

**Appendix K: Third Public Involvement and Stakeholder Meeting
Agenda and Information Materials**

Agenda for Public Meeting #3, Monday, October 16, 2006
Opportunities to Improve Water Quality Across the ENTIRE Trail Creek Watershed

Who has helped improve water quality since 1993?

Promote agricultural best management practices: wildlife watering areas, grass waterways & filter strips.

Restore ecological integrity through restoration: j-hooks and lunkers.

Diminish priority pollutant loads: storm sewer separation, sanitary sewer extension & CSO disinfection.

Enhance public access & preservation: Hansen Park, Peanut Bridge, Trail Creek Greenways & Karwick Nature Park.

What are concerns of 2006? High levels of **E. coli bacteria; sedimentation; excessive nutrient loading; and hydromodification (hydromodification--changing the natural hydrology of the creek).**

Where are the problem areas? From the Trail Creek headwaters to Lake Michigan: E. coli, sedimentation, nutrient loading and hydromodification are **EVERYWHERE to a certain extent.**

How can we help?

Vision: Through collaborative efforts, we can provide the stewardship and leadership required now in order for future generations to enjoy the natural beauty and prosperity of a clean Trail Creek.

Mission: Citizens of the Trail Creek Watershed will assess water quality issues and develop meaningful implementation strategies targeted to improve the quality of life within the watershed through water quality enhancement and realization of the long term goals with regard to the environmental, recreational and aesthetic use of our Lake Michigan lakefront and Trail Creek.

Stop making things worse

Opportunity: New Development	Opportunity: Planning
Pursue education and outreach to developers and contractors	Support the Countywide Land Development Plan
Support existing programs (MS4) that regulate erosion control and stormwater drainage	Ensure consistency with NIRPC, MS4 & 6217 (Coastal Nonpoint Pollution Control) plans
Promote the use of proven Low Impact Development (LID) methods	Implement countywide stormwater quantity ordinance to minimize wet weather creek flow increases
Encourage on-site infiltration basins and constructed wetlands for stormwater treatment	Create setback standards (buffer zones) for stream bank protection and sediment/nutrient reduction

Reduce existing E. coli pollution, sedimentation & nutrient loading

Opportunity: Human Waste	Opportunity: Animal Waste	Opportunity: Stormwater Drainage	Opportunity: Human Habits
Develop sanitary sewer extension options for high-priority un-sewered urban areas along Trail Creek	Identify sources of livestock waste deposited directly to waterways & begin eliminating this practice	Convert to 2-tier ditch construction to minimize erosion and the transport of sedimentation	Promote lawn fertilization practices that minimize nutrient-laden storm runoff
Conduct public education and outreach on the care and operation of septic systems	Reduce runoff from manure piles and pastures near Trail Creek tributaries	In high priority areas, retrofit existing storm water sewer systems to include water quality features	Modify ditch maintenance procedures to conform with current sediment reduction methods
Support existing programs that identify and eliminate illicit discharges of human waste	Conduct education and outreach to assist farmers with Conservation Management Plans	For row crop fields adjacent to water bodies, seek buffers and Conservation Management Plans	Re-evaluate wintertime salt & sand road applications to reduce salt & sand runoff into Trail Creek
Implement the "Clean Marinas" program in all Trail Creek marinas	Educate public regarding impacts of pet waste	Install a sediment trap in Trail Creek as an interim stop gap measure	Promote the use of rain barrels to capture water for garden use

Goals for E. coli reduction

Preservation

Opportunity: Preservation
Work with existing local groups to preserve high-priority wetland areas that are critical natural resources
Create greenway areas and trails that connect sensitive areas and increase public access
Identify high priority areas for stream bank restoration to preserve the creek's natural hydrograph
Coordinate efforts by stakeholders and communicate local successes

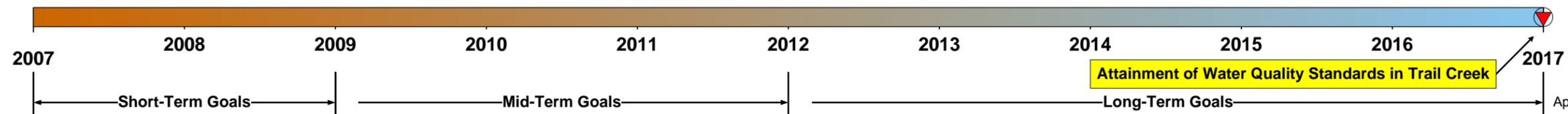
Progress towards reaching these goals will improve Trail Creek water quality by: lowering E. coli. levels; reducing sedimentation; minimizing nutrient loading; and reversing the effects of hydromodification

Why should we help?

