CHAPTER 1

Long Term Control Plan – Table of Contents

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1.0 CHAPTER 1 - INTRODUCTION

1.1 OVERVIEW

This document represents the Combined Sewer Overflow (CSO) Long-Term Control Plan (LTCP) for the City of Fort Wayne, Indiana ("City"). The LTCP describes a water quality-based approach that will dramatically reduce the discharge of untreated CSOs, improve water quality in Fort Wayne's CSO-impacted streams, is technically feasible, and is consistent with the federal CSO Control Policy and associated Indiana guidance.

Nationally, most CSO communities are located in the Northeast, the Great Lakes Region and the Pacific Northwest. In Indiana, 105 municipalities have utilized or still utilize combined sewer systems that include CSOs. The majority of Fort Wayne's CSOs are located in the older or central part of the City. Separate sanitary and storm sewers serve the newer, outlying areas of the City. A map of the City's Sewer Service area is shown in Figure 1.1.1.

On average, over 1 billion gallons of raw sewage per year is discharged into Fort Wayne's receiving streams as a result of wet weather conditions. The City is proposing a watershed-based plan that, when fully implemented, will improve river water quality, but in a way the community can afford. In a typical year, the plan is designed to achieve a level of control in which no more than 4 overflows occur to the St. Mary's and Maumee Rivers without adequate treatment or control and no more than 1 overflow on the St. Joseph River without adequate controls. The City currently experiences approximately 71 overflow events in a typical year. This LTCP represents an impressive level of control for previously uncontrolled wet weather discharges from CSOs. Impressive as these controls may be, the City's LTCP is dependent on a revision of applicable recreational water quality standards which acknowledges the infeasibility of meeting the water quality criteria associated with the current recreational use designated for the City's waterways under all storm events, regardless of intensity and duration.

1.2 BACKGROUND

The City operates a combined sewer system (CSS) with combined sewer overflows, as well as a separate sanitary sewer system in some parts of the service area for the City's wastewater utility. Also owned and operated by the City is a waste water treatment plant known as the Paul L. Brunner Water Pollution Control Plant (WPCP). The CSS includes regulator structures that direct dry-weather flows from the combined trunk sewers to interceptor sewers which transport the flows to the WPCP for treatment. During periods of wet weather, the regulator structures control the amount of combined sewage that is allowed to enter the interceptor system. Flows in excess of the hydraulic capacity of the interceptor sewers are conveyed to the St. Joseph, St. Mary's, and Maumee Rivers and tributary creeks and ditches through CSO outfalls.

The main pollutants in CSOs are untreated human and industrial wastes, toxic materials like oil and pesticides, and floating debris that may wash into the sewer system. The pollutants in CSOs can impair the recreational use of the rivers. These pollutants may be harmful to the health of humans who swim in CSO-polluted water due to high levels of bacteria. *E. coli* bacteria is an indicator organism that estimates the level of fecal contamination in the CSO-receiving streams. High levels of *E.Coli* indicate bacterial contamination and the possible presence of pathogenic organisms that may cause or contribute to intestinal disease in humans.

Water quality in Fort Wayne's receiving streams is affected by many sources other than CSOs. For example, stormwater runoff, failing septic systems, as well as pollutants flowing into Fort Wayne from upstream communities, woodlands and agricultural areas affect the water quality of Fort Wayne's receiving waters. Because many sources of pollution impact the quality of Fort Wayne's streams, a watershed-based strategy will be used for characterizing the CSO-receiving streams.

CSOs are regulated under the Clean Water Act (CWA) (Section 402) and its National Pollutant Discharge Elimination System (NPDES) program. The NPDES program permits and regulates wastewater discharges.

Although IDEM issued the WPCP's current NPDES permit effective December 1, 2004, a modified NPDES permit is expected to be issued shortly with an effective date in December 2007 or January 2008.

