levels?
Answer: I suspect, when you were a kid, you didn't know it was polluted. It's likely cleaner now than it was when you were a kid. People may be more aware of it now and have higher standards.

Question: We've looked at in-city and county rates. Are there different rates for commercial? Are they increasing at the same level?
Answer: They are. Rates go up based on the same percentage. It's based upon the size of the meter and how much flow they use. As volume goes up, their volumes are less.

Question: This total cost isn't spread over households?
Answer: It's a percentage increase. Everybody has the same percentage increase.

Question/Comment: Your website is good and there's a lot of information on there. In the future, make reference to Bee Slough geographically and historically. I know it originates near Angel Mounds. It stretches all the way across there. It's been there all the way into Warrick County. I happen to know where the Chandler/Newburgh water system intersects. They have a worse problem than Evansville going into the Ohio River, just upstream. It's a growing area, and they'll need to address this too. This needs to take into scope the whole Tri-State (inside Indiana). This is a statewide problem here. There are a lot of people running off into the Wabash. It takes a lot of toxins to the Ohio.
Answer: That's good information to be provided to IDEM. That's why the water quality study was important.

Question: The city is funding Roberts Park and the new hotel. Is the city funding any of this?
Answer: It's being done through sewer rates only. Hotel is being funded through a TIF. Not sure if those moneys can fund the sewers around that.

Question: The state has a surplus of money. Has anybody pursued redirecting some of those funds?
Answer: I believe those discussions have happened but haven't gone very well.

Question: Do you know if Warrick County is doing something similar?
Answer: Warrick County has a consent decree as well.

Public Meeting 5 – May 15, 2013

The Utility presented its updated Integrated Overflow Control Plan to the public on May 15, 2013. The meeting was advertised through media relations and Twitter. It was held at 6:30 p.m. at Vogel Elementary School.

Six residents and seven team members attended the event.

Meeting minutes

Purpose: To provide a general overview of Evansville's wastewater infrastructure, review the proposed Integrated Overflow Control Plan, and discuss preliminary cost estimates and timing for construction.

Discussion: Jim Garrard led the public meeting and answered questions. Paul Amico contributed to the presentation, giving the presentation on the recommended projects that comprise the plan.

1) **Exhibits and displays were posted around the room.**

2) **Presentation**
   - The formal presentation began at 6:40 a.m.
   - Introductions from Jim Garrard, *Renew Evansville*
   - Regulatory Background
     - Clean Water Act of 1972
     - Overview of Combined Sewer Overflows (CSOs) – When combined sewers were built, up to 50 or 60 years ago, engineers believed "dilution was the solution," meaning that if you add enough storm water to waste, then drain that combined sewer wastewater into a larger body of water, the hazardous material would be so diluted that it wouldn't' adversely impact plant or animal life.
   - Evansville Consent Decree
     - Negotiations with Environmental Protection Agency (EPA), Indiana Department of Environmental Management (IDEM) and U.S Department of Justice (DOJ). Their initial demands were that we complete the plan in six months and construct the program in 10 years. We said that wasn't reasonable and the courts agreed with us.
     - Consent decree was approved in federal court in June 2011.
     - Final Consent decree requirements
       - Two years to develop an IOCP – Nov. 2010 to Nov. 30, 2012.
       - Final IOCP due date extended to May 31, 2013.
       - 20 or more years for construction.
       - Supplemental environmental projects to eliminate septic tanks at Cave Ave. and Fickas Road.
       - Fines and penalties for non-compliance.
       - Final consent decree requires Evansville to develop a long-term plan to make significant upgrades to existing infrastructure and new construction, address combined sewer overflow and overflows in parts of the separate sanitary sewer system, provide sustainable and green solutions, and improve the Utility's operations and strengthen maintenance disciplines. Overflows in the sanitary sewer system are absolutely illegal in all instances.
     - Recent program and status

        - Delivered 75 submittals so far
        - Draft IOCP submitted July 31, 2012
        - Processing more wet-weather flow at WWTPs
        - Septic elimination projects brought sewers to two neighborhoods by December 2012.

- Evansville's wastewater collection and treatment systems
    - Evansville's wastewater collection and treatment systems – Two wastewater treatment plants
        - East WWTP peak wet-weather capacity – 26 mgd
        - West WWTP peak wet-weather capacity – 27 mgd
        - 833 miles of sewers (60% combined, 40% separate), evenly divided between the WWTPs, 90 lift stations.
    - Evansville's CSOs and receiving streams
        - 22 outfalls
        - 2.0 billion gallons
        - Process 35% of wet-weather flow
        - Ohio River, Pigeon Creek and Bee Slough

- Overflow control and planning challenges
    - CSOs and percent capture
        - CSOs must be addressed because of federal mandates. It's not if, it's when and how.
        - Federal CSO policy requires 75-100% capture, 0-12 days of activation/year
        - We used 2000 as a "typical year" for modeling and planning
        - 100% capture would mean collecting and treating overflows from about 3.5 inches of rain in a 24-hour period.
        - Evansville's plan will not achieve 100% capture
        - Most programs are in the 90-98% range.
    - Challenges unique to controlling Evansville's overflows
        - Large CSO volumes (2 billion gallons a year)
        - Bee Slough's unique characteristics
        - Levee and river level impacts
        - Separate sanitary sewer overflows and capacity issues in four priority areas must be address.
    - Evansville's CSO volume is 2.0 billion gallons (BG) a year.
        - Fort Wayne's is/was 1.1 BG, South Bend's is 0.9 BG, Indianapolis' is 7 BG, Louisville's is 4 BG, Milwaukee's is 9 BG and Omaha's is 3.5 BG
        - Evansville has a big city problem with a small city ratepayer base
    - Bee Slough's unique challenges
        - Three large CSO outfalls
        - Ohio River level and Levee Authority pumping controls flow and water levels in Bee Slough
        - It's an eyesore and a health decree. The decree includes a reference that it must be addressed.
        - City's most upstream discharge to the Ohio River sensitive/recreational area.
        - It contributes about 70% of total CSO volume discharged into the Ohio River.
        - It's an all or nothing solution; those CSOs must be controlled 100%

- Unique challenges attributed to river level and levee impacts
  - Most CSO discharges are pumped by the Levee Authority Pump Stations during high Ohio River levels. This demands more up-pipe solutions.
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    - Water quality sampling and modeling have shown that reducing overflow frequency to less than 12 activations per year has no net benefit to complying with water quality standards.
    - Negligible improvements and no additional days of recreational use.
- Proposed IOCP: Rate impacts
  - Approximate funding capability if rates increased to and never exceed at 2% MHI
    - 20-year plan
      - $373 million
      - Average residential rate: $85.20/month in city; $115.20/month outside city
    - 28-year plan
      - $540 million
      - Average residential rate: $87.10/month in city; $117.60/month outside city
  - The final plan submitted to EPA will likely result in in-city monthly rate increases of $7.45, $2.65 and $2.85 the first three years to begin funding the IOCP. Subsequent increases through duration of IOCP to reach and maintain 2% MHI threshold.

- Public involvement
  - Website – renewevansville.com
  - Citizens Advisory Committee (CAC)
  - Social media
  - Public information tools (contact cards, fact sheets)
  - Public meetings

- What's next?
  - Share public comments with regulators and incorporate into final plan.
  - Submit final plan to regulators May 31.

- EPA will respond to final IOCP – accept, reject or seek modification.
- Plan may be revised based on future discussions with EPA.
- Potential for dispute resolution and being back in court.
- Evansville will not agree to a plan that is unfair to rate payers and not reasonable.

3) Questions

Question: How large is Bee Slough?
Answer: It's about a mile long. The channel is about 25 feet across; 50 feet end to end. When it dries up, it stinks. It's designed to hold water. Some people think the smell is the treatment plant. It's usually not. It's Bee Slough.

Question: Are there any industry influent flowing into that?
Answer: No. Storm water and CSOs. 70% of CSO volume that hits the Ohio River flows through Bee Slough. It's a problematic area. The other challenge we have with Bee Slough is designated as a sensitive area designated by EPA, which requires a higher level treatment to get the bacteria out of the water.

Question: So, will Bee Slough be the first thing completed?
Answer: Parts of it. It's an open sewer that should have been fixed long ago. It has impact on neighbors.

Question: By the time you get this built in 28 years, will it be obsolete? In years to come, costs will escalate.
Answer: The engineering model considers those factors. Our team has consulted with Metropolitan Development to expect growth from population and development perspectives. Don't want to build capacity that's obsolete in 20 years. The cost will go up as well – inflation and borrowing model.

Question: What about surrounding areas like Henderson? Are they involved?
Answer: The government has contacted Henderson as well (not part of Evansville's consent decree).

Comment: In the 2000s, there was a very aggressive enforcement action by the EPA. A hundred communities in Indiana are in action with IDEM.

Question: Why isn't there a mandate for developers to create their own systems? In Virginia, it took a year to get a housing development plan approval. Put the cost on developers here. I don't see that happening much here.
Answer: Some of that is changing here locally.

Question: I think the cost should be tossed back to the developers. They could build in the cost to their project.
Answer: It's an evolution for cities. Evansville is behind on those discussions. Developers typically fight it.

Question: So, there is some protection built in?
Answer: We're required to look at a range of alternatives.

RE comment: It's very expensive to clean out the Pigeon Creek Interceptor, as much as $5 million, and it's dangerous work.

Question: Will individuals be required to get smoke testing? Will they need to separate if connecting illegally? Will they be required to bear the cost of these? Fair is fair.
Answer: In the darker areas (of the map), it's illegal. We're starting that process. With 65,000 customers, it will take a while. Right now, it's by ordinance. The individual is required to separate it.

Question: What percentage is septic tank in this system now?
Answer: I don't recall the numbers. It's a couple hundred. There were 29 neighborhoods identified as concentrated areas of septic. The top 10 subdivisions will be converted into separate system.

Question: Is there an ordinance that covers that?
Answer: No. Only ordinance is if they're within 300 fit of the sewer system and after their septic system fails, then they're required.

Question: Can you show that there's industrial waste? Are they required to clean it up separately?
Answer: We have ordinances and rates in place for industry to pre-treat on site or they pay a penalty if they give us super-loaded waste. Most of the pollution we're talking about is human waste.

Question: There's no cost passed back to industry for past violations?
Answer: No, likely the law has changed over time.

Question: Will this reduce the storm water or flow of the flood plain line? I know it won't hinder it? Or, will it?
Answer: What goes in to the Ohio River, it's a finite area. The levee drops a high wall during high river.

Question: So, it won't change the flood plain level? It's not helping or hurting?
Answer: No.

Question: How long are we talking in terms of Bee Slough improvements?
Answer: The bulk of the cost is in running the pipes and the pump stations. When the flow hits, it's a big peak flow (200 million gallons of water). It has to be addressed.

Question: That $150 million for Bee Slough, how does it affect the combined sewer outfall? Is it more cost effective to treat that one specific area?
Answer: Our percent capture goes from 30% to 70%, largely because of addressing Bee Slough. The City is trying to get in the business of getting involved on projects and doing some green infrastructure. If roads are being repaved or enhancements are added downtown, the Utility is there to encourage green investments. The city can get involved with helping fund that.

Question: What about the pollutants upstream?
Answer: It's IDEM's responsibility. It's largely agricultural runoff.

Question: By when do you need the plan approved? Do you need public approval?
Answer: We need to let the public know about it and allow them to comment so EPA can see the public's reaction and questions about the program. You can also submit comments online.

Question: After 28 years, do the rates hold?
Answer: Probably so.

Question: Rates are unlikely to come down?
Answer: That's right.

Question: What happened in Indianapolis?
Answer: Their rates started very low.

Question: Will there be allowances for those who it really will hurt?
Answer: State statute doesn't allow a differential. That's right now under state law. But, we're looking for a voucher program or something. And, keep in mind, this is just the sewer bill. Not water and sewer. It is 12 years out.

Question: When could rate increases start?
Answer: Potentially next year.

Question: What would outside of city rates be?
Answer: 35% higher.

Question: How much did the last lawsuit cost?
Answer: It was roughly under $1 million. We sued the previous sewer operator. We had a private operator at the time, so we sued them because they weren't maintaining the system properly. Even investigating in arguing this in court is almost $2 million.

Question: The longer you kick the can down the road, the higher the prices.
Answer: That's right. We might start with the EPA to agree on the first 5 years of the plan. Work through the rest. The difference with the plans is basically scaling.

Question: EPA can just say no and we think you obfuscated all of this? And, then you have less time next time?
Answer: Yes.

Question: When would fines kick in?
Answer: It's on a project by project basis.

Question: Do you have a lawyer who has worked in front of them (EPA) before?
Answer: We do. Over the past few months, we've built an amicable relationship and good rapport with them (EPA) and have provided everything they've asked for in terms of reports and info.

Comment: I think that's important to point out to the public: That you're going on goodwill now and that could change.

Question: Have you built in for unknowns in your numbers?
Answer: Our cost models have projections for contingencies and safety factors, land acquisitions, etc.

Question: It could potentially be less?
Answer: Potentially

Question: How will contractors work?
Answer: The Utility does not have enough in-house staff to manage a program of this size, especially as it grows. We'll enlist the help of a consultant to manage the project to make sure it's implemented correctly. Almost 100% of the builds are by design/bid/build. There may be some design/build deliverables, where a designer is brought together with an engineer, where it makes sense. This will attract larger contractors from around the region and around the country. To the extent we can get economies of scale, we will

Question: Will EPA be involved?
Answer: The Utility runs a professional organization. EPA is interested in the effectiveness of the program. The engineering firms building the plans will not get to bid on the design. Our goal is to make this as cost-effective and effective.

Question: What about inflation?
Answer: Our financial analysis and cost estimates are based on 2013 dollars.

Question: This will be economic stimulus. This is important to point out. How many jobs?
Answer: An ancillary benefit is it will provide a lot of jobs for a long time.

Comment: Great presentation. Thank you. You've done well.

Public Meeting 6 – May 16, 2013

The Utility presented its updated Integrated Overflow Control Plan to the public on May 16, 2013. It was held at 9:30 a.m. at Red Bank Library. Two members of the public and 10 team members attended the event.