IDEM issued a detailed study in 2003 regarding E. coli pollution in the 59 square mile Trail Creek watershed. IDEM concluded that "nonpoint sources will need to be monitored locally for implementation of Best Management Practices or in providing access to watershed grants to assist in reducing nonpoint sources to meet the Load Allocations developed under this TMDL (Total Maximum Daily Load report). In other words, solving the E. coli pollution problem is up to us.

When do we start?

We must start now, with a three-tier level of goal achievement: Short-Term goals in 1-2 years; Mid-Term goals in 5 years; & attainment of Water Quality Standards in 10 years.



1993 Watershed Management Plan Goals

Four goals were identified for the watershed management plan for the stream of Trail Creek. These goals were approved by the Trail Creek Watershed Management Resource Committee and subsequent meetings, which focused on the different goals, were conducted to develop specific objectives in accomplishing each goal.

Goal 1: Reduce potential health hazards due to poor water quality in the stream of Trail Creek.

Objective 1: Diminish priority pollutant loads delivered to the stream of Trail Creek to improve water quality conditions.

- a. Develop a priority pollutant list into three categories: historic, present and stormwater.
- b. Identify areas or sources of pollutants.
- c. Establish target parameters for turbidity, dissolved oxygen, biological oxygen demand, sedimentation rates, and chemical contamination.
- d. Analyze the discharge from each outfall and assess the risk to the stream of Trail Creek.
- e. Educate the public about the consequences of dumping solvent down household or street drains.
- f. Coordinate a "Tox-away" day to collect hazardous household chemicals and educate the public on proper disposal for common household products and nontoxic substitutions.

Objective 2: Encourage proper Stormwater and erosion control management in developing areas, and retrofit developed areas where feasible.

- a. Identify locations for wetland restoration and development within the watershed.
- b. Construct sediment ponds or French drains at Stormwater outfalls to allow pollutants to settle out of the discharge before entering the stream of Trail Creek.
- c. Encourage Michigan City, Pottawattomie Park, the Town of Trail Creek and LaPorte County to adopt local ordinances that support already existing State and Federal laws that regulate wetlands.
- d. Encourage Michigan City, Pottawattomie Park, the Town of Trail Creek and LaPorte County to adopt local ordinances that support existing State and Federal laws that control soil erosion on construction sites.
- e. Encourage Michigan City, Pottawattomie Park, the Town of Trail Creek and LaPorte County to adopt local ordinances that support existing State and Federal laws that require storm water management on commercial, industrial and residential developments.

Objective 3: Secure funding to install sanitary sewers and a collector line so that the Town of Trail Creek and Pottawattomie Park can discharge to the Michigan City Sanitary District. At a minimum, provide service to the homes along the stream of Trail Creek and those residents who are experiencing septic system failures.

Goal 2: Improve aquatic life support.

Objective 1: Promote agricultural best management practices.

- a. Encourage farmers to use integrated crop management practices such as scouting the fields for insects before pesticides are applied and testing the soils to avoid over fertilizing the fields.
- b. Persuade one landowner to participate in the Section 319 grant awarded to the LaPorte County Soil and Water Conservation District for one demonstration project to restrict livestock access to the stream of Trail Creek while providing an alternate water source such as a well or artesian spring.
- c. Coordinate a "Chemical Container Disposal" day to collect for agricultural product containers and educate the agricultural community on the proper storing and application of agricultural products.

Objective 2: Protect and restore the ecological integrity of Trail Creek utilizing natural streambank restoration methods to stabilize eroding banks.

- a. Demonstrate and monitor the effectiveness of the IDNR Division of Fish and Wildlife recommended streambank restoration methods at the eight selected sites.
- b. Develop ordinances for excavating and maintaining legal drains to minimize bank erosion downstream.

Objective 3: Establish a baseline study on the benthic communities that inhabit the stream of Trail Creek.

- a. Involve the local municipal and county schools in obtaining the baseline data.
- b. Use the benthic organism study as an assessment tool for the watershed management plan.

Goal 3: Increase quality/quantity of recreational opportunities to stimulate economic growth.

Objective 1: Prompt the USACE to construct a sediment trap upstream of "E" Street bridge to reduce the occurrence of dredging and prevent clean sediments from being contaminated within the Federal Navigation channel.