1.3 FEDERAL CSO CONTROL POLICY

The United States Environmental Protection Agency (U.S. EPA) published a CSO Control Policy in April 1994 (*59 Federal Register 18688*) mandating that communities and states control CSOs and meet CWA requirements, including water quality standards. IDEM subsequently developed guidance for Indiana CSO communities in developing LTCPs that will comply with the federal CSO Control Policy. Both Indiana and federal policies require the following actions:

1. Characterize the combined sewer system and the affected streams
2. Implement certain minimum operational measures known as the Nine Minimum Controls (NMC). The NMCs are as follows:
    - Proper operation and maintenance of the combined sewer system and the CSOs
    - Maximum use of the collection system for storage
    - Review and modify pretreatment requirements to assure CSO impacts are minimized
    - Maximum flow to the POTW for treatment
    - Prohibition of CSOs during dry weather
    - Control of solid and floatable material in CSOs
    - Pollution prevention

- Public notification
- Monitoring to characterize CSO impacts and the efficacy of CSO controls

3. Develop a CSO long-term control plan.

1.3.1 Key Elements of the CSO Control Policy

The CSO Guidance for Long-Term Control Plan development provides guidance to CSO communities to assist them in developing appropriate, site-specific programs to control CSOs in compliance with documented NPDES permit program and Clean Water Act requirements. Among other things, this guidance identifies the following nine essential elements of LTCPs:

1. Characterization, monitoring and modeling.
2. Public Participation
3. Sensitive Areas
4. Evaluation of Alternatives
5. Cost/Performance Considerations
6. Operational Plan
7. Maximization of Treatment at the Existing POTW Treatment Plant
8. Implementation Schedule
9. Post-construction Compliance Monitoring Program

These key elements have been addressed in the City's LTCP.

1.3.2 Four Key Principles

As outlined in the CSO Guidance, the four key principles for cost-effective CSO controls are:

- *Provide clear levels of control that would be presumed to meet appropriate health and environmental objectives*
- *Provide sufficient flexibility to municipalities, especially those that are financially disadvantaged, to consider the site-specific nature of CSOs and to determine the most cost-effective means of reducing pollutants and meeting CWA objectives and requirements*
- *Allow a phased approach for implementation of CSO controls considering a community's financial capability*
- *Review and revise, as appropriate, WQS and their implementation procedures when developing long-term CSO control plans to reflect the site-specific wet weather impacts of CSOs*

1.3.3 Long-Term Planning Approach Summary

System characterization, development and evaluation of control alternatives, and selection and implementation of CSO controls are the three major steps in the LTCP planning approach. In its effort to develop the LTCP, the City has followed, step-by-step, these guidance documents provided by U.S. EPA:

- Guidance for Long-Term Control Plan
- Guidance for Nine Minimum Controls
- Guidance for Screening and Ranking of Alternatives
- Guidance for Monitoring and Modeling
- Guidance for Financial Capability Assessment

1.3.4 Document organization

The format of the City's LTCP generally reflects that outlined in the above mentioned guidance documents.

This LTCP is organized as follows:

Chapter 1 provides an introduction and describes the principles and goals that have guided Fort Wayne in developing this LTCP.

Chapter 2 describes the City's CSS, the local waters impacted by the City's CSOs, CSO and non-CSO pollutant sources, and CSS and receiving water monitoring and modeling.

Chapter 3 describes the City's development and evaluation of alternatives for CSO control. Additionally, the LTCP approach and financial capability analysis are included in this chapter.

Chapter 4 describes the City's selection and implementation of the LTCP. This includes sections on public participation, final selection and development of the plan, a financing plan, an implementation schedule, an operational plan, post construction and compliance monitoring.

Chapter 5 describes federal and state requirements associated with a UAA, provides an introduction to the City's draft UAA to be submitted to IDEM for consideration, and requests approval by IDEM (and ultimately EPA) of a revision to the recreational designated use for the waterways impacted by the City's CSOs to the Indiana CSO Wet Weather Limited Use Subcategory.

1.4 PRELIMINARY ACTIONS & CONSIDERATIONS FOR LTCP DEVELOPMENT

1.4.1 Initial Activities

A Sewer Master Plan developed by the City in 1993 recognized the need to develop a LTCP like-plan. An internal CSO program team comprised of staff members from Fort Wayne's Sewer Engineering Department and various consulting firms was organized for CSO control planning. The team produced a CSO Operation Plan in 1995/1996.

In addition to the Engineering Department, a number of other Fort Wayne City entities were involved in the CSO control planning efforts including: the City's Public Information Office, Utility Administration, City Controller, City Engineering, and Utility Operations and Maintenance. Consultants involved include: Malcolm Pirnie, Donohue and Associates, CH2M Hill, Jones and Henry Engineers, Ltd., Rust Environment and Infrastructure, and Michael Hoggarth, PhD of Otterbein College.