1) **Exhibits and displays were posted around the room.**

2) **Presentation**
   - The formal presentation began at 9:30 a.m.
   - Introductions from Jim Garrard, *Renew Evansville*
   - Regulatory Background
     - Clean Water Act of 1972
     - Overview of Combined Sewer Overflows (CSOs) – When combined sewers were built, up to 50 or 60 years ago, engineers believed "dilution was the solution," meaning that if you add enough storm water to waste, then drain that combined sewer wastewater into a larger body of water, the hazardous material would be so diluted that it wouldn't' adversely impact plant or animal life.
   - Evansville Consent Decree
     - Negotiations with Environmental Protection Agency (EPA), Indiana Department of Environmental Management (IDEM) and U.S Department of Justice (DOJ)
     - Consent decree was approved in federal court in June 2011.
     - Final Consent decree requirements
       - Two years to develop an IOCP – Nov. 2010 to Nov. 30, 2012.
       - Final IOCP due date extended to May 31, 2013.
       - 20 or more years for construction.
       - Supplemental environmental projects to eliminate septic tanks at Cave Ave. and Fickas Road.
       - Fines and penalties for non-compliance.
       - Final consent decree requires Evansville to develop a long-term plan to make significant upgrades to existing infrastructure and new construction, address combined sewer overflow and overflows in parts of the separate sanitary sewer system, provide sustainable and green solutions, and improve the Utility's operations and strengthen maintenance disciplines.
     - Recent program and status
       - Delivered 75 submittals so far
       - Draft IOCP submitted July 31, 2012
       - Processing more wet-weather flow at WWTPs
       - Septic elimination projects brought sewers to two neighborhoods by December 2012

- Evansville's wastewater collection and treatment systems
  - Evansville's wastewater collection and treatment systems – Two wastewater treatment plants
    - East WWTP peak wet-weather capacity – 26 mgd
    - West WWTP peak wet-weather capacity – 27 mgd
    - 833 miles of sewers (60% combined, 40% separate), evenly divided between the WWTPs, 90 lift stations.
  - Evansville's CSOs and receiving streams

        - 22 outfalls
        - 2.0 billion gallons
        - Process 35% of wet-weather flow
        - Ohio River, Pigeon Creek and Bee Slough

- Overflow control and planning challenges
    - CSOs and percent capture
        - CSOs must be addressed because of federal mandates. It's not if, it's when and how.
        - Federal CSO policy requires 75-100% capture, 0-12 days of activation/year
        - We used 2000 as a "typical year" for modeling and planning
        - 100% capture would mean collecting and treating overflows from about 3.5 inches of rain in a 24-hour period.
        - Evansville's plan will not achieve 100% capture
        - Most programs are in the 90-98% range.
    - Challenges unique to controlling Evansville's overflows
        - Large CSO volumes (2 billion gallons a year)
        - Bee Slough's unique characteristics
        - Levee and river level impacts
        - Separate sanitary sewer overflows and capacity issues in four priority areas must be address.
    - Evansville's CSO volume is 2.0 billion gallons (BG) a year.
        - Fort Wayne's is/was 1.1 BG, South Bend's is 0.9 BG, Indianapolis' is 7 BG, Louisville's is 4 BG, Milwaukee's is 9 BG and Omaha's is 3.5 BG
        - Evansville has a big city problem with a small city ratepayer base
    - Bee Slough's unique challenges
        - Three large CSO outfalls
        - Ohio River level and Levee Authority pumping controls flow and water levels in Bee Slough
        - It's an eyesore and a health decree. The decree includes a reference that it must be addressed.
        - City's most upstream discharge to the Ohio River sensitive/recreational area.
        - It contributes about 70% of total CSO volume discharged into the Ohio River.
        - It's an all or nothing solution; those CSOs must be controlled 100%
    - Unique challenges attributed to river level and levee impacts
        - Most CSO discharges are pumped by the Levee Authority Pump Stations during high Ohio River levels. This demands more up-pipe solutions.
        - Pigeon Creek water level is influenced by Ohio River's level.
        - Periods of high river/creek levels require the Utility to hold water in the system, reducing available storage volume during wet periods.
        - High river/creek levels cause significant infiltration into the system during wet periods due to elevated groundwater levels.
        - Most CSO outfalls pass through the levee.
        - CSO controls may require deep excavations adjacent to the levee in sand/gravel soils.

- Integrated overflow control planning
    - IOCP

- Two capital plans – Addressing both plans at once allows Evansville to get the best return for its investment.
  - CSO long-term control plan
  - Sanitary sewer remedial measures plan
- Looking for best benefit for City's investment

- Specific IOCP planning goals
  - Address Bee Slough!
  - Maximize underutilized existing infrastructure.
  - Incorporate green infrastructure where possible.
  - Optimize Pigeon Creek sewer main. There are about 12 inches of sediment in the bottom of the Pigeon Creek sewer. Cleaning it out is about $3 million, but that's a good investment for the returned, increased capacity.
  - Provide necessary redundancy and backup power at 7th Avenue lift station.
  - Provide for better control of West WWTP influent.
  - Reduce rainwater that enters the separate sewer system.
  - Right size CSO controls to increase capture and treatment of CSOs system-wide.
- Summary of anticipated IOCP - Presented by Paul Amico, CH2M Hill
  - About 20 to 25 engineers worked on the plan. As it was developed, the team considered seven different alternatives to get to the target range of 0 to 12 CSO activations a year.
- Summary of anticipated IOCP – CSO technical approach
  - Increase amount of storage
  - Use green infrastructure when practical. One example of green infrastructure is a green alley.
  - Create a wetland to address Bee Slough CSOs
  - Expand both WWTPs
  - Build a treatment plant to bypass CSOs
  - Separate sewers in some areas, especially those along Diamond Avenue, where INDOT built separated sewer pipes a few years ago during reconstruction.
  - Build three units to provide remote, high-rate treatment. Those would be along Diamond Avenue near Garden Park, at the mouth of Pigeon Creek/Ohio River meeting place, and near the West WWTP.
- West service area findings and proposed solutions
  - Clean out the Pigeon Creek sewer main so Utility can have maximum storage during wet weather. We need to get clean water out of the system.
  - Use green infrastructure when possible. This includes working with other city agencies and finding ways to implement sewer fixes that are green, when available.
  - Separate sewers. The sanitary sewers are 50 to 60 years old and they have roots growing into them. About $16 to 17 million of rehab needs to be done to existing sewers.
  - Improve pumping systems at the WWTPs.
  - Build larger storage facility and units to treat CSOs
  - Reduce the amount of inflow/infiltration entering the separate sanitary sewer.
- East service area findings and proposed solutions
  - Treat Ohio River and Bee Slough CSOs by expanding the wet-weather treatment capacity of the WWTPs, creating a wetland to naturally treat CSOs in Bee Slough, use green infrastructure in downtown.

        - Eliminate the Oak Hill CSO by building additional storage.
        - Reduce the amount of inflow/infiltration entering the separate sanitary sewer.
    - Bee Slough wetland – Eliminate the above-ground concrete cradle and bury the pipe.
        - Uses natural treatment processes. Water will be screened before it enters Bee Slough.
        - Requires no additional energy for treatment. Water can sit for up to 48 hours.
        - Uses no chemicals, produces no residuals.
        - Provides a food source and habitat for animals and vegetation.
        - Provides educational opportunities.
        - Provides a better aesthetic value than large storage facilities.
    - Bee Slough Integrated Pest Management Plan
        - The plan includes larval monitoring; maintaining a habitat for natural predators; treating for bacteria, mosquitoes and black flies.

- Financial capability analysis – Presented by Jim Garrard
    - Rates and existing debt
        - Little to no federal or state grant money available to fund sewer system upgrades; projects must be funded through rate increases.
        - Evansville will pursue whatever grants are available and utilize low-interest state loan program as much as possible.
        - Current average in-city rate based on 3,859 gallons of water usage is $26.30 a month. Out of city rate is $35.50 a month.
        - We need to retire existing debt for recent upgrades.
            - Existing debt is $12 million/year until July 31, 2023.
            - Debt load is then $11 million/year until July 31, 2031.
            - All existing debt will be retired by July 31, 2031.
    - Financial capability and major cost components
        - Regular operating expenses
        - Capital/infrastructure costs outside of IOCP
        - IOCP costs
        - Reasonable assumptions such as interest rates, CPI, MHI growth, etc.
    - Evansville's ability to fund the IOCP
        - CSO Policy of 1994 makes it clear that the financial health of the community is a factor in determining the cost and schedule for sewer upgrades.
        - Nevertheless, EPA has pushed communities to spend to the very limits of affordability, as quickly as possible.
        - This has been an ongoing source of frustration and financial struggle for cities across the U.S.
        - The U.S. Conference of Mayors and communities have been aggressively pursuing change in EPA's approach to CSO program.
    - The plan we anticipate the EPA to want is too costly.
        - EPA will likely want no more than four CSOs a year.
            - Four days of CSO activations would cost up to $815 million.
            - Zero days of CSO activations would cost up to $916 million.
        - Must have a high level of control in the sanitary sewer system.
        - Evansville's system poses unique challenges: There may be a sizable gap between cost and level on control. Evansville cannot afford a plan EPA/DOJ may want over 20 or 25 years.

- Evansville needs more than 20-year IOCP to decrease impacts to rates.

- Proposed IOCP – Is 28 years instead of 25, and $540 million instead of the $606 plan submitted in July 2012. Achieves the same level of control.
  - 28-year program – Agree to steadily increase rates over life of the plan to keep sewer bills at or near the 2% MHI.

CSO Long Term Control Plan*		SSRMP **
West	$259 million	$22 million
East	$235 million	$22 million
TOTAL	$496 million	$44 million

*Total anticipated IOCP cost is $540 million over 28 years.
**SSRMP (Sanitary Sewers Remedial Measures Plan) – capacity projects at two-year storm.

  - Summary of proposed 28-year IOCP
    - Pursue approach that is most affordable over 20 years.
    - Second phase allows reevaluation and refinement – total of 28 years.
    - Allows time:
      - For additional evaluations and relentless pursuit of affordable and cost-effective solutions
      - For additional flow redirection/removal
      - To optimize existing infrastructure
      - To ensure we "right size" CSO storage/treatment facilities based on the best available future information
      - $12 million in debt services retired in 2031 allowing for additional funding capacity for IOCP
  - Summary of IOCP – First 20 years

Control Measure	Cost
19. Bee Slough improvement projects	$150 million
20. West side storage projects	$99 million
21. Sewer separation	$28 million
22. Green infrastructure and system optimization	$21 million
23. SSO abatement projects	$44 million
24. WWTP modification	$31 million
TOTAL	$373 million

Achieves about 70% capture with about 50 activations

  - Summary of IOCP – Years 21 to 28
    Additional eight-year plan to reach *approvable* level of control

Control Measure	Cost
4. 7th Avenue lift station replacement	$109 million
2. Downtown storage	$58 million
TOTAL	$167 million

Achieves about 92% capture with about 12 activations in a typical year

  - Summary of IOCP: Level of control and water quality impacts of IOCP
    - 12 CSO activations in a typical year provides best return on investment in water quality benefit:
      - The Ohio River and Pigeon Creek are adversely affected by pollutants upstream of Evansville CSOs.

        - Water quality sampling and modeling have shown that reducing overflow frequency to less than 12 activations per year has no net benefit to complying with water quality standards.
        - Negligible improvements and no additional days of recreational use.
    - Proposed IOCP: Rate impacts
        - Approximate funding capability if rates increased to and never exceed at 2% MHI
            - 20-year plan
                - $373 million
                - Average residential rate: $85.20/month in city; $115.20/month outside city
            - 28-year plan
                - $540 million
                - Average residential rate: $87.10/month in city; $117.60/month outside city
        - The final plan submitted to EPA will likely result in in-city monthly rate increases of $7.45, $2.65 and $2.85 the first three years to begin funding the IOCP. Subsequent increases through duration of IOCP to reach and maintain 2% MHI threshold.

- Public involvement
    - Website – renewevansville.com
    - Citizens Advisory Committee (CAC)
    - Social media
    - Public information tools (contact cards, fact sheets)
    - Public meetings

- What's next?
    - Share public comments with regulators and incorporate into final plan.
    - Submit final plan to regulators May 31.
    - EPA will respond to final IOCP – accept, reject or seek modification.
    - Plan may be revised based on future discussions with EPA.
    - Potential for dispute resolution and being back in court.
    - Evansville will not agree to a plan that is unfair to rate payers and not reasonable.

3) Questions

Question: Are you going to put the best plants in there to do the job?
Answer: Absolutely. My firm has wetland scientists who have experience treating airport runoff and other types of pollution. We're also suggesting some plant effluent run back to the wetlands periodically to help support the wetlands. Want to make sure we're not overloading the wetland. We get a lot of questions about mosquitos. Wetlands have natural processes. If it were to become an issue, it can be managed. There are some very effective pest and insect management techniques.

Question: Regarding the distance from the treatment pump, they're pumping a lot farther from inside the city than from outside the city/from the county. Yet, it appears the biggest impact will be for people in the city.
Answer: The biggest affect will be for the river itself. All improvements are toward fixing the river and waterways. We are looking at the system and televising the lines. Those operational costs are benefiting everyone in the system.

Comment: 12 days of CSO activations is a lot better than 50, where we are now.
Response: That's right.

Question: Do they blame the contamination that comes into the system on us?
Answer: They understand it, but they want to see the water quality benefit. Any time you can have fewer days of activations, they want you to do it, regardless of water quality. But we have some contribution to water quality.

Question: The rates that you quoted are sewer rates only?
Answer: That's exactly right.

Comment: I'm not against the program. It's just expensive.
Response: Yeah, those rates are high. It's a pretty big jump. Other utilities are doing the same. It doesn't make it any easier here, but it's the reality.

Public Meeting 7 – May 16, 2013

The Utility presented its updated Integrated Overflow Control Plan to the public on May 16, 2013. It was held at 6:30 p.m. at Fairlawn Elementary School. Nineteen residents, seven *Renew Evansville* team members and a member of the news media attended the event.

Meeting minutes

Purpose: To provide a general overview of Evansville's wastewater infrastructure, review the proposed Integrated Overflow Control Plan, and discuss preliminary cost estimates and timing for construction.

Discussion: Jim Garrard led the public meeting and answered questions. Paul Amico contributed to the presentation, giving the presentation on the recommended projects that comprise the plan.

1) **Exhibits and displays were posted around the room.**

2) **Presentation**
   - The formal presentation began at 6:35 p.m.
   - Introductions from Jim Garrard, *Renew Evansville*
   - Regulatory Background
     - Clean Water Act of 1972
     - Overview of Combined Sewer Overflows (CSOs) – When combined sewers were built, up to 50 or 60 years ago, engineers believed "dilution was the solution," meaning that if you add enough storm water to waste, then drain that combined sewer wastewater into a larger body of water, the hazardous material would be so diluted that it wouldn't' adversely impact plant or animal life.
   - Evansville Consent Decree
     - Negotiations with Environmental Protection Agency (EPA), Indiana Department of Environmental Management (IDEM) and U.S Department of Justice (DOJ)
     - Consent decree was approved in federal court in June 2011.
     - Final Consent decree requirements
       - Two years to develop an IOCP – Nov. 2010 to Nov. 30, 2012.
       - Final IOCP due date extended to May 31, 2013.
       - 20 or more years for construction.
       - Supplemental environmental projects to eliminate septic tanks at Cave Ave. and Fickas Road.
       - Fines and penalties for non-compliance.
       - Final consent decree requires Evansville to develop a long-term plan to make significant upgrades to existing infrastructure and new construction, address combined sewer overflow and overflows in parts of the separate sanitary sewer system, provide sustainable and green solutions, and improve the Utility's operations and strengthen maintenance disciplines.
       - This is a national challenge facing many cities across the state and country. It's not just Evansville being picked on. Indianapolis is experiencing a large rate increase currently to address the CSO issue.
       - Originally, the EPA wanted us to develop the plan in 6 months and build it in 10 years. We refused to meet that demand. They sued us. Reached a settlement agreement in November 2010. The original deadline was last November; but

that was pushed to May 31, 2013. That's mainly because the data we were getting from 2011 was over-predicting. What we were fearful of was right. By taking the time, we refined the model. The costs came down; we saved a lot of money. There's now a very cyclical approach to cleaning out the pipes and televising the pipes before they become catastrophic collapses. We've had a few major collapses around here (southeast side). If you can fix those things before the pipe collapses, you're ahead of the game.
    - Supplemental projects include eliminating septic systems – Cave Ave. and Fickas Road. During rain events, those communities couldn't do laundry. Became a health problem that had to be addressed. Those projects were largely completed in December with the exception of some landscaping which will be done this year.
  - Recent program and status
    - Delivered 75 submittals so far
    - Draft IOCP submitted July 31, 2012
    - Processing more wet-weather flow at WWTPs
    - Septic elimination projects brought sewers to two neighborhoods by December 2012

- Evansville's wastewater collection and treatment systems
  - Once the Utility's operations came back in-house in 2010, we worked to push more flow to the plants; to maximize capacity. Those numbers have gone up pretty dramatically since the Utility brought operations back in-house. There's really no cross flow between the east and west systems.
  - Evansville's wastewater collection and treatment systems – Two wastewater treatment plants
    - East WWTP peak wet-weather capacity – 26 mgd
    - West WWTP peak wet-weather capacity – 27 mgd
  - 833 miles of sewers (60% combined, 40% separate), evenly divided between the WWTPs, 90 lift stations. Lift stations – There are terrain issues where there isn't flow, so we have to lift the waste to allow gravity to continue the flow.
  - Evansville's CSOs and receiving streams
    - 22 outfalls
    - 2.0 billion gallons
    - Process 35% of wet-weather flow
    - Ohio River, Pigeon Creek and Bee Slough

- Overflow control and planning challenges
  - CSOs and percent capture
    - CSOs must be addressed because of federal mandates. It's not if, it's when and how.
    - Federal CSO policy requires 75-100% capture, 0-12 days of activation/year
    - We used 2000 as a "typical year" for modeling and planning
    - 100% capture would mean collecting and treating overflows from about 3.5 inches of rain in a 24-hour period.
    - Evansville's plan will not achieve 100% capture
    - Most programs are in the 90-98% range.
  - Challenges unique to controlling Evansville's overflows
    - Large CSO volumes (2 billion gallons a year)

        - Bee Slough's unique characteristics
        - Levee and river level impacts
        - Separate sanitary sewer overflows and capacity issues in four priority areas must be address.
    - Evansville's CSO volume is 2.0 billion gallons (BG) a year.
        - Fort Wayne's is/was 1.1 BG, South Bend's is 0.9 BG, Indianapolis' is 7 BG, Louisville's is 4 BG, Milwaukee's is 9 BG and Omaha's is 3.5 BG
        - Evansville has a big city problem with a small city ratepayer base
    - Bee Slough's unique challenges
        - Three large CSO outfalls
        - Ohio River level and Levee Authority pumping controls flow and water levels in Bee Slough
        - It's an eyesore and a health decree. The decree includes a reference that it must be addressed.
        - City's most upstream discharge to the Ohio River sensitive/recreational area.
        - It contributes about 70% of total CSO volume discharged into the Ohio River.
        - It's an all or nothing solution; those CSOs must be controlled 100%

Comment: It's the stinky ditch, we call it. I didn't realize it has a name.
Response: It holds rain water and sewage. If the levee walls are shut, plant effluent flows into there, too. It's an open sewer. The Utility has recently started doing a great job of cleaning it out. 70% of the CSO volume that hits the Ohio River is from Bee Slough.