- a. Establish a funding source for maintaining the sediment trap.
- b. Identify the type of dewatering structure to be used during the maintenance activity.
- c. Identify a market for the clean sediment.

Objective 2: Coordinate the dredging of the Federal Channel with the adjacent property owners.

- a. Identify an environmentally sound disposal facility to contain the contaminated sediments.

Objective 3: Enhance existing public access to the stream of Trail Creek to discourage trespassing on private property.

- a. Create an inventory of riparian owners along the stream of Trail Creek.
- b. Construct a trail from Hansen Park to Friendship Gardens with various amenities including lights, observation/fishing piers, shelters, outdoor cooking facilities and washrooms.
- c. Develop bicycle, jogging and walking paths along this Michigan City trail to accommodate the various recreational interest. Connect the Michigan City trail to Washington Park and existing bike trails on local streets.

Objective 4: Control debris, litter, and obstructions from entering Trail Creek.

Goal 4: Develop a public awareness of the unique and diverse opportunities that the stream of Trail Creek provides.

Objective 1: Increase awareness of citizens and local decision makers as to the sources and impacts of nonpoint source pollution and the concept of watershed management.

- a. Create a quarterly newsletter explaining the issues and highlighting the progress of the watershed management plan.

Objective 2: Stimulate participation in maintenance and restoration activities within the watershed.

- a. Create a LaPorte County Civilian Conservation Corps that would instill work ethics and teach construction skills in youths while providing environmental experiences.
- b. Initiate an "Adopt a Stream" program.

Objective 3: Cultivate community appreciation for the uniqueness of Trail Creek and its diverse wildlife and plant species.

- a. Develop a visual and oral presentation of the stream of Trail Creek to be presented at schools and various civic organizations and interest groups meetings.
- b. Sponsor educational "Field" days and walks along the stream of Trail Creek.

