

5. ENVIRONMENTAL MANAGEMENT

Introduction

Environmental management is described as control and management of human activities designed to minimize negative effects on the environment. Environmental management encompasses such areas as water, air, soils, wetlands and wildlife habitats. It also deals with energy efficiency, recycling, and solid waste. These elements will be described in greater detail in the section of the Assessment Report that follows.

The environment and human activities are greatly interconnected and co-dependent. All major human activities impact soils, water, and wildlife habitats. Pollution, destruction of open spaces and wildlife habitats leave long-lasting, and at times irreversible, marks on the environment. They also contribute to numerous diseases, especially in populations at risk. The task of minimizing these adverse impacts is essential to the preservation and protection of natural resources, public health, and the overall quality of life.

Process

Civic Alliance members reviewed public feedback on community issues and then met with or surveyed a number of key stakeholders in the community. After further research and discussion they decided on the following as key issues for this topic area. City staff provided technical support.

Statement 1

St. Joseph and Elkhart counties have not attained EPA-acceptable standards for ground-level ozone.

Facts and Supporting Information

- In 2004, St. Joseph and Elkhart counties have been identified as “basic” ozone non-attainment counties because the two counties have exceeded federal ozone levels (*EPA*).
- Ozone-non-attainment areas fall into six categories: basic, marginal, moderate, serious, severe, and extreme. This classification is based on the severity of the problem (*EPA*).
- Of 92 Indiana counties, 24 were identified as non-attainment (10 basic and 3 moderate) (*EPA*).
- St. Joseph and Elkhart counties will need to comply with general Clean Air Act requirements by 2009 (*EPA*).
- The South Bend-Mishawaka area is listed as 16th worst for ozone among metropolitan areas with populations between 250,000 and 1 million people (*US Public Interest Research Group. The South Bend Tribune. September 24, 2004*).
- The South Bend-Mishawaka and Benton Harbor-Niles areas have been found to require the most assistance with their air quality (*US Public Interest Research Group. The South Bend Tribune. September 24, 2004*).
- The EPA’s 8-hour ozone national quality standard is 85 parts per billion (ppb) (*EPA*). South Bend has exceeded the 8-hour ozone EPA standard in 2004 and reached 88 ppb (*MACOG*).
- Ozone, particulate matter, carbon monoxide, sulfur dioxide, nitrogen dioxide and lead are six major air pollutants (*EPA*).
- Ozone is formed by nitrogen oxides and volatile organic chemicals primarily emitted by cars, industries, and power plants (*EPA*).
- St. Joseph County does not have vehicle emissions inspection programs to control levels of major vehicle pollutants. Emission testing in St. Joseph County is not required under the Clean Air Act. Clark, Floyd, Lake and Porter are the only Indiana counties with emission testing programs (*IDEM*).
- Power plants contribute 23% of nitrogen oxide and 67% of sulfur dioxide to the atmosphere (*Indiana Public Interest Research Group. The South Bend Tribune. September 24, 2004*).
- Sulfur dioxide emissions from power plants have increased in Indiana by more than 3 % from 2002 and 2003 (*Indiana Public Interest Research Group. The South Bend Tribune. September 24, 2004*).
- The Notre-Dame coal-burning plant is one of the 22 coal-burning power plants in Indiana and some plants in Kentucky that contribute to Indiana’s rank as 4th in the country for mercury emissions and 5th in overall air pollution (*Clear the Air. The South Bend Tribune. September 2, 2004*).
- Once utility companies comply with the nitrogen oxides 75% reduction standard, a significant reduction will occur. Both St. Joseph and Elkhart counties have a high contribution of nitrogen oxides due to cars, trucks, etc. (*MACOG. September 2004 Report*).
- The entire population of the country faces long-term harm from modest air pollution (*Brigham Young University*).