    - Unique challenges attributed to river level and levee impacts
        - Most CSO discharges are pumped by the Levee Authority Pump Stations during high Ohio River levels. This demands more up-pipe solutions.
        - Pigeon Creek water level is influenced by Ohio River's level.
        - Periods of high river/creek levels require the Utility to hold water in the system, reducing available storage volume during wet periods.
        - High river/creek levels cause significant infiltration into the system during wet periods due to elevated groundwater levels.
        - Most CSO outfalls pass through the levee.
        - CSO controls may require deep excavations adjacent to the levee in sand/gravel soils.

- Integrated overflow control planning
    - IOCP
        - Two capital plans – Addressing both plans at once allows Evansville to get the best return for its investment.
            - CSO long-term control plan
            - Sanitary sewer remedial measures plan
        - Looking for best benefit for City's investment
    - Specific IOCP planning goals
        - Address Bee Slough!
        - Maximize underutilized existing infrastructure.
        - Incorporate green infrastructure where possible.
        - Optimize Pigeon Creek sewer main. There are about 12 inches of sediment in the bottom of the Pigeon Creek sewer. Cleaning it out is about $3 million, but that's a good investment for the returned, increased capacity.

- Provide necessary redundancy and backup power at 7th Avenue lift station.
- Provide for better control of West WWTP influent.
- Reduce rainwater that enters the separate sewer system.
- Right size CSO controls to increase capture and treatment of CSOs system-wide.

- Summary of anticipated IOCP - Presented by Paul Amico, CH2M Hill
  - About 20 to 25 engineers worked on the plan. As it was developed, the team considered seven different alternatives to get to the target range of 0 to 12 CSO activations a year.
- Summary of anticipated IOCP – CSO technical approach
  - Increase amount of storage
  - Use green infrastructure when practical. One example of green infrastructure is a green alley.
  - Create a wetland to address Bee Slough CSOs
  - Expand both WWTPs
  - Build a treatment plant to bypass CSOs
  - Separate sewers in some areas, especially those along Diamond Avenue, where INDOT built separated sewer pipes a few years ago during reconstruction. Those new, separated pipes haven't been linked to existing sewers yet.
  - Build three units to provide remote, high-rate treatment. Those would be along Diamond Avenue near Garden Park, at the mouth of Pigeon Creek/Ohio River meeting place, and near the West WWTP.
- West service area findings and proposed solutions
  - Clean out the Pigeon Creek sewer main so Utility can have maximum storage during wet weather. We need to get clean water out of the system.
  - Use green infrastructure when possible. This includes working with other city agencies and finding ways to implement sewer fixes that are green, when available.
  - Separate sewers. The sanitary sewers are 50 to 60 years old and they have roots growing into them. About $16 to 17 million of rehab needs to be done to existing sewers.
  - Improve pumping systems at the WWTPs.
  - Build larger storage facility and units to treat CSOs
  - Reduce the amount of inflow/infiltration entering the separate sanitary sewer.
  - We're providing 14-15 million gallons of storage across the west system.
- East service area findings and proposed solutions
  - Treat Ohio River and Bee Slough CSOs by expanding the wet-weather treatment capacity of the WWTPs, creating a wetland to naturally treat CSOs in Bee Slough, use green infrastructure in downtown.
  - Eliminate the Oak Hill CSO by building additional storage.
  - Reduce the amount of inflow/infiltration entering the separate sanitary sewer.
- Bee Slough wetland – Eliminate the above-ground concrete cradle and bury the pipe.
  - Uses natural treatment processes. Water will be screened before it enters Bee Slough.
  - Requires no additional energy for treatment. Water can sit for up to 48 hours.
  - Uses no chemicals, produces no residuals.
  - Provides a food source and habitat for animals and vegetation.

        - A wetland requires a lot of space. We've proposed a wetland natural treatment system. There are no additional energy requirements like you'd have a traditional wastewater treatment system. Upstream of that, the wastewater will be screened and dilute before it gets to the wetland. Hold water for two days for the system's natural processes to work.
        - A new pumping facility will be constructed so the Utility can control the flow, not the Levee Authority. The ditch will be placed underground. We'll seek community input for how the wetlands will look.
        - Provides educational opportunities.
        - Provides a better aesthetic value than large storage facilities.
    - Bee Slough Integrated Pest Management Plan
        - The plan includes larval monitoring; maintaining a habitat for natural predators; treating for bacteria, mosquitoes and black flies.
        - Insert wetland configuration map
        - Insert before and after photos

- Financial capability analysis – Presented by Jim Garrard
    - Rates and existing debt
        - Little to no federal or state grant money available to fund sewer system upgrades; projects must be funded through rate increases. There are some low-interest loans through the state. They're fairly competitive. It's a limited pool and other cities compete for that money. The city has a pretty high bond rate. This comes down to being rate funded.
        - Evansville will pursue whatever grants are available and utilize low-interest state loan program as much as possible.
        - Current average in-city rate based on 3,859 gallons of water usage is $26.30 a month. Out of city rate is $35.50 a month.
        - We need to retire existing debt for recent upgrades.
            - Existing debt is $12 million/year until July 31, 2023.
            - Debt load is then $11 million/year until July 31, 2031.
            - All existing debt will be retired by July 31, 2031.
    - Financial capability and major cost components
        - Regular operating expenses
        - Capital/infrastructure costs outside of IOCP
        - IOCP costs
        - Reasonable assumptions such as interest rates, CPI, MHI growth, etc.
    - Evansville's ability to fund the IOCP
        - CSO Policy of 1994 makes it clear that the financial health of the community is a factor in determining the cost and schedule for sewer upgrades.
        - Nevertheless, EPA has pushed communities to spend to the very limits of affordability, as quickly as possible.
        - This has been an ongoing source of frustration and financial struggle for cities across the U.S.
        - The U.S. Conference of Mayors and communities have been aggressively pursuing change in EPA's approach to CSO program.
    - The plan we anticipate the EPA to want is too costly.
        - EPA will likely want no more than four CSOs a year.
            - Four days of CSO activations would cost up to $815 million.
            - Zero days of CSO activations would cost up to $916 million.

        - Indy's plan is to control between 2-4 CSO activations per year; Louisville is 8-12 CSO activations.
    - Must have a high level of control in the sanitary sewer system.
    - Evansville's system poses unique challenges: There may be a sizable gap between cost and level on control. Evansville cannot afford a plan EPA/DOJ may want over 20 or 25 years.
    - Evansville needs more than 20-year IOCP to decrease impacts to rates.

- Proposed IOCP – Is 28 years instead of 25, and $540 million instead of the $606 plan submitted in July 2012. Achieves the same level of control.
    - 28-year program – Agree to steadily increase rates over life of the plan to keep sewer bills at or near the 2% MHI.

CSO Long Term Control Plan*		SSRMP **
West	$259 million	$22 million
East	$235 million	$22 million
TOTAL	$496 million	$44 million

*Total anticipated IOCP cost is $540 million over 28 years.
**SSRMP (Sanitary Sewers Remedial Measures Plan) – capacity projects at two-year storm.

- Summary of proposed 28-year IOCP
    - Pursue approach that is most affordable over 20 years.
    - Second phase allows reevaluation and refinement – total of 28 years.
    - Allows time:
        - For additional evaluations and relentless pursuit of affordable and cost-effective solutions
        - For additional flow redirection/removal
        - To optimize existing infrastructure
        - To ensure we "right size" CSO storage/treatment facilities based on the best available future information
        - $12 million in debt services retired in 2031 allowing for additional funding capacity for IOCP

- Summary of IOCP – First 20 years

Control Measure	Cost
25. Bee Slough improvement projects	$150 million
26. West side storage projects	$99 million
27. Sewer separation	$28 million
28. Green infrastructure and system optimization	$21 million
29. SSO abatement projects	$44 million
30. WWTP modification	$31 million
TOTAL	$373 million

Achieves about 70% capture with about 50 activations

- Summary of IOCP – Years 21 to 28
  Additional eight-year plan to reach *approvable* level of control

Control Measure	Cost
5. 7th Avenue lift station replacement	$109 million
2. Downtown storage	$58 million
TOTAL	$167 million

Achieves about 92% capture with about 12 activations in a typical year

- Summary of IOCP: Level of control and water quality impacts of IOCP
  - 12 CSO activations in a typical year provides best return on investment in water quality benefit:
    - The Ohio River and Pigeon Creek are adversely affected by pollutants upstream of Evansville CSOs.
    - Water quality sampling and modeling have shown that reducing overflow frequency to less than 12 activations per year has no net benefit to complying with water quality standards.
    - Negligible improvements and no additional days of recreational use. There are 180 days of recreation days. Only 112 of those days is Pigeon Creek compliant with water quality standards. Going to zero CSO activations provides zero improvement with days of compliance. That tells us the water is polluted when it gets to us.
- Proposed IOCP: Rate impacts
  - Approximate funding capability if rates increased to and never exceed at 2% MHI
    - 20-year plan
      - $373 million
      - Average residential rate: $85.20/month in city; $115.20/month outside city
    - 28-year plan
      - $540 million
      - Average residential rate: $87.10/month in city; $117.60/month outside city
  - The final plan submitted to EPA will likely result in in-city monthly rate increases of $7.45, $2.65 and $2.85 the first three years to begin funding the IOCP. Subsequent increases through duration of IOCP to reach and maintain 2% MHI threshold.

- Public involvement
  - Website – renewevansville.com
  - Citizens Advisory Committee (CAC)
  - Social media
  - Public information tools (contact cards, fact sheets)
  - Public meetings

- What's next?
  - Share public comments with regulators and incorporate into final plan.
  - Submit final plan to regulators May 31.
  - EPA will respond to final IOCP – accept, reject or seek modification.
  - Plan may be revised based on future discussions with EPA.
  - Potential for dispute resolution and being back in court.
  - Evansville will not agree to a plan that is unfair to rate payers and not reasonable.

3) Questions

Question: Will there be a water rate increase with this?

Answer: We haven't calculated that yet. But, is it likely water rates will go up? Yes, it is. This rate only includes sewer, not water or trash.

Question: Is all of the manufacturing we have around here part of the problem? Do they contribute to all of the excess pollution in the water? We've heard someone has been warned.
Answer: What happens in those cases is not about wastewater coming in. Those who could put contaminants in the water are prohibited from sending batches of flow into the system. Some companies have been fined in the past because the strength of the waste load wasn't complying with their permit.

Question: Will manufacturing be sharing with the rate increases?
Answer: Yes

Question: Will properties be torn up?
Answer: Yes, potentially in some areas. Once we get down to fine details of engineering, we'll have a lay of the land. There will certainly be easement issues. We've factored in some of that cost into the program. The Utility tries not to do that because it costs money. Some of that property acquisition has started.

Comment: Are there websites that show other cities that have comparison programs? I'm a lifetime resident but my taxes have gone up and with these increases, I'm about to look elsewhere. I'm not staying in Indiana.
Response: A lot of that information is online but not in one place. You'd need to know where to look. Other cities are facing this same issue.

Question: Is this going to happen or are we going to vote on this?
Answer: The federal government is here. There is no choice. We can pay fines through the EPA. Then they'll mandate it through the federal government and we'll need to do it anyway. And, potentially the government can come in and run your system for you. And, you don't want that. They're not picking on Evansville.

Question: Have Indianapolis and Louisville already done these plans?
Answer: Yes, Indy and Louisville have already started. South Bend's program is $500 million.

Comment: Comment about slow efforts with construction.
Answer: There will be an engineering firm helping the Utility ensure the programs are on time and on budget. It won't be the same engineering firm that's putting together the plan. There will be processes in place to ensure that's done. Once there's an approved program, there will be a listed schedule, and you either hit those construction deadlines or you pay a fine/penalty.

Question: The water problem in Evansville has been going on for a number of years. Why is it now it's an issue because the EPA is involved? Why wasn't this addressed years ago? Flooding issues. I lived in an area where there were sewer backups. Why all of a sudden do we have to do something now and hit people with a fixed income or who are low income? It makes me angry that it wasn't slowly addressed sooner. This has been going on for more than 20 years.
Answer: Regarding flooding on the southeast side, there have been major improvements.

Comment: I wouldn't mind a few dollars increase every year. But, when we're talking about this it is just sewer. Then, we have water and sewer on top of it. My bill will be close to $117/month.
Response: That's right, over 20 years, the rates will go up.

Question: Why now?
Answer: The Utility spent $120 million over the past few years, so it hasn't been completely ignored. It's just the reality of how it works in most cities. It's expensive just to run the utility and keep the lights on. Cities put it off because it's expensive.

Comment: It looks like tax payers are bailing out the City for mistakes that have been made.
Response: For elected officials it's not attractive to raise rates. These are buried assets. You don't notice them until they break. Bringing the utility management back in house in 2010 helped. Things are being run much more aggressively now than in years past.

Question: Where it says the 20-year plan, does that mean the rate won't hit us until 20 years from now?
Answer: That's right, although rate increases could begin as early as this year.

Question: I appreciate the way this presentation has been informative. Very professional. Very well done. Will the presentation be on the website?
Answer: Yes. www.RenewEvansville.com

Question: What is the status of the Cass Avenue project?
Answer: To date, there are five phases of the Cass Ave. project. The last two phases are in this sewer rate increase to fix what runs east and west off Boeke Road.

Question: Will they be worked on this year or next year?
Answer: The earliest it will start is this winter. More than likely next spring.

Question: Wasn't there a recent rate increase?
Answer: There was a water rate increase that went into effect on the water side in March 2013. There's a scheduled increase in 2014 and 2015, approved by the Indiana Utility Regulatory Commission. Based on the age of the infrastructure, there will likely be increases. Now, you're talking about a system that's 80-plus years old. It will take about 30 years to rebuild this. We want to be very transparent about what the rate increases will be. We've argued around affordability. We feel this is an affordable plan and accomplishes what is necessary. EPA has not granted a 28-year plan, but we'll fight for that. We've hired appropriate counsel, specialists in D.C. and here, to help us fight that battle.

Question: Describe the rate increase each year.
Answer: We've put together a schedule based on when we see things hitting. The first years are prep work and engineering work. Years 4-8 or 9 are heavy construction periods, particularly around the wetlands. You'll see a rate increase around then and then it drops off.

Question: The problem I see is that the baby boomer generation will be in their 70s and 80s. Many people in Evansville will be on fixed incomes at that point.
Answer: The people who are putting in the formulas are considering affordability models. We put in all the data we can find that shows the median household income. It won't go up at a

rapid pace. We're using that information to supplement arguments with the EPA. They've been turning a deaf ear. We'll keep at it.