Agricultural Best Management Practices

Wildlife Watering Area

Problematic (wet) farmland converted to permanent open water ~18" in depth



Grassed Waterway

Problematic surface drainage solved with grassed waterway to drain ~72 acres



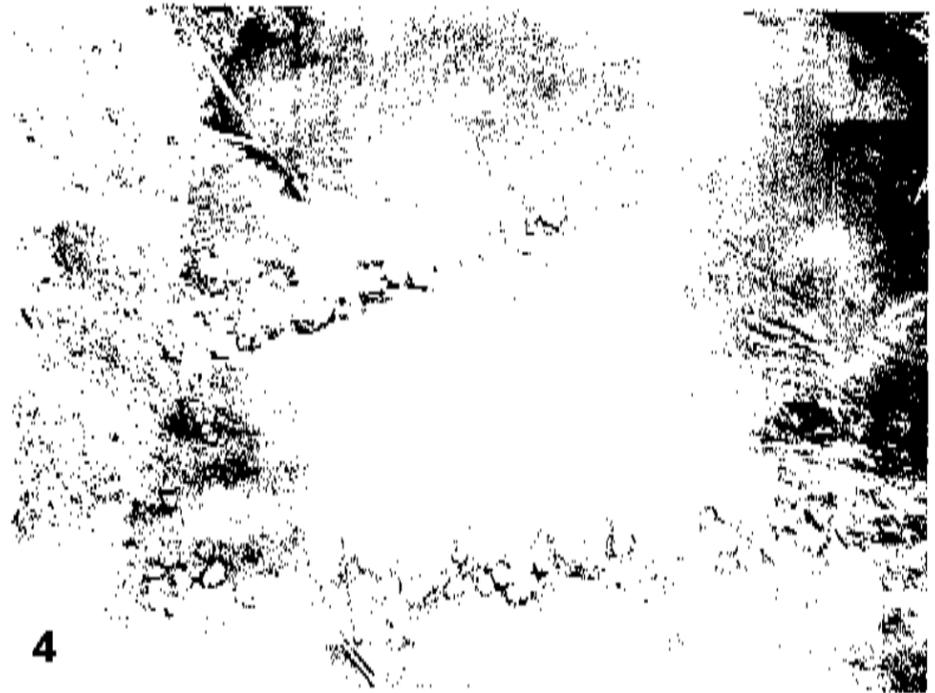
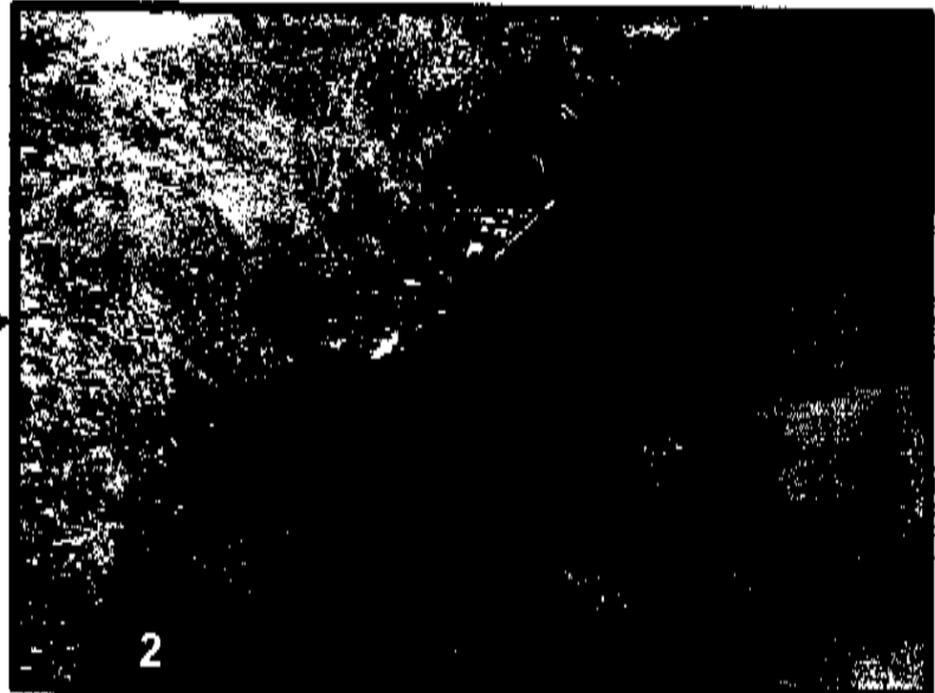
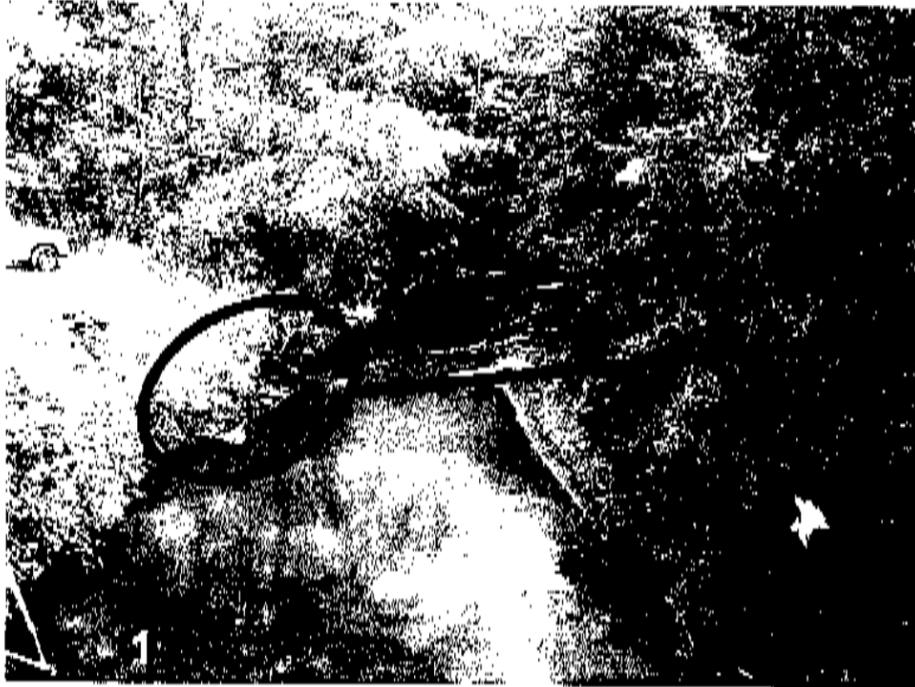
Filter Strips

