

# Long Term Control Plan

---

## CHAPTER 5

# Long Term Control Plan – Table of Contents

## TABLE OF CONTENTS

<u>Chapter</u>	<u>Page</u>
<b><u>5.0 USE ATTAINABILITY ANALYSIS</u></b>	<b>5-1</b>
<b>5.1 INTRODUCTION</b>	5-1
5.1.1 PURPOSE AND OBJECTIVES	5-1
5.1.2 GENERAL REGULATORY REQUIREMENTS FOR UAAs	5-3
5.1.3 EPA AND INDIANA POLICIES SUPPORT THE COORDINATION OF LTCP DEVELOPMENT WITH REVIEW OF THE POTENTIAL APPROPRIATENES OF WATER QUALITY STANDARD REVISIONS	5-3
5.1.3.1 EPA Policy and Guidance	5-3
5.1.3.2 State Policy	5-4
<b>5.2 CURRENT RECREATIONAL STANDARDS APPLICABLE TO WATERS         IMPACTED BY THE CITY’S CSOs</b>	5-4
<b>5.3 DETERMINATION OF EXISTING USE</b>	5-5
<b>5.4 ATTAINING THE CURRENT RECREATIONAL DESIGNATED USE IS NOT         FEASIBLE DURING WET WEATHER CONDITIONS</b>	5-6
5.4.1 REASONS FOR INFEASIBILITY OF ATTAINMENT OF FULL-BODY CONTACT RECREATION DURING SPECIFIED WET WEATHER CONDITIONS	5-6

### List of Tables in Chapter 5 Text

None

### List of Figures in Chapter 5 Text

None

### APPENDIX 5 – List of Content

#### Tables

None

#### Figures

None

#### Attachments

None

# Long Term Control Plan – Chapter 5

---

## 5.0 USE ATTAINABILITY ANALYSIS

### 5.1 INTRODUCTION

#### 5.1.1 Purpose and Objectives

The selected CSO Control Measures in the City of Fort Wayne’s Long-Term Control Plan (“LTCP”) will achieve a high level of control for the remaining CSOs in the City’s combined sewer system. When fully implemented, the LTCP will reduce the number of overflow events for the City’s CSO outfalls from as high as 20 to 71 annual events<sup>1</sup> in the “typical year” to a maximum of 4 annual overflow events where treatment capabilities will not be adequate to meet currently applicable water quality criteria for water-based recreation. Moreover, the six CSOs discharging to the St. Joseph River, the City’s highest quality waterway, will see activations reduced to a single annual overflow event in the “typical year.” This represents an exemplary level of control for previously uncontrolled wet weather discharges of combined sewage to the City’s CSO-impacted waterways.

Notwithstanding these impressive control levels, which go beyond the point of diminishing returns from a cost-effectiveness perspective, the CSO Control Measures specified by the LTCP will not, as alluded to above, achieve compliance with Indiana’s water quality standards for water-based recreation under relatively severe wet weather conditions. Thus, the City’s LTCP, though it will achieve much at a capital cost of over \$340 Million and the expenditure of many more millions of dollars in additional annual operations and maintenance expenses and debt service costs, will not be expected to produce water quality under more severe wet weather conditions that is consistent with the Clean Water Act’s water quality goals unless the current water quality standards for recreation can be revised on a site-specific basis to reflect the capabilities of the LTCP. The City’s LTCP is in fact predicated upon a proposed revision in the designated recreational use for the City’s urban waterways to Indiana’s CSO Wet Weather Limited Use subcategory. To obtain approval for this revision in designated recreational use for the City’s CSO-impacted waterways, it will be necessary for the City to establish eligibility for and perform a Use Attainability Analysis (UAA) that justifies the revision consistent with relevant federal and state law.

This Section of the LTCP 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. These waterways (“CSO-impacted Waterways”) specifically include the following:

---

<sup>1</sup> The 19 CSO regulators with highest activation rates in the City’s combined sewer system range from 20 to 71 annual overflow events in the “typical year”.

# Long Term Control Plan – Chapter 5

---

- St. Mary’s River (from its junction with Natural Drain #4 near Tillman Road, to the confluence with St. Joseph River)
- Natural Drain #4 (from CSO Outfall 054 near the intersection of Hollis Lane and Mercer Avenue, to its junction with the St. Mary’s River)
- St. Joseph River (from CSO Outfall 052, located immediately south of Coliseum Blvd., near N. Anthony Boulevard, to the confluence with St. Mary’s River)
- Spy Run Creek (from CSO Outfall 036, located north of W. State Street along Eastbrook/Westbrook Drive, to its junction with the St. Mary’s River south of 4th Street near Lawton Park)
- Baldwin Ditch (from CSO Outfalls 061 and 062 near the intersection of E. State Street and Barnhart Avenue, to its junction with the Maumee River near CSO Ponds 1 and 2)
- Maumee River (from its origin to approximately the boundary between Defiance and Henry counties, Ohio)

For clarity of further reference to these waterbodies, the parenthetically identified reaches represent those portions of the waterbodies which are projected to experience *E. coli* in excess of the bacteriological criteria to protect full-body recreational use solely as a result of uncontrolled CSO discharges which statistically would occur in the “typical year” notwithstanding the full implementation of the City’s LTCP.