Comment: It's going to be a tax on the poor. Anybody who rents a house or apartment is hanging on by the skin of their teeth.

Comment: I have voiced that at City Council meetings. We are hurting in this area. Even though it's 20 years down the road, they won't be able to afford it.
Response: Something will need to happen at a national basis or statewide basis to reassess how rates are applied. That framework doesn't exist today. We're talking about billions of dollars in Indiana alone. Anything you can do to talk with your state legislators. Put pressure on IDEM, where they can put pressure on for us. We'll be talking with our senators in D.C. When we file this plan, our plan is to go talk to them and argue for our community here.

Comment: I just want to thank your team. What they're fighting for will lessen the burden some. I appreciate all you've done. Jim Garrard and Allen Mounts have been helpful with the sewer projects here in the second ward.

Question: Will this be phased in?
Answer: It will be done in phases over time over the 28-year program.

-End-

APPENDIX C

2013 Accounting Report

Accounting Report
On May 31, 2013
Integrated Overflow
Control Plan

Evansville, Indiana
Municipal Sewage Works

May 31, 2013

Umbaugh
Certified Public Accountants
Indianapolis, Indiana

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It's all about experience.

ACCOUNTANTS' PROJECTION AND COMPILATION REPORT

May 31, 2013

Board of Directors
Evansville Municipal Sewage Works
One N.W. Martin Luther King Jr. #104
Evansville, IN 47740-0001

We have compiled the accompanying projections of annual revenues, revenue requirements and impact on households resulting from the projects identified in the May 31, 2013 Integrated Overflow Control Plan ("IOCP) and related schedules for the calendar years ending December 31, 2013 through 2040 in accordance with attestation standards established by the American Institute of Certified Public Accountants.

The accompanying projection presents for the projection period to the best of management's knowledge and belief, the Evansville Municipal Sewage Works (the "Sewage Works") projected revenues, revenue requirements, and debt service as a percentage of median household income and monthly sewer bill that would result from the construction and financing of the IOCP projects described in this report. The accompanying projection and this report were prepared for presentation to the U.S. Environmental Protection Agency and should not be used for any other purpose. A projection report is neither intended for, nor is it appropriate for general use.

A compilation is limited to presenting projected financial information that is the representation of management and does not include evaluation of the support for the assumptions underlying such information. We have not examined the projection, and, accordingly, do not express an opinion or any other form of assurance on the accompanying projection or assumptions. Furthermore, even if the Sewage Works finances and constructs the improvement projects, there will usually be differences between projected and actual results because events and circumstances frequently do not occur as expected, and those differences may be material. We have no responsibility to update our report for events and circumstances occurring after the date of this report.

Umbaugh

PROJECTION REPORT OF IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

PROJECTION REPORT -IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

(Amounts rounded to nearest $100)

	Projected Calendar Years Ending			
	2013	*2014*	*2015*	*2016*
Projected Annual Revenues				
Metered revenues	$32,218,800	$40,515,100	$43,406,300	$46,965,600
Plus additional revenues from rate increases	8,054,700	2,770,800	3,451,800	8,403,400
Assumed impact of rate increase effective date of 10/1/13	(5,638,300)			
Less assumed rate fatigue (5% of increase)		(138,500)	(172,600)	(420,200)
Total Projected Available Revenues	$34,635,200	$43,147,400	$46,685,500	$54,948,800
Projected Revenue Requirements:				
Operation and maintenance	$18,989,200	$19,900,700	$20,855,900	$21,343,900
Projected operating expenses resulting from CSO projects				434,300
Projected CMOM	3,414,100	3,575,700	3,659,400	3,745,100
Payments in lieu of property taxes	2,003,200	2,428,000	3,966,100	4,179,300
Annual debt service (principal and interest):				
Outstanding bonds & 2013 SRF Bonds	11,539,800	11,900,500	11,890,200	11,875,200
Proposed Non-IOCP Bonds - Phase 2013 - Bond Funded			2,120,000	2,120,000
Proposed IOCP Bonds - Phase 2014 - Bond Funded				2,345,400
Proposed IOCP and Non-IOCP Bonds - Phase 2016				2,960,800
Proposed IOCP Bonds - Phase 2018				
Proposed IOCP Bonds - Phase 2020				
Proposed IOCP Bonds - Phase 2022				
Proposed IOCP Bonds - Phase 2024				
Proposed IOCP Bonds - Phase 2028				
Proposed IOCP Bonds - Phase 2031				
Proposed IOCP Bonds - Phase 2032				
Proposed IOCP Bonds - Phase 2036				
Debt service reserve:				
Outstanding Bonds and Proposed 2013 SRF Bonds	492,800	492,800	492,800	492,800
Proposed Non-IOCP Bonds - Phase 2013 - Bond Funded				
Proposed IOCP Bonds - Phase 2016 -Bond Funded				
Proposed IOCP Bonds - Phase 2018				
Proposed IOCP Bonds - Phase 2020				
Proposed IOCP Bonds - Phase 2022				
Proposed IOCP Bonds - Phase 2024				
Proposed IOCP Bonds - Phase 2028				
Proposed IOCP Bonds - Phase 2031				
Proposed IOCP Bonds - Phase 2032				
Proposed IOCP Bonds - Phase 2036				
Non-IOCP Capital Plan	0	9,596,100	18,740,300	20,343,800
Non-IOCP Bond Funded		(9,400,000)	(16,600,000)	(20,300,000)
Renewals and Replacements				
Coverage Applied to Pay for IOCP Projects	0	6,000,000	2,950,000	6,550,000
Total Revenue Requirements	36,439,100	44,493,800	48,074,700	56,090,600
Other Sources:				
Less interest, pretreatment, industrial surcharges and other income	(795,900)	(834,100)	(874,100)	(894,600)
Less Build America Bond subsidy payments	(528,100)	(528,100)	(518,700)	(507,800)
Total Net Revenue Requirements	$35,115,100	$43,131,600	$46,681,900	$54,688,200
Net Cash Remaining	($479,900)	$15,800	$3,600	$260,600
Debt Service Coverage	100%	156%	140%	138%

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

PROJECTION REPORT -IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

(Amounts rounded to nearest $100)

	Projected Calendar Years Ending			
	2013	*2014*	*2015*	*2016*
Impact on Households:				
Suggested Approximate Across-The-Board Increase	25%	8%	8%	18%
District:				
Resulting Approximate Avg. District Rate	$35.95	$38.85	$41.95	$49.55
District MHI	$40,800	$42,024	$43,705	$44,404
Residential Indicator	1.06%	1.11%	1.15%	1.34%
Inside City:				
Incremental Increase in Average Household Bill	$7.45	$2.65	$2.85	$6.95
Resulting Monthly Cost Based on 3,859 Gallons per Month	$32.90	$35.55	$38.40	$45.35
Inside of City MHI	$35,939	$37,017	$38,498	$39,114
Residential Indicator	1.10%	1.15%	1.20%	1.39%
Outside City:				
Incremental Increase in Average Household Bill	$10.06	$3.58	$3.85	$9.38
Resulting Monthly Cost Based on 3,859 Gallons per Month	$44.40	$48.00	$51.80	$61.20
Outside of City MHI	$60,470	$62,284	$64,775	$65,811
Residential Indicator	0.88%	0.92%	0.96%	1.12%
Summary of IOCP Sources and Uses:				
Commencement of IOCP Projects - Bond Funded	$200,000	$26,200,000	$ -	$25,000,000
IOCP Projects - Cash Funded (see above)	-	6,000,000	2,950,000	6,550,000
Total IOCP Project Funding	$200,000	$32,200,000	$2,950,000	$31,550,000
Inflated IOCP Cash Construction Requirements	(200,000)	(31,641,000)	(3,302,000)	(31,615,000)
Remaining Funds Available for Construction	$ -	$559,000	$207,000	$142,000
IOCP Funding Requirements in 2013 Dollars	($200,000)	($30,719,540)	($3,112,534)	($28,931,785)

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

PROJECTION REPORT -IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

(Amounts rounded to nearest $100)

	Projected Calendar Years Ending			
	2017	*2018*	*2019*	*2020*
Projected Annual Revenues				
Metered revenues	$55,278,500	$63,487,400	$72,915,300	$83,743,300
Plus additional revenues from rate increases	8,242,300	9,466,300	10,872,100	832,400
Assumed impact of rate increase effective date of 10/1/13				
Less assumed rate fatigue (5% of increase)	(412,100)	(473,300)	(543,600)	(41,600)
Total Projected Available Revenues	$63,108,700	$72,480,400	$83,243,800	$84,534,100
Projected Revenue Requirements:				
Operation and maintenance	$21,843,300	$22,354,400	$22,877,500	$23,412,800
Projected operating expenses resulting from CSO projects	568,500	698,200	833,600	975,000
Projected CMOM	3,846,400	3,491,300	3,587,900	3,687,500
Payments in lieu of property taxes	4,441,200	4,740,100	5,836,500	6,034,500
Annual debt service (principal and interest):				
Outstanding bonds & 2013 SRF Bonds	11,861,800	11,853,100	11,836,000	11,821,500
Proposed Non-IOCP Bonds - Phase 2013 - Bond Funded	2,120,000	2,120,000	2,120,000	2,120,000
Proposed IOCP Bonds - Phase 2014 - Bond Funded	2,345,400	2,345,400	2,345,400	2,345,400
Proposed IOCP and Non-IOCP Bonds - Phase 2016	5,446,500	5,446,500	5,446,500	5,446,500
Proposed IOCP Bonds - Phase 2018		4,491,000	7,672,200	7,672,200
Proposed IOCP Bonds - Phase 2020				3,135,300
Proposed IOCP Bonds - Phase 2022				
Proposed IOCP Bonds - Phase 2024				
Proposed IOCP Bonds - Phase 2028				
Proposed IOCP Bonds - Phase 2031				
Proposed IOCP Bonds - Phase 2032				
Proposed IOCP Bonds - Phase 2036				
Debt service reserve:				
Outstanding Bonds and Proposed 2013 SRF Bonds				
Proposed Non-IOCP Bonds - Phase 2013 - Bond Funded				
Proposed IOCP Bonds - Phase 2016 -Bond Funded				
Proposed IOCP Bonds - Phase 2018		1,534,400	1,534,400	1,534,400
Proposed IOCP Bonds - Phase 2020				627,100
Proposed IOCP Bonds - Phase 2022				
Proposed IOCP Bonds - Phase 2024				
Proposed IOCP Bonds - Phase 2028				
Proposed IOCP Bonds - Phase 2031				
Proposed IOCP Bonds - Phase 2032				
Proposed IOCP Bonds - Phase 2036				
Non-IOCP Capital Plan	18,937,200	23,302,600	2,633,700	2,346,400
Non-IOCP Bond Funded	(18,900,000)	(23,000,000)		
Renewals and Replacements			3,245,100	3,670,000
Coverage Applied to Pay for IOCP Projects	11,750,000	14,275,000	14,450,000	10,800,000
Total Revenue Requirements	64,260,300	73,652,000	84,418,800	85,628,600
Other Sources:				
Less interest, pretreatment, industrial surcharges and other income	(915,500)	(936,900)	(958,800)	(981,200)
Less Build America Bond subsidy payments	(496,300)	(483,700)	(469,000)	(453,800)
Total Net Revenue Requirements	$62,848,500	$72,231,400	$82,991,000	$84,193,600
Net Cash Remaining	$260,200	$249,000	$252,800	$340,500
Debt Service Coverage	155%	162%	175%	159%

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

PROJECTION REPORT -IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

(Amounts rounded to nearest $100)

	Projected Calendar Years Ending			
	2017	*2018*	*2019*	*2020*
Impact on Households:				
Suggested Approximate Across-The-Board Increase	15%	15%	15%	1%
District:				
Resulting Approximate Avg. District Rate	$57.05	$65.63	$75.51	$76.27
District MHI	$45,114	$45,836	$46,569	$47,314
Residential Indicator	1.52%	1.72%	1.95%	1.93%
Inside City:				
Incremental Increase in Average Household Bill	$6.85	$7.85	$9.05	$0.70
Resulting Monthly Cost Based on 3,859 Gallons per Month	$52.20	$60.05	$69.10	$69.80
Inside of City MHI	$39,740	$40,376	$41,022	$41,678
Residential Indicator	1.58%	1.78%	2.02%	2.01%
Outside City:				
Incremental Increase in Average Household Bill	$9.25	$10.60	$12.22	$0.94
Resulting Monthly Cost Based on 3,859 Gallons per Month	$70.50	$81.10	$93.30	$94.20
Outside of City MHI	$66,864	$67,934	$69,021	$70,125
Residential Indicator	1.27%	1.43%	1.62%	1.61%
Summary of IOCP Sources and Uses:				
Commencement of IOCP Projects - Bond Funded	$ -	$75,000,000	$ -	$50,000,000
IOCP Projects - Cash Funded (see above)	11,750,000	14,275,000	14,450,000	10,800,000
Total IOCP Project Funding	$11,750,000	$89,275,000	$14,450,000	$60,800,000
Inflated IOCP Cash Construction Requirements	(9,788,000)	(89,861,000)	(11,761,000)	(59,185,000)
Remaining Funds Available for Construction	$2,104,000	$1,518,000	$4,207,000	$5,822,000
IOCP Funding Requirements in 2013 Dollars	($8,696,760)	($77,514,864)	($9,849,337)	($48,122,722)

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

PROJECTION REPORT -IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

(Amounts rounded to nearest $100)

	Projected Calendar Years Ending			
	2021	*2022*	*2023*	*2024*
Projected Annual Revenues				
Metered revenues	$85,041,300	$86,359,400	$88,518,400	$89,890,400
Plus additional revenues from rate increases	845,300	1,716,900	879,900	2,680,600
Assumed impact of rate increase effective date of 10/1/13				
Less assumed rate fatigue (5% of increase)	(42,300)	(85,800)	(44,000)	(134,000)
Total Projected Available Revenues	$85,844,300	$87,990,500	$89,354,300	$92,437,000
Projected Revenue Requirements:				
Operation and maintenance	$23,960,700	$24,521,400	$25,095,200	$25,682,400
Projected operating expenses resulting from CSO projects	1,122,500	1,276,500	1,437,000	1,604,300
Projected CMOM	3,790,300	3,896,000	4,004,600	4,117,500
Payments in lieu of property taxes	6,649,500	6,776,100	7,639,100	7,724,900
Annual debt service (principal and interest):				
Outstanding bonds & 2013 SRF Bonds	11,805,500	11,786,300	12,267,600	12,248,800
Proposed Non-IOCP Bonds - Phase 2013 - Bond Funded	2,120,000	2,120,000	2,120,000	2,120,000
Proposed IOCP Bonds - Phase 2014 - Bond Funded	2,345,400	2,345,400	2,345,400	2,345,400
Proposed IOCP and Non-IOCP Bonds - Phase 2016	5,446,500	5,446,500	5,446,500	5,446,500
Proposed IOCP Bonds - Phase 2018	7,672,200	7,672,200	7,672,200	7,672,200
Proposed IOCP Bonds - Phase 2020	3,135,300	3,135,300	3,135,300	3,135,300
Proposed IOCP Bonds - Phase 2022		5,171,300	5,171,300	5,171,300
Proposed IOCP Bonds - Phase 2024				2,001,300
Proposed IOCP Bonds - Phase 2028				
Proposed IOCP Bonds - Phase 2031				
Proposed IOCP Bonds - Phase 2032				
Proposed IOCP Bonds - Phase 2036				
Debt service reserve:				
Outstanding Bonds and Proposed 2013 SRF Bonds				
Proposed Non-IOCP Bonds - Phase 2013 - Bond Funded				
Proposed IOCP Bonds - Phase 2016 -Bond Funded				
Proposed IOCP Bonds - Phase 2018	1,534,400	1,534,400		
Proposed IOCP Bonds - Phase 2020	627,100	627,100	627,100	627,100
Proposed IOCP Bonds - Phase 2022		1,034,300	1,034,300	1,034,300
Proposed IOCP Bonds - Phase 2024				400,300
Proposed IOCP Bonds - Phase 2028				
Proposed IOCP Bonds - Phase 2031				
Proposed IOCP Bonds - Phase 2032				
Proposed IOCP Bonds - Phase 2036				
Non-IOCP Capital Plan	2,401,300	2,457,500	2,709,700	8,525,300
Non-IOCP Bond Funded				
Renewals and Replacements	3,755,900	3,843,700	3,738,900	(1,925,800)
Coverage Applied to Pay for IOCP Projects	10,600,000	5,500,000	6,100,000	5,725,000
Total Revenue Requirements	86,966,600	89,144,000	90,544,200	93,656,100
Other Sources:				
Less interest, pretreatment, industrial surcharges and other income	(1,004,200)	(1,027,700)	(1,051,700)	(1,076,300)
Less Build America Bond subsidy payments	(437,600)	(419,400)	(400,700)	(381,400)
Total Net Revenue Requirements	$85,524,800	$87,696,900	$89,091,800	$92,198,400
Net Cash Remaining	$319,500	$293,600	$262,500	$238,600
Debt Service Coverage	159%	141%	138%	136%