Strengths and Opportunities

- There are federal and state air quality regulations (e.g., Clean Air Act of 1970, Clean Air Ozone Rules of 2004) to control ozone pollution in non-attainment areas.
- EPA publishes a daily Air Quality Index.
- EPA’s Acid Rain Program has reduced emissions from power plants.
- Proposed EPA’s Clean Air Interstate Rule and Utility Mercury Reductions Rule are expected to reduce emissions of sulfur dioxide, nitrogen dioxide, and mercury and bring St. Joseph and Elkhart counties in compliance with the national ozone standards.
- The Clean Air Nonroad Diesel Rule announced in May 2004 places more stringent controls on diesel engines and is likely to reduce PM 2.5 levels.
- Stricter federal and state regulations on coal-burning are forthcoming.
- MACOG raises awareness about ozone issues through various programs, television commercials, videos and publications.

Benefits of Addressing the Issue

- Decreased health risks (heart and lung disease, especially among the elderly, young children, and people with breathing problems and children and adults who are active outdoors; premature death) associated with ozone.
- Children breathing cleaner air are more likely than children in more polluted areas to grow up with strong lungs.
- Less damage to plants, trees, visibility and property.
- Reduced developmental problems in children due to mercury exposure.
- The City will be better positioned to attract businesses and industrial development.

Stakeholders

The following stakeholders were consulted:

- Michiana Watershed
- St. Joseph Valley Greens
- St. Joseph County Health Department
- Elkhart County Health Department
- Berrien County Health Department
- Indiana Department of Environmental Management
- SB-Elkhart Audubon Society
- MACOG

General stakeholder reaction:

The majority of stakeholders interviewed expressed concerns about the air quality in St. Joseph County and its impact on public health. They focused on the recent ozone non-attainment due to industrial and car emissions, and coal-burning power plants.

Statement 2

South Bend has a number of abandoned, inactive, or underutilized parcels of real estate of various sizes whose marketability and development are hindered by their real or perceived contamination.

Facts and Supporting Information

- There are 223 potential brownfields in South Bend with 72 of them (32%) measuring less than one acre (*City of South Bend brownfields database*).
- Potential brownfields of various sizes comprise 3,069.72 acres or 12% of the city area (25,642.101 acres) (*City of South Bend brownfields database*).
- Fort Wayne has 78 identified brownfields, 5 of which are an acre or less (6%). Fort Wayne's brownfields of all sizes are 2,324 acres or 4% of the city area (58,980 acres) (*City of Fort Wayne*). No comparative data could be obtained from Muncie, Evansville & Lafayette as these cities did not have a brownfields inventory completed.
- Brownfield redevelopment poses challenges because of regulatory and liability issues; the need for demolition and cleanup funds; environmental assessments and regulations; cleanup standards; land assembly; market and neighborhood conditions; community concerns and insufficient time (*Governing Magazine, December 2000*).
- Brownfields undermine the economic competitiveness of a region by damaging its image and making it less attractive to investors (*US Economic Development Administration*).

Strengths and Opportunities

- Brownfields can compete with greenfield sites because they generally have good infrastructure and good location near transportation networks.
- There is public support of brownfields redevelopment.
- The City of South Bend has an internal, well-established brownfields team created to study and address brownfields-related issues in the City.
- Brownfields serve as a catalyst for redevelopment.
- The South Bend Mayor's Smart Growth and Clean City Initiatives promote brownfields redevelopment within the City.
- South Bend's Commercial Corridor Program complements brownfields redevelopment programs.
- South Bend's brownfields inventory is complete, and a database of brownfield properties is available.
- The City applies for various funding and provides leverage to assess and remediate brownfield sites.
- City's expertise and oversight in development and implementation of brownfield projects.
- EPA's procedures and policies are more user-friendly than in previous years.
- More attention is given to environmental conditions nationwide.
- Overall availability of federal and state funds, including voluntary remediation programs offered by IDEM.
- Strong cooperation among various local, state and federal agencies, including the City of South Bend, Indiana Department of Environmental Management, EPA, HUD, Department of Agriculture and Department of Transportation.
- Fredrickson Park, Oliver Plow, and Studebaker Corridor redevelopment.