As will be explained and supported, Fort Wayne’s draft UAA rests upon the following points that are relevant under applicable law:

- First, the effects of urbanization preclude the attainment of the recreational use after large storm events because of the presence of non-CSO sources of bacteria (including, for example, loadings from upstream sources, wildlife and domestic animals near and in the urban streams) that will prevent attainment of the recreational water quality standard during any substantial wet weather event; and
- Second, substantial and widespread economic and social impacts would be caused by a requirement to implement controls beyond those contained in the City’s LTCP as approved by IDEM and U.S. EPA.

The conclusion of the draft UAA is that the currently designated recreational use is not attainable in the City’s CSO-impacted waterways during and for a short period of time following wet weather events that exceed the high level of CSO control provided for in the LTCP.

# Long Term Control Plan – Chapter 5

---

## 5.1.2 General Regulatory Requirements for UAAs

Federal water quality regulations<sup>2</sup> describe the purpose of a UAA to be as follows: a UAA provides the informational base upon which a State may demonstrate that attaining a designated use in a waterbody is not feasible so as to justify removing the designated use or establishing subcategories of the use which require less stringent criteria. The specific grounds on which the infeasibility of attaining a designated use may be demonstrated include:

- (1) Naturally occurring pollutant concentrations prevent the attainment of the use; or
- (2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or
- (3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
- (4) Dams, diversions, or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in attainment of the use; or
- (5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or
- (6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.

40 CFR § 131.10 (g).

A UAA is defined by federal regulations as “a structured scientific assessment of the factors affecting the attainment of the use, which may include physical, chemical, biological, and economic factors as described in § 131.10(g).”<sup>3</sup>

## 5.1.3 EPA and Indiana Policies Support the Coordination of LTCP Development with Review of the Potential Appropriateness of Water Quality Standard Revisions

### 5.1.3.1 EPA Policy and Guidance

EPA’s Combined Sewer Overflow (CSO) Control Policy<sup>4</sup> states that one of its key elements is the “development of the long-term plan ...[in coordination] with the review and appropriate revision of water quality standards and implementation procedures on CSO-impacted waters to ensure that the long-term controls will be sufficient to meet water quality standards.” As part of

---

<sup>2</sup> See 40 CFR 131.10(g) and 40 CFR 131.10(j)(2).

<sup>3</sup> 40 CFR 131.3(g).

<sup>4</sup> 59 *Federal Register* 18688, April 19, 1994.

# Long Term Control Plan – Chapter 5

---

the analysis, “States should evaluate whether the designated use could be attained if CSO control were implemented.”<sup>5</sup> In 2002, the EPA published further national guidance on coordinating the development of CSO long-term control plans with water quality standards reviews.<sup>6</sup> This guidance recognizes the unique relationship between CSOs, designated uses and water quality standards in CSO-impacted water bodies. In this document, EPA calls for a water quality standards review to be conducted in conjunction with LTCP development and specifies that appropriate and attainable standards should be established for CSO-impacted waters.

## 5.1.3.2 State Policy

Indiana law is reflective of EPA’s regulation and guidance. During its 2005 session, the Indiana legislature enacted P.L. 54-2005, also known as Senate Enrolled Act (SEA) 620. Among other provisions, this legislation establishes:

- A CSO Wet Weather Limited Use subcategory of recreational use for CSO impacted waters with an approved long-term control plan; and
- A requirement for the Water Pollution Control Board to adopt rules to implement the new recreational use subcategory.

Under SEA 620, the CSO wet weather limited use subcategory may be applied to the CSO-impacted waterbodies of a CSO community if: (i) a CSO LTCP has been approved by IDEM and incorporated into the community’s NPDES permit or an order of the IDEM commissioner; (ii) the revision to the designated use pursuant to a UAA is approved by IDEM and EPA in accordance with 40 CFR 131.10, 4 CFR 131.20, and 40 CFR 131.21; and (iii) the approved LTCP has been implemented. The water quality-based requirements for the CSO wet-weather limited use subcategory’s application to a particular waterbody are determined through the approved CSO LTCP.