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

PROJECTION REPORT -IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

(Amounts rounded to nearest $100)

	Projected Calendar Years Ending			
	2021	*2022*	*2023*	*2024*
Impact on Households:				
Suggested Approximate Across-The-Board Increase	1%	2%	1%	3%
District:				
Resulting Approximate Avg. District Rate	$77.05	$78.61	$79.43	$81.84
District MHI	$48,071	$48,840	$49,621	$50,415
Residential Indicator	1.92%	1.93%	1.92%	1.95%
Inside City:				
Incremental Increase in Average Household Bill	$0.70	$1.45	$0.75	$2.20
Resulting Monthly Cost Based on 3,859 Gallons per Month	$70.50	$71.95	$72.70	$74.90
Inside of City MHI	$42,345	$43,023	$43,711	$44,410
Residential Indicator	2.00%	2.01%	2.00%	2.02%
Outside City:				
Incremental Increase in Average Household Bill	$0.95	$1.96	$1.01	$2.97
Resulting Monthly Cost Based on 3,859 Gallons per Month	$95.20	$97.10	$98.10	$101.10
Outside of City MHI	$71,247	$72,387	$73,545	$74,722
Residential Indicator	1.60%	1.61%	1.60%	1.62%
Summary of IOCP Sources and Uses:				
Commencement of IOCP Projects - Bond Funded	$ -	$78,000,000	$ -	$30,000,000
IOCP Projects - Cash Funded (see above)	10,600,000	5,500,000	6,100,000	5,725,000
Total IOCP Project Funding	$10,600,000	$83,500,000	$6,100,000	$35,725,000
Inflated IOCP Cash Construction Requirements	(13,422,000)	(58,572,000)	(16,513,000)	(41,557,000)
Remaining Funds Available for Construction	$3,000,000	$27,928,000	$17,515,000	$11,683,000
IOCP Funding Requirements in 2013 Dollars	($10,595,624)	($44,890,523)	($12,287,051)	($30,021,972)

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

PROJECTION REPORT -IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

(Amounts rounded to nearest $100)

	Projected Calendar Years Ending			
	2025	*2026*	*2027*	*2028*
Projected Annual Revenues				
Metered revenues	$92,991,600	$94,433,000	$95,896,700	$98,294,100
Plus additional revenues from rate increases	924,400	938,700	1,906,500	1,954,200
Assumed impact of rate increase effective date of 10/1/13				
Less assumed rate fatigue (5% of increase)	(46,200)	(46,900)	(95,300)	(97,700)
Total Projected Available Revenues	$93,869,800	$95,324,800	$97,707,900	$100,150,600
Projected Revenue Requirements:				
Operation and maintenance	$26,283,400	$26,898,400	$27,527,800	$28,172,000
Projected operating expenses resulting from CSO projects	1,778,600	1,960,300	2,149,400	2,346,400
Projected CMOM	4,233,400	4,352,500	4,475,600	4,602,300
Payments in lieu of property taxes	7,863,700	7,952,700	8,338,000	8,451,900
Annual debt service (principal and interest):				
Outstanding bonds & 2013 SRF Bonds	12,213,200	12,175,200	12,132,800	12,085,000
Proposed Non-IOCP Bonds - Phase 2013 - Bond Funded	2,120,000	2,120,000	2,120,000	2,120,000
Proposed IOCP Bonds - Phase 2014 - Bond Funded	2,345,400	2,345,400	2,345,400	2,345,400
Proposed IOCP and Non-IOCP Bonds - Phase 2016	5,446,500	5,446,500	5,446,500	5,446,500
Proposed IOCP Bonds - Phase 2018	7,672,200	7,672,200	7,672,200	7,672,200
Proposed IOCP Bonds - Phase 2020	3,135,300	3,135,300	3,135,300	3,135,300
Proposed IOCP Bonds - Phase 2022	5,171,300	5,171,300	5,171,300	5,171,300
Proposed IOCP Bonds - Phase 2024	2,001,300	2,001,300	2,001,300	2,001,300
Proposed IOCP Bonds - Phase 2028				3,090,900
Proposed IOCP Bonds - Phase 2031				
Proposed IOCP Bonds - Phase 2032				
Proposed IOCP Bonds - Phase 2036				
Debt service reserve:				
Outstanding Bonds and Proposed 2013 SRF Bonds				
Proposed Non-IOCP Bonds - Phase 2013 - Bond Funded				
Proposed IOCP Bonds - Phase 2016 -Bond Funded				
Proposed IOCP Bonds - Phase 2018				
Proposed IOCP Bonds - Phase 2020				
Proposed IOCP Bonds - Phase 2022	1,034,300	1,034,300		
Proposed IOCP Bonds - Phase 2024	400,300	400,300	400,300	400,300
Proposed IOCP Bonds - Phase 2028				618,200
Proposed IOCP Bonds - Phase 2031				
Proposed IOCP Bonds - Phase 2032				
Proposed IOCP Bonds - Phase 2036				
Non-IOCP Capital Plan	2,634,100	2,758,800	2,845,800	2,823,300
Non-IOCP Bond Funded				
Renewals and Replacements	4,119,900	4,216,300	4,228,000	4,416,000
Coverage Applied to Pay for IOCP Projects	6,500,000	6,800,000	8,850,000	6,400,000
Total Revenue Requirements	94,952,900	96,440,800	98,839,700	101,298,300
Other Sources:				
Less interest, pretreatment, industrial surcharges and other income	(1,101,500)	(1,127,300)	(1,153,700)	(1,180,700)
Less Build America Bond subsidy payments	(345,400)	(308,000)	(265,000)	(217,400)
Total Net Revenue Requirements	$93,506,000	$95,005,500	$97,421,000	$99,900,200
Net Cash Remaining	$363,800	$319,300	$286,900	$250,400
Debt Service Coverage	138%	139%	142%	135%

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

PROJECTION REPORT -IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

(Amounts rounded to nearest $100)

	Projected Calendar Years Ending			
	2025	*2026*	*2027*	*2028*
Impact on Households:				
Suggested Approximate Across-The-Board Increase	1%	1%	2%	2%
District:				
Resulting Approximate Avg. District Rate	$82.66	$83.54	$85.23	$86.99
District MHI	$51,222	$52,042	$52,875	$53,721
Residential Indicator	1.94%	1.93%	1.93%	1.94%
Inside City:				
Incremental Increase in Average Household Bill	$0.75	$0.80	$1.55	$1.60
Resulting Monthly Cost Based on 3,859 Gallons per Month	$75.65	$76.45	$78.00	$79.60
Inside of City MHI	$45,121	$45,843	$46,576	$47,321
Residential Indicator	2.01%	2.00%	2.01%	2.02%
Outside City:				
Incremental Increase in Average Household Bill	$1.01	$1.08	$2.09	$2.16
Resulting Monthly Cost Based on 3,859 Gallons per Month	$102.10	$103.20	$105.30	$107.50
Outside of City MHI	$75,918	$77,133	$78,367	$79,621
Residential Indicator	1.61%	1.61%	1.61%	1.62%
Summary of IOCP Sources and Uses:				
Commencement of IOCP Projects - Bond Funded	$ -	$ -	$ -	$46,500,000
IOCP Projects - Cash Funded (see above)	6,500,000	6,800,000	8,850,000	6,400,000
Total IOCP Project Funding	$6,500,000	$6,800,000	$8,850,000	$52,900,000
Inflated IOCP Cash Construction Requirements	(1,755,000)	(10,233,000)	(6,379,000)	(67,348,000)
Remaining Funds Available for Construction	$16,428,000	$12,995,000	$15,466,000	$1,018,000
IOCP Funding Requirements in 2013 Dollars	($1,230,910)	($6,968,166)	($4,217,000)	($43,228,374)

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

PROJECTION REPORT -IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

(Amounts rounded to nearest $100)

	Projected Calendar Years Ending			
	2029	*2030*	*2031*	*2032*
Projected Annual Revenues				
Metered revenues	$100,751,500	$103,270,200	$105,851,900	$107,492,600
Plus additional revenues from rate increases	2,003,000	2,053,100	1,052,200	1,068,500
Assumed impact of rate increase effective date of 10/1/13				
Less assumed rate fatigue (5% of increase)	(100,200)	(102,700)	(52,600)	(53,400)
Total Projected Available Revenues	$102,654,300	$105,220,600	$106,851,500	$108,507,700
Projected Revenue Requirements:				
Operation and maintenance	$28,831,200	$29,505,900	$30,196,300	$30,902,900
Projected operating expenses resulting from CSO projects	2,551,400	2,764,700	2,986,600	3,217,300
Projected CMOM	4,733,100	4,868,000	5,007,000	5,150,400
Payments in lieu of property taxes	8,541,700	8,648,500	8,768,400	9,335,200
Annual debt service (principal and interest):				
Outstanding bonds & 2013 SRF Bonds	12,035,100	11,982,500	11,925,900	
Proposed Non-IOCP Bonds - Phase 2013 - Bond Funded	2,120,000	2,120,000	2,120,000	2,120,000
Proposed IOCP Bonds - Phase 2014 - Bond Funded	2,345,400	2,345,400	2,345,400	2,345,400
Proposed IOCP and Non-IOCP Bonds - Phase 2016	5,446,500	5,446,500	5,446,500	5,446,500
Proposed IOCP Bonds - Phase 2018	7,672,200	7,672,200	7,672,200	7,672,200
Proposed IOCP Bonds - Phase 2020	3,135,300	3,135,300	3,135,300	3,135,300
Proposed IOCP Bonds - Phase 2022	5,171,300	5,171,300	5,171,300	5,171,300
Proposed IOCP Bonds - Phase 2024	2,001,300	2,001,300	2,001,300	2,001,300
Proposed IOCP Bonds - Phase 2028	3,090,900	3,090,900	3,090,900	3,812,700
Proposed IOCP Bonds - Phase 2031			831,300	831,300
Proposed IOCP Bonds - Phase 2032				11,837,000
Proposed IOCP Bonds - Phase 2036				
Debt service reserve:				
Outstanding Bonds and Proposed 2013 SRF Bonds				(11,925,900)
Proposed Non-IOCP Bonds - Phase 2013 - Bond Funded				
Proposed IOCP Bonds - Phase 2016 -Bond Funded				
Proposed IOCP Bonds - Phase 2018				
Proposed IOCP Bonds - Phase 2020				
Proposed IOCP Bonds - Phase 2022				
Proposed IOCP Bonds - Phase 2024				
Proposed IOCP Bonds - Phase 2028	618,200	618,200	618,200	618,200
Proposed IOCP Bonds - Phase 2031			166,300	166,300
Proposed IOCP Bonds - Phase 2032				11,837,000
Proposed IOCP Bonds - Phase 2036				
Non-IOCP Capital Plan	2,889,400	2,957,000	3,026,200	3,097,000
Non-IOCP Bond Funded				0
Renewals and Replacements	4,519,300	4,625,100	4,733,300	4,844,000
Coverage Applied to Pay for IOCP Projects	8,075,000	9,350,000	8,675,000	7,900,000
Total Revenue Requirements	103,777,300	106,302,800	107,917,400	109,515,400
Other Sources:				
Less interest, pretreatment, industrial surcharges and other income	(1,208,300)	(1,236,600)	(1,265,500)	(1,295,100)
Less Build America Bond subsidy payments	(167,900)	(114,100)	(58,100)	
Total Net Revenue Requirements	$102,401,100	$104,952,100	$106,593,800	$108,220,300
Net Cash Remaining	$253,200	$268,500	$257,700	$287,400
Debt Service Coverage	138%	141%	140%	138%

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

PROJECTION REPORT -IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

(Amounts rounded to nearest $100)

	Projected Calendar Years Ending			
	2029	*2030*	*2031*	*2032*
Impact on Households:				
Suggested Approximate Across-The-Board Increase	2%	2%	1%	1%
District:				
Resulting Approximate Avg. District Rate	$88.73	$90.52	$91.46	$92.38
District MHI	$54,581	$55,454	$56,341	$57,242
Residential Indicator	1.95%	1.96%	1.95%	1.94%
Inside City:				
Incremental Increase in Average Household Bill	$1.60	$1.65	$0.85	$0.85
Resulting Monthly Cost Based on 3,859 Gallons per Month	$81.20	$82.85	$83.70	$84.55
Inside of City MHI	$48,078	$48,847	$49,629	$50,423
Residential Indicator	2.03%	2.04%	2.02%	2.01%
Outside City:				
Incremental Increase in Average Household Bill	$2.16	$2.23	$1.15	$1.15
Resulting Monthly Cost Based on 3,859 Gallons per Month	$109.60	$111.80	$113.00	$114.10
Outside of City MHI	$80,895	$82,189	$83,504	$84,840
Residential Indicator	1.63%	1.63%	1.62%	1.61%
Summary of IOCP Sources and Uses:				
Commencement of IOCP Projects - Bond Funded	$ -	$ -	$9,900,000	$145,000,000
IOCP Projects - Cash Funded (see above)	8,075,000	9,350,000	8,675,000	7,900,000
Total IOCP Project Funding	$8,075,000	$9,350,000	$18,575,000	$152,900,000
Inflated IOCP Cash Construction Requirements	(8,620,000)	(7,317,000)	(21,023,000)	(114,452,000)
Remaining Funds Available for Construction	$473,000	$2,506,000	$58,000	$38,506,000
IOCP Funding Requirements in 2013 Dollars	($5,372,000)	($4,426,895)	($12,348,731)	($65,270,434)

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

PROJECTION REPORT -IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

(Amounts rounded to nearest $100)