In the late summer of 1995, the Mayor of Fort Wayne created a citizen task force to give feedback to the City on various sewer planning issues. The Sewer Task Force (STF) worked on a number of sewer issues, in addition to CSOs, between September 1995 and October 1996. To implement recommendations of STF, the City developed the CSS Capacity Improvement Program which in turn developed early action projects and produces early modeling efforts.

In 1997 the City initiated a "Total Watershed Quality Management" approach to identify water quality problems, develop water quality goals, priorities and solutions for Fort Wayne's receiving streams. This effort involved "stakeholders" from Fort Wayne City Utilities, the Civil City, Allen County government and other organizations that have responsibilities and jurisdictions relating to the Upper Maumee Watershed. Citizens – particularly those who had been active in river water quality issues – were also included. Interviews were conducted with these stakeholders and three workshops were held to establish a set of community-based water quality goals for the Upper Maumee Watershed. This approach addresses pollutant sources and water quality concerns that have not been adequately addressed by traditional point source control mechanisms.

1.4.2 Public Participation and Agency Interaction

Involving both public and regulatory agencies is crucial to the success of a CSO control program. The STF recommended to the Mayor that an advisory group be established to oversee implementation of the original recommendations of the Sewer Task Force and provide input on CSOs controls and other water quality issues. The Sewer Advisory Group (SAG) was formed in January 1997 to continue through the development and implementation of the LTCP.

Regulatory agency interaction began in 1995 when the City received an Administrative Order from U.S. EPA's Region V office. Among the requirements of the Order were for the City to submit a detailed monitoring plan for measuring flows in the receiving waters and all CSO

discharge points, submit a CSO Operational Plan for approval and implement the plan and prepare a CSO Long term Control Plan.

Agency interaction continued in 1999 when the City submitted its first LTCP draft to U.S. EPA. A schedule for CSO controls was not included in the original submittal. The City resubmitted a complete LTCP draft in 2001 and received first comments in November 2002. LTCP negotiations began with U.S. EPA and IDEM in January 2003.

1.4.3 Coordination with State Water Quality Standards Authority

The CWA requires that uses be designated by the state for each water body it regulates. Indiana Water Quality Standards (WQS) prescribe the minimum water quality specifications that are to be attained for particular use designations.

The Indiana Water Pollution Control Board (IWPCB) has designated virtually all Indiana waters as "fishable/swimmable" meaning that the State's WQS to protect aquatic life and full-body contact recreation are applicable in all Indiana waters (with the exception of a small group of waters designated for limited uses). Indiana has also established use designations for public drinking water supply, industrial and agricultural uses.

Full-body contact recreation includes, but is not limited to, swimming and other activities that potentially involve total body immersion and/or potential for incidental water ingestion. The full-body contact recreation standard in Indiana is based on an indicator organism, *E.coli* bacteria, and is set at 235 colony forming units per 100 ml in any one water sample in a 30 day period. While water quality in the waterways associated with the City's CSS will improve with improved control of CSOs, the City believes it is not feasible to control CSOs under more substantial wet weather events sufficiently to meet the *E. coli* criteria under such conditions. In addition, due to stormwater runoff from agricultural and urban areas, including areas with failing septic systems, and other pollutant sources, Indiana's full-body contact recreational water quality standard is still likely to be exceeded, occasionally if not frequently, in the waters historically impacted by the City's CSOs after LTCP implementation.

The CSO Control Policy describes options that are available to states to revise WQS "…to adapt to their WQS, and implementation procedures to reflect site-specific conditions including those related to CSOs." Some options include:

- Adopting partial uses
- Adopting seasonal uses
- Defining use with greater specificity
- Granting a temporary variance to a specific discharge

In conjunction with this LTCP, the City is requesting the IDEM and the IWPCB to approve a revision of the recreational designated use that is applicable to the CSO-impacted waters to instead apply a CSO wet weather limited use subcategory during periods of wet weather impact.