Buffer zone area between row crops and adjacent roadside drainage ditches

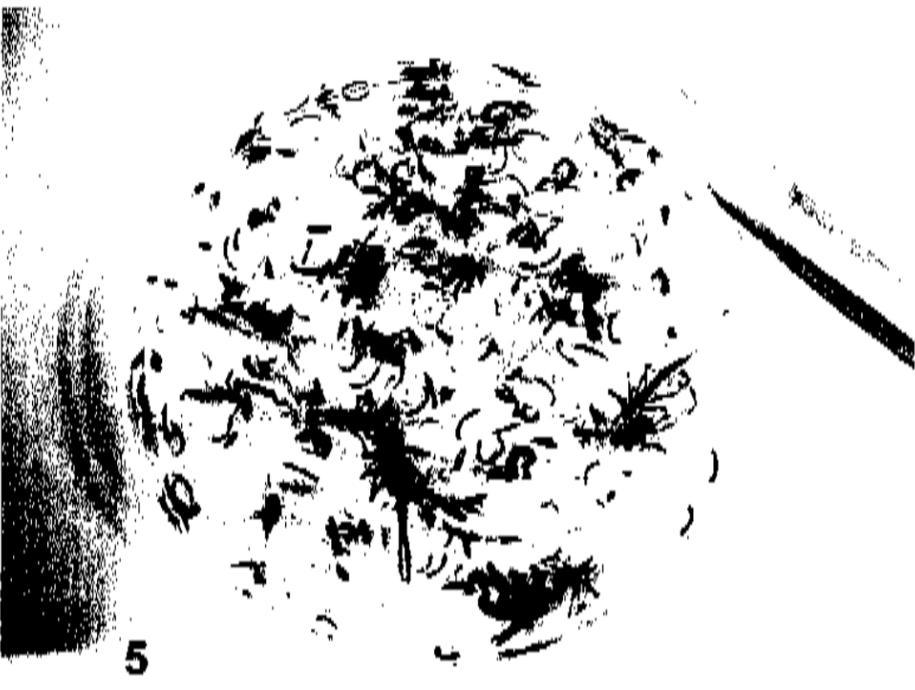


Creek Best Management Practices

Examples of Enhancements within Trail Creek



Results: Improved Ecological Integrity



Diminish E. coli Loading

Do Combined Sewer Overflow discharges from the Michigan City Wastewater Treatment Plant contribute to sustained elevated E. coli levels in Trail Creek?

Not since 1998 when there have been no more than 1 overflow in a given year and beginning on April 1, 2006, any future CSO discharge will be disinfected with chlorine to kill E. coli.

Historical Summary

Progress thru 1983	Progress thru 1990	Progress thru 1996	Progress thru 2003	Progress thru 2006
35% of original combined sewers were separated	A 54" relief sewer was constructed in the city's north end	60% of original combined sewers were separated	91% of original combined sewers were separated	94% of original combined sewers were separated
Sewer system had 18 CSO points into Trail Creek	18 sewer system CSO points REDUCED to only 6	Investment in sewer separation since 1962 was >\$50 mill.	Investment in sewer separation since 1962 was >\$80 mill.	Investment in sewer separation since 1962 was >\$85 mill.
41 million gallons of CSO discharge yearly to Trail Creek	6.15 mill. gal. Storm Retention Basin built at WWTP	All 6 sewer system CSO points were ELIMINATED	From 1990-1997, the Storm Basin CSO rate was 19 events per yr.; from 1998-2003 the Storm Basin CSO rate was 1 per yr.; a 95% REDUCTION	Headworks upgrade achieves 15 MGD wet weather flow
CSO's during rain events VIOLATE the >7.0 mg/l DO criteria in Trail Creek for salmon	Coll. Sys. CSO flow REDUCED by 75%; strength of CSO reduced by 70%	The ONLY CSO point in Michigan City is the Storm Basin overflow; the Storm Basin provides the equivalent of primary & secondary treatment; thus, the only CSO Water Quality impairment is E. Coli	WWTP wet weather flow rating is 15 MGD, but due to equip. wear the max. wet weath. flow is only 13.9 MGD	Storm Basin Disinfection Project leads to ATTAINMENT of acute Water Qual. Standards for CSO
	WWTP CSO flow REDUCED by 95%; strength of CSO reduced by 75%			Watershed approach leads to >500 homes removed from a floodplain; marina, urban & rural BMPs planned for the creek
			For Oct. 2001 CSO, creek DO was 9.6!	For Jan. 2005 CSO, creek DO was 10.6!