	Projected Calendar Years Ending				
	2033	*2034*	*2035*	*2036*	*2037*
Projected Annual Revenues					
Metered revenues	$108,507,700	$109,538,500	$110,579,100	$110,579,100	$110,579,100
Plus additional revenues from rate increases	1,085,100	1,095,400	0	0	0
Assumed impact of rate increase effective date of 10/1/13					
Less assumed rate fatigue (5% of increase)	(54,300)	(54,800)	0	0	0
Total Projected Available Revenues	$109,538,500	$110,579,100	$110,579,100	$110,579,100	$110,579,100
Projected Revenue Requirements:					
Operation and maintenance	$31,626,000	$32,366,000	$33,123,400	$33,898,500	$34,691,700
Projected operating expenses resulting from CSO projects	3,292,600	3,369,600	3,448,500	3,529,200	3,611,800
Projected CMOM	5,150,400	5,150,400	5,150,400	5,150,400	5,150,400
Payments in lieu of property taxes	9,478,000	10,283,600	10,283,600	10,283,600	10,283,600
Annual debt service (principal and interest):					
Outstanding bonds & 2013 SRF Bonds					
Proposed Non-IOCP Bonds - Phase 2013 - Bond Funded	2,120,000	2,120,000			
Proposed IOCP Bonds - Phase 2014 - Bond Funded	2,345,400	2,345,400	2,345,400		
Proposed IOCP and Non-IOCP Bonds - Phase 2016	5,446,500	5,446,500	5,446,500	5,446,500	
Proposed IOCP Bonds - Phase 2018	7,672,200	7,672,200	7,672,200	7,672,200	7,672,200
Proposed IOCP Bonds - Phase 2020	3,135,300	3,135,300	3,135,300	3,135,300	3,135,300
Proposed IOCP Bonds - Phase 2022	5,171,300	5,171,300	5,171,300	5,171,300	5,171,300
Proposed IOCP Bonds - Phase 2024	2,001,300	2,001,300	2,001,300	2,001,300	2,001,300
Proposed IOCP Bonds - Phase 2028	3,812,700	3,812,700	3,812,700	3,812,700	3,812,700
Proposed IOCP Bonds - Phase 2031	831,300	831,300	831,300	831,300	831,300
Proposed IOCP Bonds - Phase 2032	11,837,000	11,837,000	11,837,000	11,837,000	11,837,000
Proposed IOCP Bonds - Phase 2036				4,993,900	4,993,900
Debt service reserve:					
Outstanding Bonds and Proposed 2013 SRF Bonds					
Proposed Non-IOCP Bonds - Phase 2013 - Bond Funded			(2,120,000)	(2,345,400)	
Proposed IOCP Bonds - Phase 2016 -Bond Funded					(5,446,500)
Proposed IOCP Bonds - Phase 2018					
Proposed IOCP Bonds - Phase 2020					
Proposed IOCP Bonds - Phase 2022					
Proposed IOCP Bonds - Phase 2024					
Proposed IOCP Bonds - Phase 2028					
Proposed IOCP Bonds - Phase 2031	166,300	166,300	166,300		
Proposed IOCP Bonds - Phase 2032					
Proposed IOCP Bonds - Phase 2036				4,993,900	
Non-IOCP Capital Plan	3,640,800	3,243,600	3,848,500	3,963,900	4,399,000
Non-IOCP Bond Funded					
Renewals and Replacements	4,486,000	5,073,400	6,019,400	6,200,000	6,069,900
Coverage Applied to Pay for IOCP Projects	8,400,000	7,650,000	9,500,000	1,150,000	13,550,000
Total Revenue Requirements	110,613,100	111,675,900	111,673,100	111,725,600	111,764,900
Other Sources:					
Less interest, pretreatment, industrial surcharges and other income	(1,325,400)	(1,356,400)	(1,388,100)	(1,420,600)	(1,453,800)
Less Build America Bond subsidy payments					
Total Net Revenue Requirements	$109,287,700	$110,319,500	$110,285,000	$110,305,000	$110,311,100
Net Cash Remaining	$250,800	$259,600	$294,100	$274,100	$268,000
Debt Service Coverage	138%	137%	142%	132%	148%

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

PROJECTION REPORT -IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

(Amounts rounded to nearest $100)

	Projected Calendar Years Ending				
	2033	*2034*	*2035*	*2036*	*2037*
Impact on Households:					
Suggested Approximate Across-The-Board Increase	1%	1%	0%	0%	0%
District:					
Resulting Approximate Avg. District Rate	$93.32	$94.30	$94.30	$94.30	$94.30
District MHI	$58,158	$59,089	$60,034	$60,995	$61,971
Residential Indicator	1.93%	1.92%	1.88%	1.86%	1.83%
Inside City:					
Incremental Increase in Average Household Bill	$0.85	$0.90	$0.00	$0.00	$0.00
Resulting Monthly Cost Based on 3,859 Gallons per Month	$85.40	$86.30	$86.30	$86.30	$86.30
Inside of City MHI	$51,230	$52,050	$52,883	$53,729	$54,589
Residential Indicator	2.00%	1.99%	1.96%	1.93%	1.90%
Outside City:					
Incremental Increase in Average Household Bill	$1.15	$1.22	$0.00	$0.00	$0.00
Resulting Monthly Cost Based on 3,859 Gallons per Month	$115.30	$116.50	$116.50	$116.50	$116.50
Outside of City MHI	$86,197	$87,576	$88,977	$90,401	$91,847
Residential Indicator	1.61%	1.60%	1.57%	1.55%	1.52%
Summary of IOCP Sources and Uses:					
Commencement of IOCP Projects - Bond Funded	$ -	$ -	$ -	$61,000,000	$ -
IOCP Projects - Cash Funded (see above)	8,400,000	7,650,000	9,500,000	1,150,000	13,550,000
Total IOCP Project Funding	$8,400,000	$7,650,000	$9,500,000	$62,150,000	$13,550,000
Inflated IOCP Cash Construction Requirements	(33,656,000)	(20,873,000)	(5,058,000)	(42,914,000)	(36,830,000)
Remaining Funds Available for Construction	$13,250,000	$27,000	$4,469,000	$23,705,000	$425,000
IOCP Funding Requirements in 2013 Dollars	($18,634,279)	($11,220,108)	($2,639,570)	($21,744,203)	($18,118,101)

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

PROJECTION REPORT -IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

(Amounts rounded to nearest $100)

	Projected Calendar Years Ending			
	2038	*2039*	*2040*	***28 Year Total***
Projected Annual Revenues				
Metered revenues	$110,579,100	$110,579,100	$110,579,100	**$2,468,842,200**
Plus additional revenues from rate increases	0	0	0	**72,297,600**
Assumed impact of rate increase effective date of 10/1/13				**(5,638,300)**
Less assumed rate fatigue (5% of increase)	0	0	0	**(3,212,100)**
Total Projected Available Revenues	$110,579,100	$110,579,100	$110,579,100	**$2,532,289,400**
Projected Revenue Requirements:				
Operation and maintenance	$35,503,500	$36,334,300	$37,184,500	**$773,883,200**
Projected operating expenses resulting from CSO projects	3,696,300	3,782,800	3,871,300	**57,306,700**
Projected CMOM	5,150,400	5,150,400	5,150,400	**123,441,300**
Payments in lieu of property taxes	10,283,600	10,283,600	10,283,600	**211,781,800**
Annual debt service (principal and interest):				
Outstanding bonds & 2013 SRF Bonds				**227,236,000**
Proposed Non-IOCP Bonds - Phase 2013 - Bond Funded				**42,400,000**
Proposed IOCP Bonds - Phase 2014 - Bond Funded				**111,890,800**
Proposed IOCP and Non-IOCP Bonds - Phase 2016				**157,935,000**
Proposed IOCP Bonds - Phase 2018	7,672,200			**62,706,000**
Proposed IOCP Bonds - Phase 2020	3,135,300	3,135,300		**98,254,700**
Proposed IOCP Bonds - Phase 2022	5,171,300	5,171,300	5,171,300	**34,022,100**
Proposed IOCP Bonds - Phase 2024	2,001,300	2,001,300	2,001,300	**46,677,900**
Proposed IOCP Bonds - Phase 2028	3,812,700	3,812,700	3,812,700	**8,313,000**
Proposed IOCP Bonds - Phase 2031	831,300	831,300	831,300	**106,533,000**
Proposed IOCP Bonds - Phase 2032	11,837,000	11,837,000	11,837,000	**24,969,500**
Proposed IOCP Bonds - Phase 2036	4,993,900	4,993,900	4,993,900	
Debt service reserve:				
Outstanding Bonds and Proposed 2013 SRF Bonds				**(9,954,700)**
Proposed Non-IOCP Bonds - Phase 2013 - Bond Funded				**(4,465,400)**
Proposed IOCP Bonds - Phase 2016 -Bond Funded				**(5,446,500)**
Proposed IOCP Bonds - Phase 2018		(7,672,000)		**0**
Proposed IOCP Bonds - Phase 2020			(3,135,200)	**300**
Proposed IOCP Bonds - Phase 2022				**5,171,500**
Proposed IOCP Bonds - Phase 2024				**2,001,500**
Proposed IOCP Bonds - Phase 2028				**3,091,000**
Proposed IOCP Bonds - Phase 2031				**831,500**
Proposed IOCP Bonds - Phase 2032				**11,837,000**
Proposed IOCP Bonds - Phase 2036				**4,993,900**
Non-IOCP Capital Plan	4,205,400	4,331,500	4,602,200	**167,260,400**
Non-IOCP Bond Funded				**(88,200,000)**
Renewals and Replacements	6,577,600	6,774,900	6,837,500	**100,068,400**
Coverage Applied to Pay for IOCP Projects	6,900,000	20,900,000	15,130,000	**240,430,000**
Total Revenue Requirements	111,771,800	111,668,300	108,571,800	**2,514,969,900**
Other Sources:				
Less interest, pretreatment, industrial surcharges and other income	(1,487,800)	(1,522,600)	(1,558,200)	**(32,432,600)**
Less Build America Bond subsidy payments				**(7,100,500)**
Total Net Revenue Requirements	$110,284,000	$110,145,700	$107,013,600	**$2,475,436,800**
Net Cash Remaining	$295,100	$433,400	$3,565,500	**$9,944,600**
Debt Service Coverage	146%	178%	194%	

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

PROJECTION REPORT -IMPACT ON HOUSEHOLDS RESULTING FROM PROJECTS IDENTIFIED IN THE MAY 31, 2013 IOCP

(Amounts rounded to nearest $100)

	Projected Calendar Years Ending			
	2038	*2039*	*2040*	***28 Year Total***
Impact on Households:				
Suggested Approximate Across-The-Board Increase	0%	0%	0%	
District:				
Resulting Approximate Avg. District Rate	$94.30	$94.30	$94.30	
District MHI	$62,963	$63,970	$64,994	
Residential Indicator	1.80%	1.77%	1.74%	
Inside City:				
Incremental Increase in Average Household Bill	$0.00	$0.00	$0.00	
Resulting Monthly Cost Based on 3,859 Gallons per Month	$86.30	$86.30	$86.30	
Inside of City MHI	$55,462	$56,349	$57,251	
Residential Indicator	1.87%	1.84%	1.81%	
Outside City:				
Incremental Increase in Average Household Bill	$0.00	$0.00	$0.00	
Resulting Monthly Cost Based on 3,859 Gallons per Month	$116.50	$116.50	$116.50	
Outside of City MHI	$93,317	$94,810	$96,327	
Residential Indicator	1.50%	1.47%	1.45%	
Summary of IOCP Sources and Uses:				
Commencement of IOCP Projects - Bond Funded	$ -	$ -	$ -	**$546,800,000**
IOCP Projects - Cash Funded (see above)	6,900,000	20,900,000	15,130,000	**240,430,000**
Total IOCP Project Funding	$6,900,000	$20,900,000	$15,130,000	**$787,230,000**
Inflated IOCP Cash Construction Requirements	(1,244,000)	(19,256,000)	(22,855,000)	**($787,230,000)**
Remaining Funds Available for Construction	$6,081,000	$7,725,000	$0	
IOCP Funding Requirements in 2013 Dollars	($594,335)	($8,929,137)	($10,597,875)	**($540,482,830)**

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

BOND FINANCING FOR PROJECTS IDENTIFIED IN MAY 31, 2013 DRAFT IOCP
(Based on $540 Million in 2013 Nominal Dollars)

	Phase 2013	Phase 2014	Phase 2016	Phase 2018	Phase 2020	Phase 2022	Phase 2024	Phase 2028	Phase 2031	Phase 2032	Phase 2036	Total Bonds 30-Year Plan
IOCP Construction, contingencies and Engineering	$200,000	$26,200,000	$25,000,000	$75,000,000	$50,000,000	$78,000,000	$30,000,000	$46,500,000	$9,900,000	$145,000,000	$61,000,000	$546,800,000
NON IOCP	26,000,000	0	39,200,000	23,000,000								88,200,000
Total Bonding Requirement	26,200,000	26,200,000	64,200,000	98,000,000	50,000,000	78,000,000	30,000,000	46,500,000	9,900,000	145,000,000	61,000,000	635,000,000
Funded debt service reserve	2,120,000	2,345,400	5,446,500									9,911,900
Capitalized interest	1,054,600	2,550,000	2,960,800									6,565,400
Allowance for cost of issuance and rounding (1)	303,400	301,500	302,400	303,000	303,900	302,600	303,500	302,300	304,600	302,300	301,500	3,331,000
Allowance for underwriter's discount (1.5%)	452,000	478,100	1,110,300	1,497,000	766,100	1,192,400	461,500	712,700	155,400	2,212,700	933,500	9,971,700
Estimated Bonds Issued	$30,130,000	$31,875,000	$74,020,000	$99,800,000	$51,070,000	$79,495,000	$30,765,000	$47,515,000	$10,360,000	$147,515,000	$62,235,000	$664,780,000

(1) Assumes an SRF pooled and an open market issue each year with issuance costs of $150,000 per issue.

Assumed Interest Rate	3.50%	4.00%	4.00%	4.50%	4.50%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Percentage of bonds issued	4.53%	4.79%	11.13%	15.01%	7.68%	11.96%	4.63%	7.15%	1.56%	22.19%	9.36%	100%
Weighted Average	0.160%	0.190%	0.450%	0.680%	0.350%	0.600%	0.230%	0.360%	0.080%	1.110%	0.470%	4.68%

(The Accountants' Compilation Report and the summary of significant accounting policies, assumptions and notes are an integral part of this statement.)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES, ASSUMPTIONS AND NOTES
See Accountants' Compilation Report

These financial projections present, to the best of the management of the Evansville Municipal Sewage Works ("Management') knowledge and belief, the Evansville Municipal Sewage Works ("Utility") expected operating revenues, cash operation and maintenance expenses, non-operating revenues and debt service coverage resulting from the construction and financing of the projects identified in the May 31, 2013 Integrated Overflow Control Plan ("IOCP"). The estimated cost in 2013 dollars totals $540 million. Because of the extremely high cost, existing debt of the Utility, the high percentage of people living in poverty and the financial burden of these projects, the Utility proposes to construct these improvements over twenty-eight years. The projections reflect Management's judgment of the expected conditions and its available course of action as of May 31, 2013, the date of this projection. The financial projection is based on Management's assumptions concerning possible future events and circumstances. The assumptions disclosed herein are those which Management believes are significant to the projection or are key factors upon which the financial results of the enterprise depend.

Some assumptions inevitably will not materialize and unanticipated events and circumstances may occur subsequent to May 31, 2013, the date of this projection. Therefore, the actual results achieved during the projection period could vary from the projection, and the variations may be material. Management does not intend to revise this projection to reflect changes in present circumstances or the occurrence of unanticipated events.

The financial projection has been prepared in conjunction with the negotiations with the United States Department of Justice ("DOJ"), the United States Environmental Protection Agency ("EPA") and the Indiana Department of Environmental Management ("IDEM"), collectively (the "Agencies") on the size and scope of the Utility's IOCP.

Significant Accounting Policies

Reporting Entity:

The Utility is a component unit (Enterprise Fund) of the City of Evansville, Indiana. The Utility provides sewer services for the greater Evansville area. These services primarily consist of providing sewage collection and treatment services to the City of Evansville and the surrounding area. The Utility has approximately 51,300 customers at May 1, 2013.

Basis of Accounting:

The Utility reports its financial statements using the economic resources measurement focus and the accrual basis of accounting as prescribed by the Governmental Accounting Standards Board. Under this method, revenues are recorded when earned and expenses are recorded at the time liabilities are incurred.

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EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES, ASSUMPTIONS AND NOTES

See Accountants' Compilation Report

Significant Assumptions and Notes

Projects and Bond Issues

The purpose of this projection is to compare the projected impact of a 28-year $540 million IOCP with the Median Household Income ("MHI") of customers residing in Evansville, customers residing outside of the City's corporate boundaries and the average District MHI as calculated in the Utility's February 22, 2013 Financial Capability Analysis.

$540 Million IOCP

Based on the projections in this report, a $540 million IOCP (in nominal dollars) can be expected to be implemented over 28 years in a manner that increases rates until the average monthly residential bill for sewage is approximately 2% of the in-city MHI, and then maintains that approximate cost per household as a percent of in-city MHI for 18 years (from 2019 through 2037). The cost per household as a percentage of MHI could decline after 2037 when the currently existing debt is retired, and if no additional capital projects are required.