## 5.2 CURRENT RECREATIONAL STANDARDS APPLICABLE TO WATERS IMPACTED BY THE CITY’S CSOs

All surface waters within Indiana’s portion of the Great Lakes drainage basin, including the receiving waters for the City’s CSOs, are designated for full-body contact recreation by the water quality standards for such waters adopted by the Indiana Water Pollution Control Board. 327 IAC 2-1.5-5(a)(1). The following numeric water quality criteria for *E. coli* are established by these water quality standards to support the designated recreational use during the annual recreational season of April through October:<sup>7</sup>

---

<sup>5</sup> *Id.*, at III.B, paragraph 2

<sup>6</sup> Guidance: Coordinating CSO Long Term Control Planning with Water Quality Standards Reviews; EPA Document #833R01002, July 2001.

<sup>7</sup> 327 IAC 2-1.5-8(e)(2). Indiana’s NPDES rules for discharges to the Great Lakes specify that the *E. coli* criteria should be applied as end-of-pipe effluent limitations. 327 IAC 5-2-11.4(d).

# Long Term Control Plan – Chapter 5

---

- Geometric mean of 125 colony-forming units per 100 milliliters (cfu/100 mL) based upon five equally spaced samples taken in a one-month period.
- Single sample maximum of 235 cfu/100 mL.

These bacteriological water quality criteria are intended to protect full-body immersion contact (such as occurs during swimming and some other water recreational activities) from unreasonable risk of disease. The water quality standards apply these criteria to all waters, whether or not they are officially designated as public swimming areas and whether or not any particular water body is reasonably suited for full-body contact recreation. While appropriate for some waters during certain periods, this designation clearly is not attainable in all waters, under all conditions.

Many Indiana water bodies have not and do not currently meet the *E. coli* criteria specified for full-body contact recreation swimming all the time – especially during and following wet weather events. For example, in its 2006 Water Assessment Report, IDEM listed more than 7,620 miles (67.5% of evaluated stream miles) as not attaining the recreational use due to excessive bacteria levels. Those portions of the St. Mary’s River, St. Joseph River and Maumee River affected by the City’s CSOs are included in this list of non-attaining waterways.

## **5.3 DETERMINATION OF EXISTING USE**

As stated above, the City’s LTCP is predicated on the revision of the currently applicable use designation of full body contact recreation for the City’s CSO-impacted waterways to allow application of Indiana’s CSO Wet Weather Limited Use Subcategory during wet weather conditions exceeding the level of control to be provided through implementation of the LTCP.

Under federal regulations at 40 CFR 131.10(g), a water body’s designated use cannot be removed (or revised to a less protective level) if it is an “existing use.” An “existing use” is defined at 40 CFR 131.3(e) as a “use *actually attained* in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.” (Emphasis added.)

For reasons summarized in the draft UAA, the City has concluded, in accordance with IDEM guidance on existing use determinations,<sup>8</sup> that no existing recreational uses in the City’s CSO-impacted waterways will be removed by the application of the CSO Wet Weather Limited Use Subcategory to those waterways.

---

<sup>8</sup> *Application of Existing Use Concept in Conducting Use Attainability Analyses for Long Term Control Plan Communities for Primary Contact Recreational Uses*, IDEM Nonrule Policy Document No. Water-014, draft June 27, 2007 (“*IDEM Existing Use Guidance*”).

# Long Term Control Plan – Chapter 5

---

## **5.4 ATTAINING THE CURRENT RECREATIONAL DESIGNATED USE IS NOT FEASIBLE DURING WET WEATHER CONDITIONS**

The draft UAA documents and explains why attainment of the current designated use of full-body contract recreation is not feasible in the City's CSO-impacted waters during certain wet weather conditions. More specifically, this designated use cannot be feasibly attained during those wet weather conditions in which untreated CSO discharges would occur after implementation of the City's proposed LTCP. As a consequence, relief from the current designated use and the accompanying *E. coli* water quality criteria is warranted during those wet weather conditions. The City proposes, as a result, that the CSO wet weather limited use subcategory provided under Indiana law be approved under federal and state law for application to the City's CSO-impacted waters during such circumstances. However, even if the CSO wet weather limited use subcategory were not available as a possible designated use refinement, the current designated recreational use can and should be appropriately removed or suspended during the wet weather conditions referenced above and an *ad hoc* alternative use established for those conditions under 40 CFR 131.10(g).

### **5.4.1 Reasons for Infeasibility of Attainment of Full-body Contract Recreation During Specified Wet Weather Conditions**

Revision of the recreational use for the City's CSO-impacted waters during the referenced wet weather conditions and application of the CSO wet weather limited use subcategory is supported based upon the following two factors provided in 40 CFR Sec. 131.10(g):

- Human-caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place.
- Controls more stringent than those required by sections 301(b) and 306 of the Clean Water Act would result in substantial and widespread economic and social impact.

The basis for application of each of these factors and the results of that evaluation are discussed in the draft UAA.