1.4.4 Request for a Water Quality Standards Revision Relating to Impacts of CSOs

Federal and Indiana law allow for consideration of revisions to existing water quality standards in limited circumstances. In April 2005, in an effort to better define a potential option for revisions to Indiana water quality standards for recreational use which are affected by CSO discharges, the Indiana General Assembly approved SEA 620, which provides for the following:

- A limited wet-weather use subcategory may be approved for application to CSO impacted waters where there is an approved LTCP and other appropriate conditions are met;
- The CSO wet weather limited use subcategory and its water quality based requirements may remain in effect for up to four days after the discharge ends.

Such revisions to existing water quality standards may be considered and approved only if a UAA is first prepared by the state water quality agency (IDEM in this case) to evaluate whether full attainment of the existing designated use is infeasible. A UAA refers to a structured scientific assessment of the physical, chemical, biological, and economic factors affecting the attainment of a designated use as provided in 40 CFR 131.3(g).

Federal Regulations (40 CFR 131.10(g)) allow only six reasons for removing or revising a use designation based on the infeasibility of attainment:

1) Naturally occurring pollutant levels prevent attainment;
2) Natural ephemeral, intermittent, or low flow prevents attainment;
3) Human caused pollution prevents attainment and cannot be remedied without causing worse environmental harm;
4) Dams, diversions, and other hydrologic modifications prevent attainment and it is not feasible to restore the water or operate the modification in a way that would result in attainment;
5) Natural physical features prevent attainment;
6) Attainment requires controls more stringent than effluent limitations or new source performance standards and these extraordinary controls would result in substantial and widespread social and economic hardship.

Detailed information on the City's UAA process can be found in Chapter 5.

1.4.5 Integration of Current CSO Control Efforts

The City has already implemented many projects and programs for CSO control prior to approval of its LTCP, including:

- Implementation of the NMCs

- Upgrading the WPCP through construction of new headworks and primary treatment facilities
- Partial implementation of the Combined Sewer System Capital Improvement Program begun in 1997 with the primary intent of reducing the likelihood of sewage backups into basements
- Analysis of the operation of the City's CSO ponds to maximize their benefit in controlling CSOs
- Completion of design and initiation of bidding process (as of November 2007) for the interim CSO Ponds Bleedback / Dewatering Project

1.4.6 Watershed Approach to CSO Control Planning

- Watersheds may be impaired by a variety of other factors besides CSOs. Sources of impairment and pollution may include other point source discharges; discharges from storm drains; urban and agricultural runoff; real estate development and resultant habitat destruction; other land use activities; erosion; failing septic systems and landfills

The demonstration approach to CSO control allows a permittee to demonstrate attainment of WQS, provide for consideration of natural background conditions and pollution sources other than CSOs, and promotes the development of total maximum daily loads (TMDLs). Further discussion of the City's selection of the demonstration approach in the attainment of WQS is located in section 3.2 (Long-Term Control Plan Approach).

1.4.7 Project Goals

Through its LTCP, the City will implement a series of controls to reduce and control the amount of combined sewage discharged to the St. Joseph, St. Mary's and Maumee Rivers and their tributaries in an affordable and cost-effective manner. Reducing combined sewage overflows will improve river water quality, river habitat and aesthetics (fewer floatables and other objectionable materials).

The City will meet technology-based CSO requirements by implementing the NMCs through the Amended Combined Sewer System Operational Plan (CSSOP). The CSSOP is designed to be used by the City, through its wastewater utility, Board of Public Works, and other departments involved in programs that affect the operations and maintenance of the City's CSS.

CSO control alternatives have been evaluated based on cost, performance and non-monetary factors. However, even if all CSOs were eliminated, the receiving streams would still not meet Indiana's current water quality standards.

The ultimate degree of CSO control to be achieved by the City under the LTCP process is closely tied to the results of the City's UAA, which will define local wet-weather water quality

requirements for the receiving streams in accordance with SEA 620. The LTCP presented in this document targets the level of control required to achieve the water quality requirements expected from the UAA and the City's request for an appropriate water quality standard revision.

1.5 SUMMARY OF ALTERNATES EVALUATED AND DETERMINATION OF FINAL LONG TERM CONTROL PLAN

This section summarizes the development and evaluation of CSO control alternatives, cost to implement the plan, as well as how the City will monitor and report progress.