This analysis inflates the $540 million estimate of construction costs at 3% annually based on the consulting engineers' estimate. Projected inflation adds approximately $247 million to the estimated cost of the IOCP bringing the future cost of the project to $787 million. Funding this IOCP over twenty-eight years along with the planned $267 million in non-IOCP construction and capital, would require the issuance of multiple series of bonds in the total par amounts of $671 million to fund $553 million in IOCP construction costs and $88 million of Non-IOCP construction. The remaining bond proceeds will be used for non-construction costs which includes underwriter's discounts bond issuance costs, the funding of debt service reserves and capitalized interest in the total amount of $29.8 million.

The weighted average interest rate for the bonds issued between 2013 and 2036 is assumed to be 4.67%. However, there can are no assurances that interest rates of this level will be achievable over the next 28 years.

An additional $240 million of IOCP and $179 million of Non-IOCP construction cost would be funded with internally generated funds from coverage required on debt service.

Projected Annual Revenues

Projected metered revenues for the projection period are based on the recorded results of operation for the twelve months ended September 30, 2012 adjusted for the following:

1. Metered revenues for projected year 2013 are normalized for 3 months of the 11% Phase II across-the-board rate increase effective January 1, 2012.

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SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES, ASSUMPTIONS AND NOTES

See Accountants' Compilation Report

Projected Annual Revenues (Cont'd)

2. Metered revenues for projected year 2013 are adjusted for the anticipated loss of revenues due to the plant closings of industrial customers. The total adjustment was $86,000.

3. Metered revenues were adjusted to reflect the reduction in Darmstadt billings for the new wholesale rate anticipated to go into effect in 2013.

4. Each projection period is adjusted for additional revenues from annual rate increases over the projection period plus anticipated growth in the number of customers based on the 20-year average growth rate of the Utility of .4%. Since billed flow is based on the consumption of water, billed flow will likely not increase as appliances become more efficient and consumers attempt to avoid the increases in rates resulting from the IOCP.

5. Revenues are adjusted for the "Suggested Approximate Across-the-Board-Increase" which is targeted to provide revenues sufficient to cover operating expenses, debt service and coverage of approximately 135%. Revenues remaining as coverage where available is then used to pay for Non-IOCP capital, renewals and replacements and IOCP capital costs.

6. The 2013 rate increase is projected to take effect October 1, 2013. All other future rate increases are projected to take effect on January 1.

7. Each projection period, except for 2013, is adjusted for the estimated impact of an assumed 5% rate fatigue factor that has been built into each annual increase to recognize that households and businesses will take conservation measures as rates and charges increase.

Operation and Maintenance

The projected operating expenses for the projection period are based upon the recorded results of operations for the twelve months ended September 30, 2012, adjusted for fixed, known and measurable changes. The significant assumptions underlying the projected operating expenses are summarized as follows:

1. The elimination of solid waste expenses.

2. Operating and maintenance expenses for projected years 2014 and 2015 assume an annual inflationary adjustment of 4.8% based on the ten-year average (2000-2010) of annual costs of operations increases for the Utility.

3. Operating and maintenance expenses for projected years 2016 – 2042 assume an annual inflationary adjustment of 2.34% based on the twenty-year average (1990-2010) of the CPI index.

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SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES, ASSUMPTIONS AND NOTES

See Accountants' Compilation Report

Projected CMOM and Operating Expenses Resulting from IOCP Projects

CMOM program expenses were estimated by the Utility's consulting engineers in today's dollars and adjusted based on the 20 year average rate of inflation of 2.34%.

Operating expenses resulting from IOCP Projects are based on estimates provided by the Utility's consulting engineer. At full implementation these costs are assumed to total $4 million per year in present day dollars. These costs are estimated to begin in 2017 and have been adjusted based on the 20 year average rate of inflation of 2.34%.

Payments in Lieu Property of Taxes

The approved budgeted for 2013 payments in lieu of property taxes ("PILT") was assumed for 2013. Thereafter, capital improvements were factored into the PILT calculation assuming that 75% of capital improvements were within the City's corporate limits. Non-IOCP capital was included in the calculation of the PILT in the year following its inclusion in the budget. Bond funded IOCP construction was included in the PILT calculation three years after the bonding of the project. IOCP construction funded with cash was included in the PILT calculation in the year following its inclusion in the budget. PILT was not increased after 2034.

Debt Service

Includes all debt service on currently Outstanding Bonds plus:

1. An annual interest only debt service of $6,750,000 for a par amount of 2013 Series F SRF Bond at 3% interest to complete the Cass Avenue project.

2. For each scenario, it was assumed that 10% of the par value of the bonds would be issued through the SRF and 90% in the open market.

3. Interest was capitalized in certain instances to accommodate cash flow needs.

4. Interest rates were assumed to rise over the implementation period through 2022, and then stay constant at 5%.

5. The release of cash from funded debt service reserves are shown as a reduction to revenue requirements in the year the bonds are retired.

6. Generally, the debt service reserve requirements were funded over five years. Exceptions were made to accommodate cash flow needs through the borrowing of the debt service reserve requirements.

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SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES, ASSUMPTIONS AND NOTES

See Accountants' Compilation Report

Debt Service (Cont'd)

7. The current debt issues described above together with cash generated for the IOCP from debt service coverage were designed to coincide with the need for funds based on the construction schedule drafted by the Utility's consulting engineer and a desire to minimize rate increases in the City to 2% of the in-City MHI.

8. The 2013 through 2018 and the 2031 through 2036 bond issues were assumed to be 20-year issues unless interest was capitalized, and then it was assumed to be for 22 years. Debt service on the bonds issued in 2020, 2024 and 2028 were shown as if they were 30 year amortizations in this projection to minimize cash flow requirements during this period. It is assumed that the actual bonds would be structured with escalating debt service beginning in 2037 when existing coverage is available.

9. The bonds issued in 2020, 2024 and 2028 are assumed to have escalating debt service to correspond with the cash flow available after 2036.

Non-IOCP Capital Plan and Renewals and Replacements

The $114 million Non-IOCP capital plan is based on the plan submitted to the Agencies as part of developing the draft IOCP. The Non-IOCP capital plan is primarily based on the Utility's planning horizon of ten years. In addition to the capital specifically outlined in the plan, the Utility estimates that a minimum of $5 million in 2013 dollars is required annually to effectively replace and renew the Utility's assets. This funding level assumes that 1.7% of the current existing depreciable assets are replaced each year. Accordingly, additional funds have been allocated as "Renewals and Replacements" beginning in 2019 to ensure sufficient funds for plant renewals and replacements. Non-IOCP capital and Renewals and Replacements have been adjusted for an assumed 3% inflation rate.

Non-IOCP Bond Funded

Portions of the Non-IOCP capital requirements are substantial in 2013 through 2018, and will require bond funding. For purposes of this projection, these requirements have been backed out of the revenue requirements to eliminate this as a revenue requirement to show coverage available for the IOCP.

Coverage Applied to Pay for IOCP Projects

Coverage applied to pay for IOCP projects represents the residual cash available (rounded) provided from required debt service coverage. By using internally generated funds, the Utility effectively avoids interest charges for this portion of the IOCP. This projection assumes that rates would be set to cover approximately 135% coverage for the debt. The substantial debt issued in the early years of this program will provide substantial funding for the IOCP. The cash funding of the IOCP construction is currently estimated at $240 million over the 28 year program.

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Other Sources

Pretreatment, industrial surcharges and other revenues are based on the twelve months ended September 30, 2012. These sources assume an annual inflationary adjustment of 4.8% for 2014 and 2.34% per year thereafter based on the twenty-year average (1990-2010) of the CPI index.

The BAB subsidy assumes a subsidy payment from the U.S. Treasury equal to 35% of the interest payments due on the Series 2010 B-1 Build America Bonds. It is assumed, but not guaranteed that the Treasury will make these payments. This subsidy could be impacted by the sequester.

Net Cash Remaining

Net cash represents the projected cash available after paying for operations and maintenance, CMOM, debt service, funding of the debt service reserve and funding portions of the capital requirements.

Debt Service Coverage

This projection attempted to provides approximately level debt service for the twenty-eight year projection period. Debt service coverage of 135% is generally required to effectively market utility revenue bonds. Lower revenue coverage will generally result in higher interest rates. In addition, the coverage provides much needed cash flow to internally finance the extensive capital program suggested by the IOCP.

Impact on Households

Suggested Approximate Across-the-Board Increase

This line item represents the annual increase in rates that would be required to provide funds for operations and maintenance, expenses, CMOM, debt service, funding of debt service reserves, thefunding the annual capital requirements and providing debt service coverage of approximately 135%. Because of ebbs and flows in the capital requirements and funding of the debt service reserve, the rates provide for debt service coverage higher than 135% in some years.

Median Household Income ("MHI")

MHI for projected year 2013 is based on the same data (U.S. Census data) as was used to calculate the average MHI in the Evansville Financial Capability Analysis for the Draft Integrated Overflow Control Plan dated February 22, 2013 submitted to the Agencies. The MHI's vary greatly between those households inside the City's corporate boundaries and those residing outside of the City's corporate boundaries. Accordingly, the data has been segregated in this analysis to better demonstrate the impact of the IOCP on both population groups.

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SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES, ASSUMPTIONS AND NOTES

See Accountants' Compilation Report

Median Household Income ("MHI") (Cont'd)

For the inside city MHI, the 2011American Community Survey 1-Year Estimate was used. The outside the city MHI was estimated using the 2011American Community Survey 1-Year Estimate for Vanderburgh County. The estimate was calculated as follows:

	No. Households	MHI	Household Income
Entire County	74,063	$43,630	$3,231,368,690
City	50,843	$35,939	1,827,246,577
Difference	23,220		$1,404,122,113
Divided by County Households			23,220
Estimated Outside of City MHI			$60,470

For projected years 2014 and 2015, growth in MHI was projected at 3 and 4% respectively based on the projected growth in personal income for the state of Indiana. For projected years 2016 through 2040, MHI is projected to grow at a 1.6% rate based on an analysis prepared by Mohammed Khayum, Ph. D., professor of economics and Dean of Business, College of Business, University of Southern Indiana.

The growth in MHI in the Evansville area has been affected by the globalization of the economy which has resulted in the loss of higher paying factory jobs and changing demographics. Projections for Evansville show that the number of people 65 and older (retirees) will double between 2000 and 2030. The number of retirees in Evansville is expected to be 16% of the population by 2030. Between 2000 and 2010 the growth in the MHI in Evansville was only .6%. While this low growth rate was negatively impacted by the recent recession and the related loss of jobs, we have found no evidence leading us to believe that household income will be able to keep pace with inflation in the Evansville service area.

Average consumption per household of 3,859 gallons is based on consumption for the twelve months ended September 30, 2012 of 3,133,686 gallons attributed to households divided by 67,668 households divided by 12 months. It is assumed to be constant for the entire projection period.

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APPENDIX D

2015 Accounting Report

UMBAUGH

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July 31, 2015

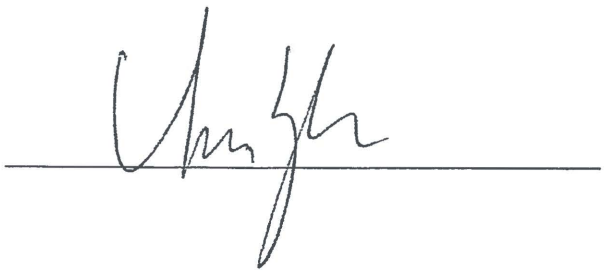
Mr. Allen Mounts, Director
Evansville Water and Sewer Utility
One N.W. Martin Luther King Jr., #104
Evansville, IN 47740-0001

Re: Evansville (Indiana) Municipal Sewage Works
Integrated Overflow Control Plan - Financial Capability Analysis Update

Dear Mr. Mounts:

In connection with the Integrated Overflow Control Plan Financial Capability Analysis for the City of Evansville, we have, at your request, prepared this special purpose report. This special purpose report includes the following schedules:

In the preparation of these schedules, assumptions were made as noted regarding certain future events. As is the case with such assumptions regarding future events and transactions, some or all may not occur as expected, and the resulting differences could be material. We have not examined the underlying assumptions nor have we audited or reviewed the historical data. Consequently, we express no opinion thereon, nor do we have a responsibility to prepare subsequent reports.



EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

CALCULATION OF COST PER HOUSEHOLD AND RESIDENTIAL INDICATORS IN ACCORDANCE WITH PARAGRAPHS 40-45 OF THE CONSENT DECREE

(See Explanation of References on pages 3-6)

	IOCP of $729 Million (1)	
	In-City MHI	**District MHI**
Wastewater Treatment Costs:		
Annual cash operating costs (excluding depreciation):		
Annual cash operating expenses (excluding CMOM O&M) (2)	$22,016,000	$22,016,000
Payments in lieu of tax (3)	2,428,000	2,428,000
Estimated operating expenses resulting from IOCP projects (4)	3,859,600	3,859,600
CMOM (5)	3,193,900	3,193,900
Annual debt service (principal and interest):		
Outstanding bonds (6)	17,718,900	17,718,900
Estimated bonds for IOCP projects (7)	53,625,100	53,625,100
Estimated bonds for Non-IOCP projects (8)	10,510,200	10,510,200
Total Wastewater Treatment Costs	$113,351,700	$113,351,700
Residential Factor Calculation:		
Residential Factor (9)	60.92%	60.92%
Residential allocation of wastewater treatment costs	$69,053,900	$69,053,900
Divided by total number of residential households (10)	66,037	66,037
Annual wastewater treatment cost per household	1,046	1,046
Divided by: 12 months	12	12
Total Monthly Cost Per Residential User (11)	$87	$87
Calculation of Residential Indicator:		
Median household income (10)	$32,414	$40,800
Cost per household as a percent of median household income	3.23%	2.56%

(Continued on next page)

(Subject to the attached letter of Umbaugh dated July 31, 2015)

CALCULATION OF COST PER HOUSEHOLD AND RESIDENTIAL INDICATORS IN ACCORDANCE WITH PARAGRAPHS 40-45 OF THE CONSENT DECREE

(Explanation of References)

(1) This Financial Capability Analysis presents Cost Per Household (CPH) and Residential Indicators (RI) based on the estimated costs to implement the final Integrated Overflow Control Plan (IOCP) presented in the Negotiated Plan (which is based on four CSO discharges per year with secondary treatment), and estimated costs to implement the Sanitary Sewer Remedial Measures Plan (SSRMP), plus potential capacity projects (to capture flows from up to a 10-year storm). The need for capacity projects will be confirmed as Evansville continues ongoing sewer assessment efforts through its CMOM program, and verifies that the modeled wet-weather flows cause the sanitary sewer overflows to occur as projected by the models. All cost estimates are subject to change if the recommended alternatives or levels of control change before the LTCP and SSRMP are finalized and approved. The CPH and RI are presented as required under paragraphs 43-45 of the Consent Decree. Evansville does not agree that the District-wide MHI input accurately reflects the burden that implementing this work will impose on Evansville ratepayers, and has provided the CPH as a percent of MHI for the In-City users and the information below (see note 11) to demonstrate the devastating impact an IOCP of this magnitude will have on the citizen owners of this utility.

(2) The most recent Comprehensive Annual Financial Report (2014) of Evansville Sewage Works does not accurately state the utility's operation and maintenance expenses. Because of significant increases in operating expenses in 2013 and 2014, Evansville Sewage Works is using a test year ended September 30, 2014, adjusted for fixed, known and measurable changes for 2015 for its cash operating expenses because it more accurately reflects current operating and maintenance expenses. This is in accordance with the Consent Decree. Pro forma adjustments were made to reflect Darmstadt Sewage Works for calendar year 2014 (as shown in the 2014 Indiana DLGF Clerk-Treasurer Annual Report). In November 2014 Old State Utility Corporation was incorporated into Evansville Sewage Works. There have been no additional financial reports updated from the State Board of Accounts for Darmstadt. Accordingly, operating expenses for Darmstadt have been adjusted for the average in the CPI Index from December 2007 through May 2015, respectively. In accordance with paragraph 45.a. of the Consent Decree supporting documentation for these operation and maintenance expenses will be provided.

(3) Assumes the current amount budgeted to be paid during 2015. This amount will increase in future years as the IOCP is implemented and the value of the Utility's assets increase.