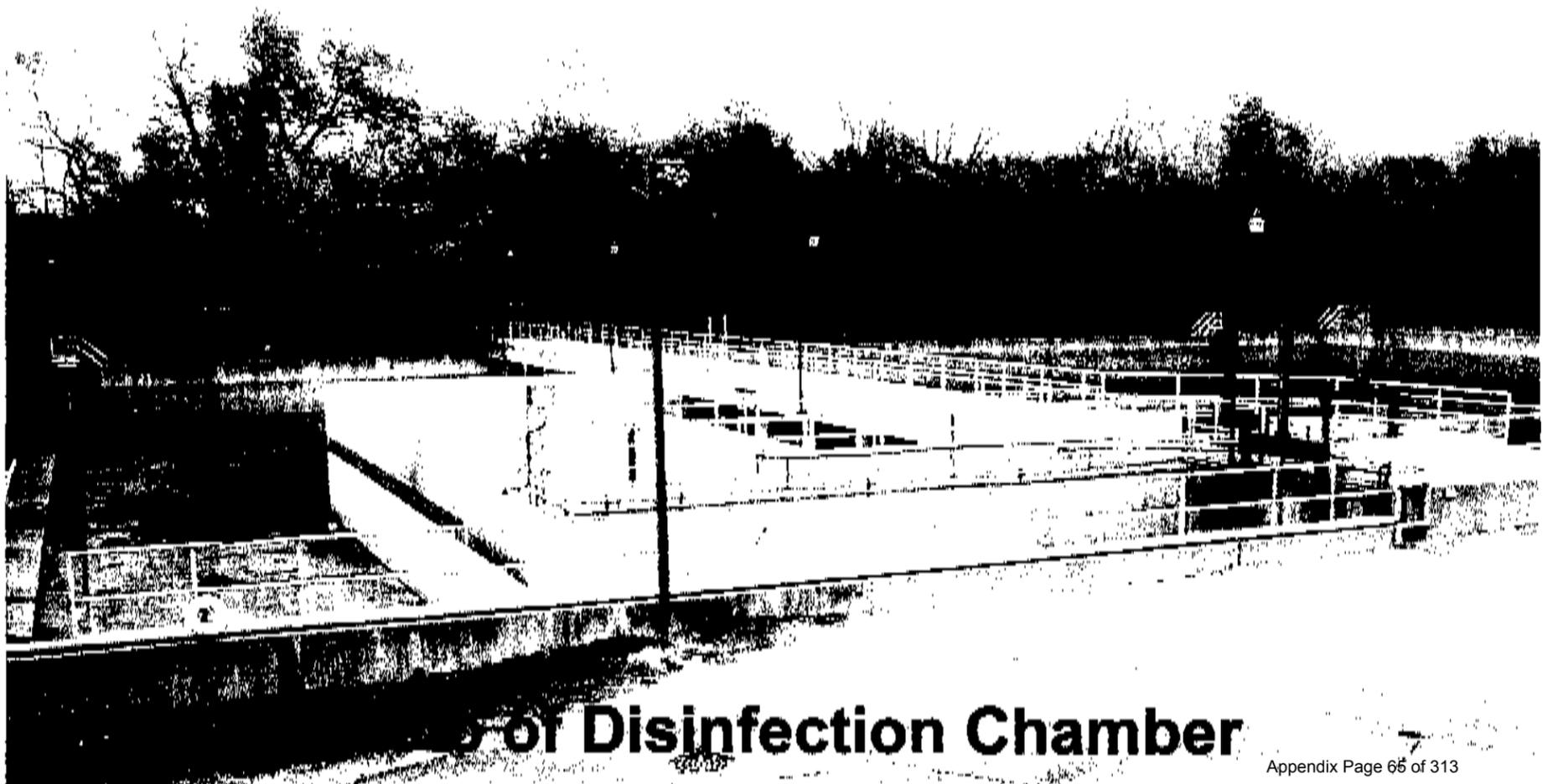
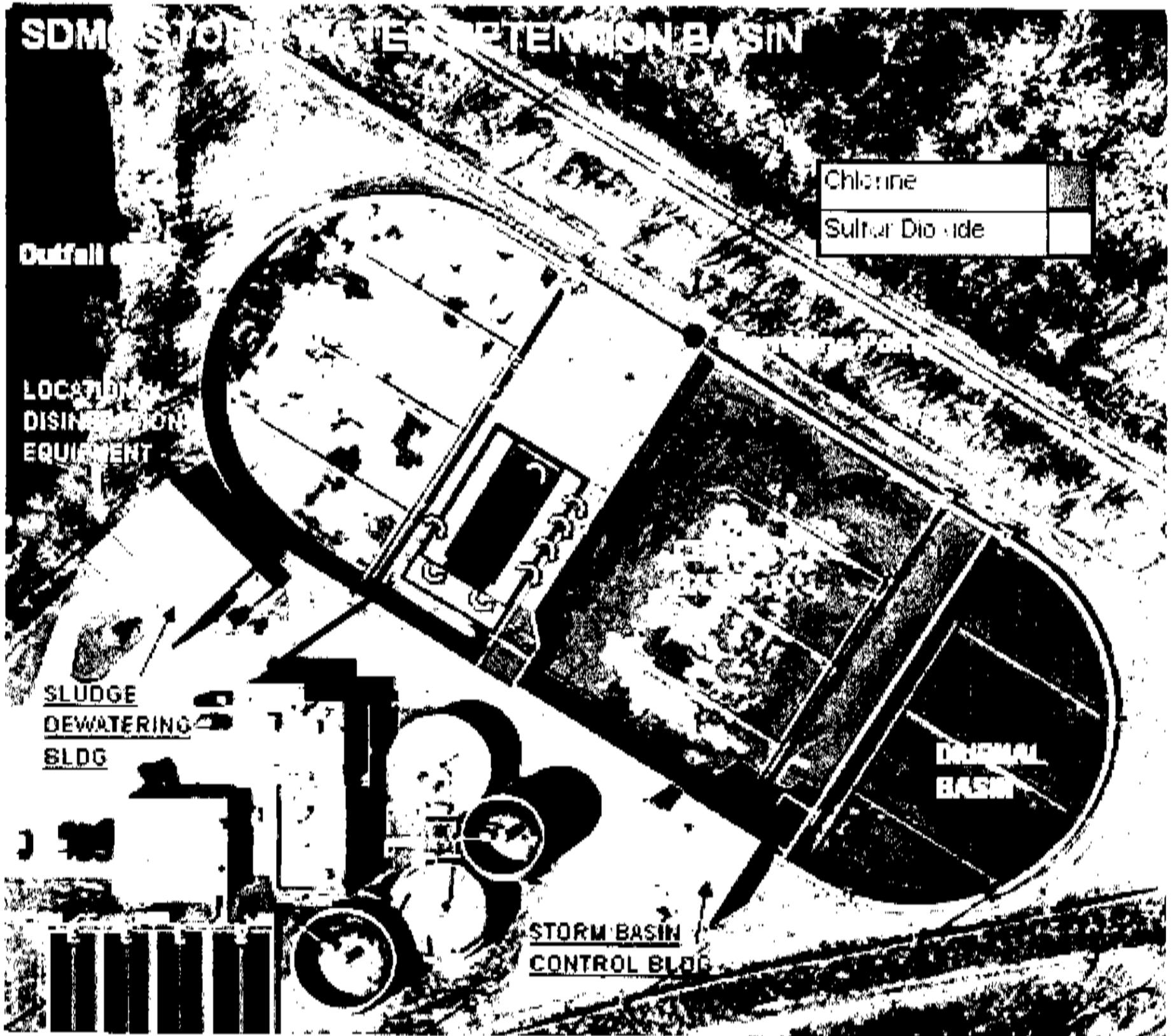
A comprehensive, multi-part strategy for improved stormwater controls at the J.B. Gifford WWTP has led to dramatic success in reducing CSO events in Michigan City as one can see from the following table:

Historical Number of CSO Events per Year

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
47	24	2	32	3	0	19	14	1	0	0	1	1	0	0	1

In 2002, Michigan City's WWTP was awarded the US EPA First Place National Award for best Combined Sewer Overflow Control in the United States.

Storm Basin Disinfection



Public Access & Preservation

Hansen Park

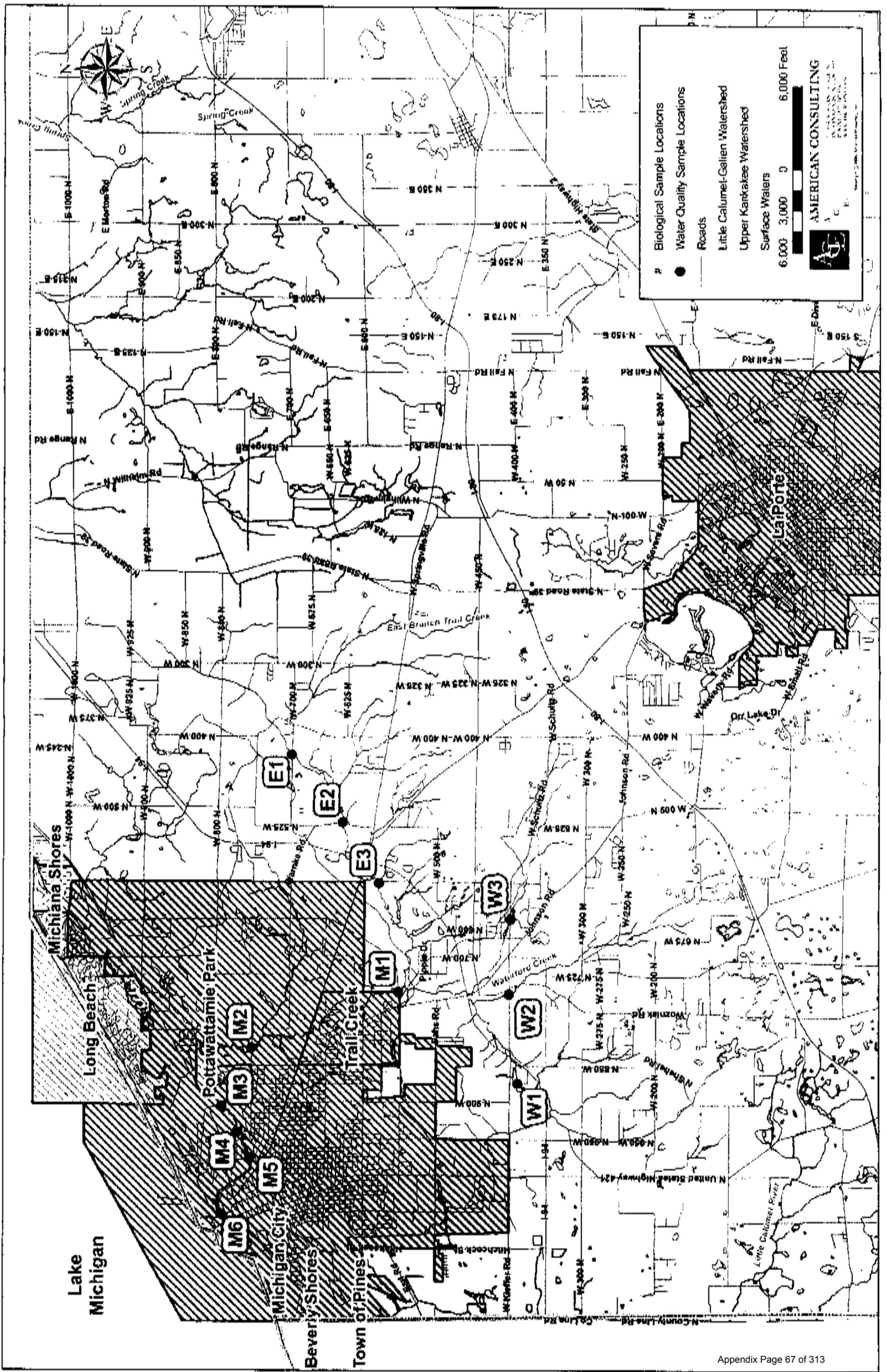


Preservation



**Sebert Forks property at
400 W and 700 N in
Springfield Township.**

**Tamarack tree in
Trail Creek Fen**



P Biological Sample Locations
 ● Water Quality Sample Locations
 — Roads
 Little Calumet-Galien Watershed
 Upper Kankakee Watershed
 Surface Waters

6,000 3,000 0 6,000 Feet

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Pollution Concerns of 2006

E. coli.

The E. coli is a bacteria found in the gut of warm blooded animals and acts to aid in digestion of food. Target Concentrations for E. coli are (125 cfu/100 ml – monthly geometric mean and 235 cfu/100 ml – daily maximum).

Sources

- Permitted point sources
 - J. B Gifford Wastewater Treatment Plant (Michigan City)
 - Friendly Acres Mobile Home Park
 - Autumn Creek Mobile Home Park
- Non-point sources
 - Failing septic systems
 - Illicit discharges
 - Marinas/ boats
 - Livestock and/or pet waste
 - Stormwater Run-off

Sedimentation

Continued dredging of navigable channel

Streambank erosion

Water clarity

Contributes to nutrient loading

No regulatory criteria

Nutrient loading

High levels of nitrogen and phosphorus

Contribute to decreased water quality

Algae and macrophyte growth

No regulatory criteria

Effects on Lake Michigan

Hydro-modification

Sources

- Dams
- Detention basins
- Increased impervious surface

Streambank erosion and stream instability

Alteration of natural water levels

Increased sedimentation

Next Steps

November: Complete Draft Report

December: Final Public Meeting

December 25, 2006: Final Report due to IDEM

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