1.5.1 Development and Evaluation of Alternatives

The City considered seven alternatives for reducing overflows and meeting Clean Water Act requirements. The options included capturing and storing sewer overflows for later treatment, increasing treatment capacity, and separating combined sewers into sanitary and storm sewers.

1. **Deep Tunnel Storage:** This option would build one or more tunnels 50 to 150 feet below ground to capture and store sewer overflows during a storm. After the storm, sewage would be pumped to the Water Pollution Control Plant for treatment. Many cities have built or are planning tunnels to reduce sewer overflows, including Toledo, Indianapolis, Cleveland and Chicago.

2. **Satellite Disinfection Basins**: This option would build basins in neighborhoods to capture overflows, disinfect the captured wastewater to kill bacteria and then discharging it to the river. This would provide less treatment than the City's wastewater treatment plant provides.

3. **CSO Ponds with Storage/Treatment:** The City has two existing combined sewer overflow (CSO) ponds that store wet-weather flows across the Maumee River from the Water Pollution Control Plant. This option would use the ponds to temporarily store additional wet-weather flows. After the storm, the stored wet weather flow in the CSO ponds would be either transported back to the plant for treatment or discharged through new high rate, wet weather treatment facilities. Five different storage/treatment options were considered under this alternative. Larger sewers would need to be built to get additional flow to the ponds.

4. **CSO Ponds with Treatment plus Satellite Treatment at Foster Park:** This option would transport most overflows to the CSO ponds, but build high-rate, wet-weather treatment facilities at an overflow location at Rudisill Boulevard near Foster Park. The Rudisill Boulevard overflow is the most active in the City's system, contributing 390

million gallons to the St. Mary's River in a typical year. It is also located far from the City's treatment plant, making on-location treatment a more attractive option.

5. **Partial Sewer Separation:** This option would reduce the amount of stormwater entering the combined sewer system by partially separating the sewers. Partial separation projects are already planned in several areas of the City and in some areas have already been completed. This option looks at additional neighborhoods where the City could improve sewer capacity by redirecting stormwater away from the combined sewers. This option will not meet all overflow reduction requirements, but may be beneficial in some areas to supplement the technologies above.

6. **CSO Ponds with Treatment plus Complete Separation in the Rudisill Subbasin:** This option would eliminate overflows at the Rudisill Boulevard location by completely separating sewers the Rudisill subbasin (K11010), which is the City's largest combined sewer subbasin. Overflows elsewhere in the City would be captured by new, larger sewers and sent to the existing CSO ponds for high-rate treatment, similar to Option 3.

7. **Complete Separation:** This option would eliminate sewer overflows by building separate storm and sanitary sewers in all neighborhoods that now have combined sewers. This option is extremely expensive, disruptive to neighborhoods and increases urban stormwater pollution. However, it was analyzed to estimate the cost and effort required to eliminate combined sewer overflows.

City Utilities evaluated and scored each alternative using a number of criteria. Each alternative included additional options that could be used in various combinations. CSO Ponds with Storage/Treatment received the highest score because of high to medium scores across all criteria and no unfavorable ratings. In scoring alternatives, the City placed greater weight on capital costs, rate impacts, level of treatment and long-term operation and maintenance issues. More detailed scoring and analysis can be found in Chapter 3 of the long-term control plan.

1.5.2 Selection of Recommended Alternate

After the initial scoring of alternatives, the City selected two options for further analysis: Alternative 3, CSO Ponds with Storage/Treatment, and Alternative 4, CSO Ponds with Treatment plus Satellite Treatment at Foster Park. The City evaluated these two using additional performance measures and analysis and chose Alternative 3 for the following reasons:

- Uses the City's existing infrastructure to meet overflow control goals
- Lower operation and maintenance costs
- Lower total cost over time (capital costs plus operations and maintenance)
- Greater water quality benefits due to a higher level of treatment
- Less difficulty in locating facilities

- Fewer demands on the City's operation and maintenance programs

In order to store and treat additional sewage using the CSO ponds, more of the sewage that is currently discharged to the rivers during wet weather must be transported to the ponds. Large interceptor sewers will be built parallel to the St. Mary's and Maumee Rivers. These sewers will "intercept" a large portion of the sewage flow that might otherwise have gone into one of these rivers and carry the flow to the ponds.