(4) Based on estimates provided by the City's Consulting Engineer for increases in salaries and wages, benefits, purchased power and other miscellaneous operational costs due to the increase in captured flow. This estimate assumes 98% capture.

(5) Engineering consultant's estimate of the average annual cost of implementing the Capacity, Management, Operation and Maintenance Program (CMOM) in accordance with the Consent Decree.

(6) Calculated as the average annual debt service on the outstanding Sewage Works Revenue Bonds for the five bond years ending July 1, 2020 net of Build America Bond (BAB) subsidy payments.

(7) Assumes IOCP projects financed with 20-year sewage works revenue bond issues with level debt service at an average 4.2% interest rate. The assumed interest rate is based on an assumed combination of 90% open market bonds and 10% SRF bonds. We have assumed the adjusted average MMD rate for a 20 year AA- rated revenue bond for the 20 years ended December 31, 2014 and a 3% interest rate on SRF bonds. As financial consultants to Evansville we believe this assumed interest rate does not properly reflect potentially higher market interest rates that may be may be seen over the ensuing twenty years. The total IOCP projects amount to $729 million, the debt service amount shown is net of the IOCP projects already included in the Outstanding Bonds issued in 2014 for early action items. These projects amount to $12.96 million leaving $716.04 million to be funded.

(8) The estimated Non-IOCP construction costs amount to $150 million for the years 2016 through 2035 on the Non-IOCP 20-year CIP and annual replacements per utility management. The estimated total is reduced by $9.66 million of projects already included in the Oustanding Bonds issued in 2014 that have yet to begin construction. Assumes 20-year sewage works revenue bond issues with level debt service at an average 4.2% interest rate. The assumed interest rate is based on an assumed combination of 90% open market bonds and 10% SRF bonds. We have assumed the adjusted average MMD rate for a 20 year AA- rated revenue bond for the 20 years ended December 31, 2014 and a 3% interest rate on SRF bonds. The City issued sewage works revenue bonds totaling $171.1 million over the 10-year period ended December 31, 2013 which does not include rate funded capital improvements. Based on this information the $140.34 million of Non-IOCP capital expenditures over the ensuing 20 years appears to be reasonable, if not low.

(Continued on next page)

(Subject to the attached letter of Umbaugh dated July 31, 2015)

(8) Continued:

The Utility conservatively estimates that $8.6 million in 2015 dollars is required annually in Non-IOCP capital funds to effectively renew and replace the Utility's assets. This funding level assumes that approximately 2.5 percent of the current existing depreciable assets are replaced each year over a 41-year period. This is in line with the industry standard of 2.5 percent (which also is the rate of depreciation that the Indiana Utility Regulatory Commission requires utilities to use).

(9) EPA's FCA Guidance directs municipalities to calculate the residential share of the total cost by "multiplying the percentage of total wastewater flow including infiltration and inflow attributable to residential users by the total cost." The Consent Decree clarifies that Evansville may determine costs to residential users of the flow "attributable to residential users" by calculating how flows are paid for under Evansville's rate structure. Specifically, paragraph 45.e. of the Consent Decree states that : "Defendants also shall use the same ratio between total wastewater flow and residential infiltration and inflow that Defendants use for rate setting purposes, if any, to calculate the residential share of wastewater treatment costs."

Evansville's rates are based on a mixture of fixed costs and costs based on flow. The residential share of 60.92 percent is based on the same ratio between total wastewater flow and residential infiltration and inflow Evansville uses for rate setting purposes, as shown in the 2013 cost of service study assuming total rates and full implementation of the cost based rates. Based on Evansville's rate structure, 60.92 percent is the actual residential share of wastewater treatment costs and is the share to be used for calculating the residential share of wastewater treatment costs in accordance with paragraph 45.e. of the Consent Decree because it is the ratio used for rate setting purposes.

(10) The Consent Decree requires calculating the residential share of wastewater treatment costs in accordance with EPA's CSO Financial Capability Assessment Guidance, Evansville shall use the most recent year of Federal Census or ACS data and billing data regarding Evansville's customer base not reflected in such data. Evansville also shall use the same ratio between total wastewater flow and residential infiltration and inflow that Evansville use for rate setting purposes, if any, to calculate the residential share of wastewater treatment costs.

When calculating the total number of households in Evansville's service area, the Consent Decree requires Evansville to count each single family house, and each unit in multi-family housing structures such as apartment buildings and duplexes as one household, but shall not count households that have onsite sewage disposal systems. To the extent that customers billing data does not accurately reflect the number of units in multi-family housing structures, Evansville shall use ACS and Federal Census data to more accurately estimate the total number of households in Evansville's service area.

(Continued on next page)

CALCULATION OF COST PER HOUSEHOLD AND RESIDENTIAL INDICATORS IN ACCORDANCE WITH PARAGRAPHS 40-45 OF THE CONSENT DECREE
(Explanation of References)

(10) Continued:

The calculation of the combined MHI for the service territory is as follows:

Township	Occupied Households Served per Evansville GIS (a)	Ratio of Households to Total Households Served	MHI for Township	Ref	Weighted MHI
Center Township	12,875	19.50%	$60,477	(b)	$11,800
German Township	158	0.24%	68,425	(c)	200
Knight Township	29,733	45.02%	36,210	(d)	16,300
Perry Township	7,056	10.68%	42,935	(b)	4,600
Pigeon Township	14,660	22.20%	27,070	(b)	6,000
Scott Township	1,473	2.23%	79,233	(c)	1,800
Union Township	5	0.01%	47,950	(c)	-
Warrick County (Ohio Twnship)	77	0.11%	65,405	(b)	100
Total	66,037				$40,800

(a) The number of households are based on the 2010 Census data and the GIS shape files as calculated in the February 22, 2013 report reduced by the Utility's allocated share of the estimated reduction in the number of households in Vanderburgh County through 2013. It is estimated that there has been a 1,631 reduction in the number of households in the service area based on the 2013 ACS 1-year estimate compared to the 2010 Census amount. The number of households in the City has decreased by 977 comparing the 2013 ACS 1-year estimates to the 2010 Census figures. This negative outlook on the number of households is a disturbing trend which will add to the financial burden on the rate payers of the City and District resulting from the IOCP project expenditures.
(b) MHI's taken from ACS' 2013 3-YR inflation adjusted dollars.
(c) MHI's taken from ACS' 2013 5-YR inflation adjusted dollars, as the 1-YR and 3-YR are not available.
(d) MHI's taken from ACS' 2013 1-YR inflation adjusted dollars.

(11) The use of the combined District MHI for the combined service area of the Evansville Municipal Sewage Works results in an IOCP that conceals the devastating affect that an IOCP of this magnitude will have on the very citizens that own the Sewage Works. The citizens of Evansville face much greater economic challenges and have fewer options than the citizens living in the unincorporated areas served by the utility. Hence the inclusion of incomes of those living outside the county is unfair to the citizens of Evansville. An IOCP that leads to an annual sewage charge of $1,046 would result in the median household in Pigeon Creek Township paying 3.9% of their income for sewage.

In fact, the ACS data shows that 19.9% of all families and 25.0% of all the people residing in Evansville already live below the poverty level. For families with children under the age of 18, the number of those families living below the poverty line rises to 34.6%.

In the tables below, we show below the impact on the less fortunate citizens of Evansville resulting from an IOCP of $729 million. The result of an IOCP of this magnitude will result in 52.3% of Evansville households paying more than 3% of their income on sewage costs and 68.9% will pay 2% or more of their income on sewage costs.

(Continued on next page)

CALCULATION OF COST PER HOUSEHOLD AND RESIDENTIAL INDICATORS IN ACCORDANCE WITH PARAGRAPHS 40-45 OF THE CONSENT DECREE

(Explanation of References)

(11) Continued:

Impact on Evansville Households (in City) from a CPH of $1,046				
Census Bureau Household Income Categories	Assumed Household Income	Households in Category (ACS - 2013)	% of Evansville Households in Category	Suggested CPH as a % of MHI
<$10,000	$10,000	6,607	13.3%	10.5%
$10,000 to $14,999	$12,500	3,785	7.6%	8.4%
$15,000 to $24,999	$20,000	7,562	15.2%	5.2%
$25,000 to $34,999	$30,000	8,053	16.2%	3.5%
$35,000 to $49,999	$42,500	8,247	16.6%	2.5%
$50,000 to $74,999	$62,500	7,931	16.0%	1.7%
$75,000 >	$100,000	7,426	15.0%	1.0%

The proposed IOCP coupled with other capital costs will increase costs by 269% over current costs (as calculated below - assuming 2015 In-City Residential Rates). The table below compares the current annual sewer bills as a percentage of MHI by income category to projected annual sewer cost resulting from an IOCP of this magnitude. In this instance, 68.9% of the Evansville households would have sewage costs of 2.5% or more of household income, 52.3% of households would have sewage costs in excess of 3.5% or more and 36.1% or more of households would have sewage costs in excess of 5.3%.

Rate Impact on Evansville Households (in City) from a IOCP of $729 Million				
Census Bureau Household Income Categories	Assumed Household Income	Households in Category (ACS - 2013)	Current Annual Sewer Bill as a % of MHI *	Projected Annual Sewer Bill as a % of MHI**
<$10,000	$10,000	13.3%	4.5%	12.1%
$10,000 to $14,999	$12,500	7.6%	3.6%	9.7%
$15,000 to $24,999	$20,000	15.2%	2.3%	6.1%
$25,000 to $34,999	$30,000	16.2%	1.5%	4.0%
$35,000 to $49,999	$42,500	16.6%	1.1%	2.9%
$50,000 to $74,999	$62,500	16.0%	0.7%	1.9%
$75,000 >	$100,000	15.0%	0.5%	1.2%

*Assumes current inside the city rates and average consumption of 3,859 gallons per month - total current annual average sewage cost of $451.

** Assumes rates will rise by 269% to pay for the IOCP calculated as follows:

Total future Wastewater Treatment Costs	(see page 2)		$113,351,700
Existing wastewater operations and maintenance expense	(see page 2)	$22,016,000	
Existing payments in lieu of tax	(see page 2)	2,428,000	
Existing debt service	(see page 2)	17,718,900	
Total Existing Cost			42,162,900
Future costs as a % of existing treatment costs			269%

(Subject to the attached letter of Umbaugh dated July 31, 2015)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

SUMMARY OF CSO FINANCIAL CAPABILITY INDICATORS

Indicator	Actual Value	Weak, Mid-Range Strong	Score
City's Bond Rating (1)	AA-/A1	Strong	3
Overall Net Debt Per Capita (2)	$2,138	Mid-Range	2
Overall Net Debt as a Percent of Full Market Value (3)	2.43%	Mid-Range	2
Unemployment Rate (4)	5.01%	Mid-Range	2
Median Household Income (5)	$40,800	Mid-Range	2
Property Tax Revenue as a Percent of Full Market Property Value (6)	0.64%	Strong	3
Property Tax Revenue Collection Rate (7)	87.73%	Weak	1
Permittee Indicators Score			2.14

(1) If the City were to issue debt for CSO improvements, it would likely issue a revenue bond. The City of Evansville Sewage Works received a AA- underlying rating from Standard & Poor's on August 1, 2014. The City of Evansville Sewage Works also received an A1 underlying rating from Moody's Investors Service, affirmed July 31, 2014.

(2) Information available for Evansville:

Current overall net debt for Evansville including underlying and overlapping debt (As of 3/1/15). Does not include utility revenue bonds.	$251,062,072
Divided by population (2010)	117,429
Overall Net Debt Per Capita	$2,138

(3) Information available for Evansville:

Current overall net debt for Evansville including underlying and overlapping debt (As of 3/1/15). Does not include utility debt.	$251,062,072
Divided by estimated allocable full market property value to sewer service area	10,339,751,696
Overall Net Debt as a Percent of Full Market Value	2.43%

(Continued on next page)

(Subject to the attached letter of Umbaugh dated July 31, 2015)

SUMMARY OF CSO FINANCIAL CAPABILITY INDICATORS

(4) For May 2015, per the U.S. Bureau of Labor Statistics. (National Average = 5.76%)

(5) Refer to "Calculation of Cost per Household and Residential Indicators", page 2. National MHI of $52,250 was derived for National Median Household Income for 2013 from ACS 1-Year Estimates.

(6) Per the State Department of Local Government Funding - 2015, calculated as follows:

Property taxes levied in Evansville for collection year 2015	$66,322,738
Divide by estimated full market property value pay 2015	10,339,751,696
Property Tax Revenue as a Percent of Full Market Property Value	0.64%

(7) Per the Vanderburgh County Auditor's Office, calculated as follows:

Property taxes collected in Evansville for year 2014	$54,104,548
Divided by property taxes levied in Evansville for collection year 2014 (gross)	61,672,729
Property Tax Revenue Collection Rate	87.73%

(Subject to the attached letter of Umbaugh dated July 31, 2015)

EVANSVILLE (INDIANA) MUNICIPAL SEWAGE WORKS

FINANCIAL CAPABILITY MATRIX SCORE AND OTHER FINANCIAL CONSIDERATIONS

Permittee Financial Capability Indicators Score	Residential Indicator (Cost Per Household as a % of MHI)		
	Low (Below 1.0%)	Mid-Range (Between 1.0 and 2.0%)	High (Above 2.0%)
Weak (Below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (Between 1.5 and 2.5)	Low Burden	Medium Burden	High Burden
Strong (Above 2.5)	Low Burden	Low Burden	Medium Burden

OTHER FINANCIAL CONSIDERATIONS:

Bonding Capacity

It is likely that the bonds issued to fund the Integrated Overflow Control Plan projects ("IOCP") will be issued as sewage works revenue bonds due to the financial pressures on the City's General Fund and property tax revenues. The property tax collections are being reduced and limited by the circuit breaker tax credits recently implemented by the State Constitution. Currently there is no statutory limit on the issuance of sewage works revenue bonds. Although, the issuance of sewage works revenue bonds is limited based on the ability to pay for the bonds from reasonable sewer rates and charges. If rates increase and the customer base can sustain the incremental rate increases, the City's sewage works has the available bonding capacity to pay for the 25 year IOCP Negotiated Plan, although this level of an IOCP will place a high burden on the rate payers of the City's sewage works. The higher burden on rate payers will have a negative impact on the ratings and potentially employment in the city. In turn these factors could have a negative impact on the ability of the utility to issue additional bonds.

Grant and/or Loan Eligibility

The City plans to apply for and obtain as much grant funding as possible for the proposed project although currently there are limited grant funds available and lots of competition for sewer projects grants. The City did receive a $4 million grant from the federal American Reinvestment and Recovery Act ("ARRA") administered through the Indiana State Revolving Loan Fund Program ("SRF") in 2009 for its South East Blvd., Brookside Rd. project. For purposes of this analysis we have assumed no grants for the IOCP projects due to the uncertainty of receiving the grants.

The City has issued bonds through SRF's subsidized interest rate loan program in the past and plans to continue to take advantage of this program through future revenue bond issues as long as there is available funding in the program. In the past few years, there has been more proposed projects state-wide for this program than available funds. Due to the uncertainty of available funding through the SRF Program, we have assumed that the sewage works revenue bonds for the IOCP projects will be issued primarily on the open market.

Other Viable Funding Mechanisms

The City does have other funding mechanisms and revenue sources available if given adequate time. The funding for the Negotiated Plan will be 25 years using a combination of pay-as-you go and debt financing. In 2031, $11 million of current debt service will become available which will enable the City to fund a much larger IOCP. However, an extended implementation period would be required.

Cash Flow Capacity for the Period Specified

It is not clear that the City's sewage works will have sufficient cash flow capacity for operations and to pay for the IOCP projects assuming a 20-year implementation period based on the analysis on page 2 and that there will not be significant changes in the sewage works' operating expenses or revenues. Other factors that could change this analysis are major changes in the capital markets which could lead to lack of available financing through the municipal bond market and/or significant increases in the municipal bond interest rates based on market conditions. Again, the rates and charges resulting from the funding the IOCP will put a high burden on the City's sewage works rate payers.

(Subject to the attached letter of Umbaugh dated July 31, 2015)