In the St. Joseph River basin, some sewage will be stored at several locations during wet weather. Treatment will be provided at one location in the basin. Most of the sewage will go back into the existing sewers to be transported to the treatment plant once the wet weather event is over.

A map illustrating the LTCP selected alternate is shown in Figure 1.5.2.1.

1.5.3 Cost of the Plan

Once a technology alternative was chosen, the next key decision was how to size the new facilities. Larger pipes and treatment facilities will capture more flows, but at increasing costs. The infrastructure should capture as much rainfall as possible without going beyond the point of diminishing returns – the point where additional dollars spent yield fewer and fewer benefits. What the community can afford was another vital consideration.

The City analyzed different sizes for the CSO Ponds and Storage/Treatment Facilities based upon how much sewage would be released each year (volume), how often sewage would overflow (frequency), and the number of days our waterways could be expected to exceed the bacteria standards. This analysis found the point of diminishing returns fell at four overflow activations per year.

The City investigated whether going beyond that point, to three activations per year, would benefit water quality enough to justify the cost. This analysis showed that while annual overflow volume would be reduced by an additional 25 percent, the hours of overflow would be reduced by only two to four hours. The City did not believe that the benefit of two to four hours of overflow reduction was worth the additional $30 million in ratepayer dollars.

The City then investigated whether it made sense to target the St. Joseph River for a higher level of overflow control because of its value to the community as a location for recreational hiking and wildlife habitat. Reducing overflows to the St. Joseph River to one in a typical year would cost an additional $18.5 million. The City determined that the additional investment is worthwhile to protect this valuable community asset.

The plan's costs are shown below for each construction program area:

Collection and Storage Program	
Ponds	$ 53.9 million
Interceptor sewers	$ 72.4 million
Satellite storage/treatment	$ 34.8 million
Treatment Plant	$ 10 million
Combined Sewer Capacity (sewer separation)	$ 68.3 million
Total	$239.4 million

It will be costly for Fort Wayne to implement its plan to comply with federal water quality mandates. But, according to the U.S. EPA, the costs remain affordable for the community.

The City's annual costs for its wastewater system are expected to grow nearly 10.5 percent per year between 2008 and 2014, and by 7 percent per year through 2025. This includes the cost of expanding, improving, operating and maintaining existing wastewater facilities and the cost to build new infrastructure to reduce sewer overflows. The estimated cost to build just the facilities that are needed to meet federal mandates is $239.4 million at the 2005 value of the dollar. Overall, Fort Wayne will need to increase sewer utility revenue by about 380% over the 18 years it will take to implement the plan
Sewer rate increases will be required over time to pay for these clean water improvements. Based on the U.S. EPA's definitions, Fort Wayne will face a medium burden to finance sewer overflow controls with annual residential costs at between one and two percent of Fort Wayne's median household income. The City plans to borrow money for the construction projects that will be required. The City will work to keep rates affordable by seeking low interest rates for project financing, managing construction costs and pursuing state and federal grant funding.

1.5.4 Monitoring and Progress Reports

The City must regularly monitor and report its progress to U.S. EPA and IDEM during the plan's implementation. The City also needs to keep Fort Wayne's public ratepayers informed of where, how and for what benefit their money is being spent.

As U.S. EPA noted in a December 2001 Report to Congress, "it is often difficult, and in some instances impossible, to link environmental conditions or results to a single source of pollution, such as CSOs. In most instances, water quality is impacted by multiple sources, and trends over time reflect the change in loadings on a watershed scale from a variety of environmental

programs." Therefore, it is unlikely that the City will be able to link sewer overflow controls to a specific water quality improvement. However, the City will issue the following reports to help regulatory agencies and the public monitor the program's progress.

Milestone Reports: After all projects in a specific watershed have been completed, the City will prepare and submit a milestone report. The report will include overflow monitoring, rainfall monitoring, river water quality sampling and an evaluation of the effectiveness of the overflow control projects. If projects are not performing as expected, the City will develop a plan to correct or expand them. The City will issue reports for the Maumee, St. Joseph and St. Mary's watersheds within two years of completing all projects in those watersheds.

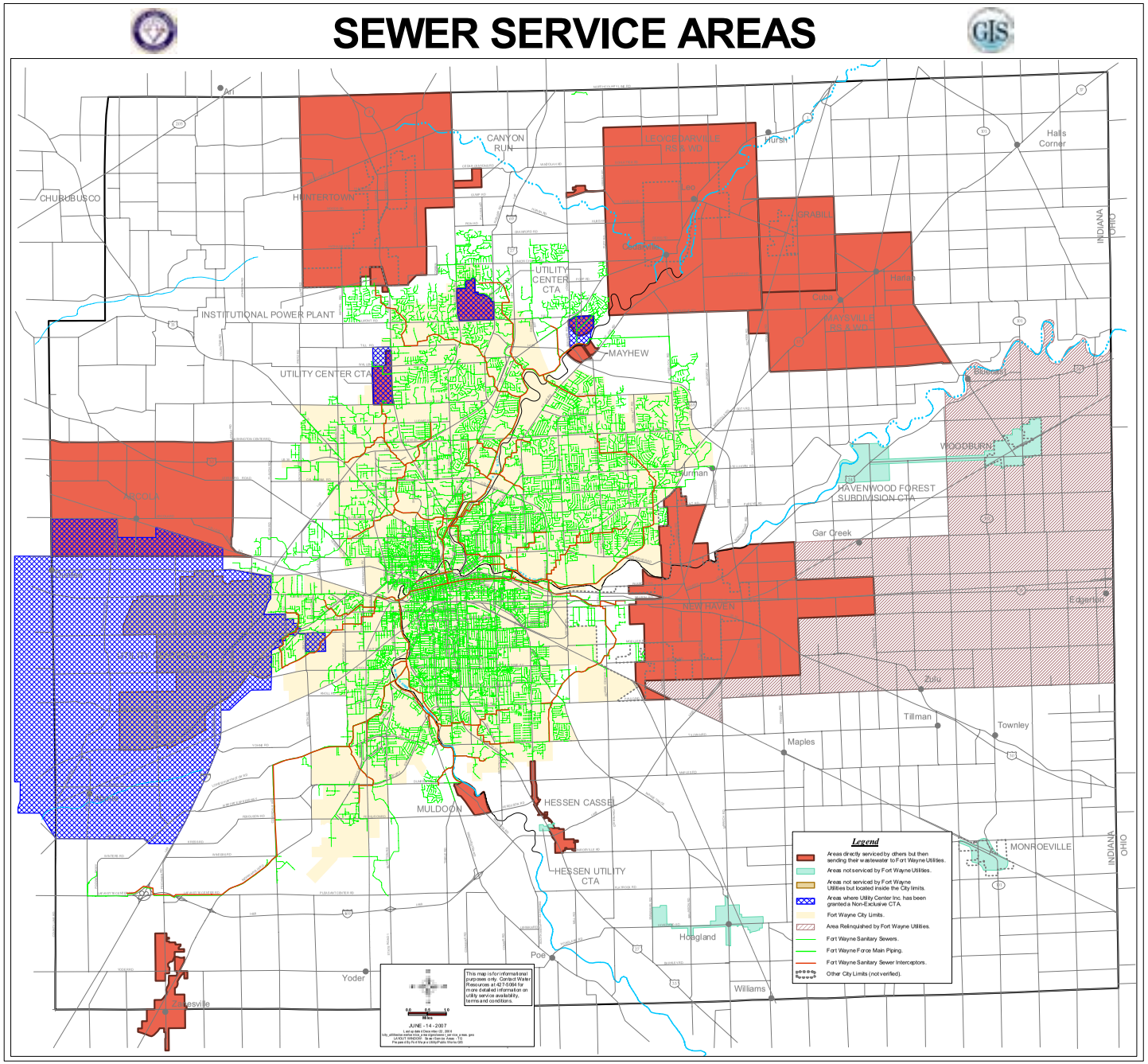
Final Report: Within five years of completing all projects, the City will submit a final report that documents their performance and whether they are meeting state and U.S. EPA requirements. If the report reveals any deficiencies or performance limitations, the City will develop a corrective action plan to ensure that the facilities will meet required performance measures.

Progress Report to Public: The City's public information program will continue to disseminate information on the plan's implementation, program costs and water quality improvements. One of the City's key goals is to ensure that public monies are spent prudently and effectively. The City takes this obligation very seriously, given that ratepayers are funding the projects required under the long-term control plan. Therefore, progress reporting to the public is equivalent to informing an owner on the status of his or her investment.

APPENDIX 1

FIGURES

SEWER SERVICE AREAS



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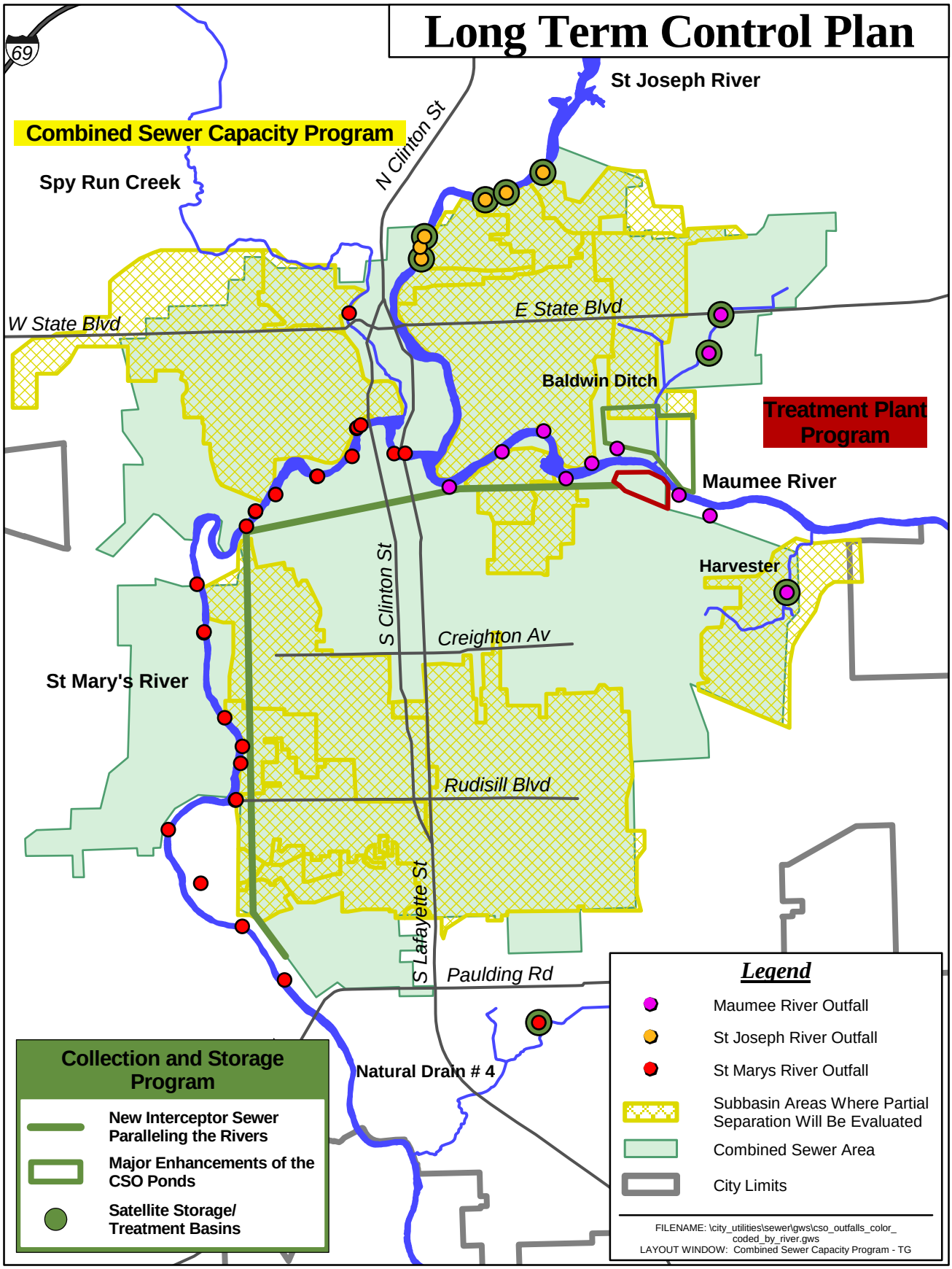

LTCP - CHAPTER 1 FIGURE 1.5.2.1