Benefits of Addressing the Issue

- Reduced harm to the environment and human health due to soil and groundwater pollution.
- More viable neighborhoods and commercial corridors.
- Maximized use of commercial and industrial land as well as infrastructure.
- Expanded local tax and employment bases.
- Improved values of adjacent properties.
- Greater infill opportunities; discouragement of sprawl and suburbanization.

- Reduced crime and vandalism.
- Reduction of abandoned and unsafe buildings.
- Improved image of the City as an attractive place to live and work.

Stakeholders

The following stakeholders were consulted:

- Indiana Department of Environmental Management
- St. Joseph County Health Department
- Berrien County Health Department
- Elkhart County Health Department
- St. Joseph County Soil and Water Conservation District
- City of South Bend Community and Economic Development Department
- South Bend Public Works

General stakeholder reaction:

The majority of the stakeholders who participated in stakeholder discussions named the presence of brownfields as an issue that needs to be given high priority.

Some stakeholders specifically mentioned that one of the barriers to eliminating brownfield properties in South Bend is overcoming the challenge associated with smaller (less than an acre) sites, such as former drycleaners and gas stations. These sites tend to be concentrated along South Bend's commercial corridors.

Statement 3

E. coli, polychlorinated biphenyls (PCBs), and mercury impair the use of the St. Joseph River.

Facts and Supporting Information

- All 11 species of fish in the Fish Consumption Report contain polychlorinated biphenyls (PCBs), and 3 contain mercury (*2003 Elkhart-South Bend Fish Community Monitoring Report*).
- EPA and IDEM publish a Fish Consumption Advisory due to PCBs and mercury issues in fish tissue (*South Bend Department of Public Works*).
- According to the 2003 Elkhart-South Bend Fish Community Monitoring Report, “Urban impacts, not available habitat, are probably the biggest influence on fish community condition in the River.” (*2003 South Bend - Elkhart Fish Community Monitoring Report*).
- The St. Joseph River is on the List of Impaired Bodies for E. coli levels by the Michigan Department of Environmental Quality (MDEQ) and the Indiana Department of Environmental Management (IDEM). IDEM has the River listed from the Michigan-Indiana state line in Elkhart County to the Michigan-Indiana state line in St. Joseph County. MDEQ has the River listed from the Lake Michigan lake confluence in Morrison Channel upstream to the Michigan-Indiana state line (*2003 IDEM Total Maximum Daily Load Report*).
- Indiana In-stream Water Quality Standards for E. coli are 125 colonies per 100 ml as a geometric mean based on not less than 5 samples equally spaced over a 30-day period and 235 colonies per 100 ml in any one sample in a 30-day period (*Indiana Administrative Code Title 327*).
- E. coli is small bacteria that come from the intestinal tract of warm-blooded animals. E. coli bacteria live naturally in human bodies, and most of them are harmless. The bacteria can enter through skin contact, contaminated fish, or ingestion and can cause severe sickness (EPA). E. coli levels are significantly higher after a rainfall as rain washes E. coli from polluting sources such as agriculture, and the collection system of sewage plants (EPA).
- Studies show that during drier weather, the pollution load to the River has decreased over time (*South Bend Department of Public Works*).
- The sources of E. coli in the St. Joseph River have been found to be from point and non-point sources. Point sources include combined sewer overflows (CSOs) and storm water pipe discharges. Non-point sources include agricultural inputs, failing septic systems, wildlife, and storm water runoff (*2003 IDEM Total Maximum Daily Load Report*).
- 12 out of 18 sites sampled for E. coli during recreational and non-recreational seasons by the Cities of South Bend, Mishawaka, and Elkhart violated the single day standard for E. coli. IDEM’s samples showed similar results (*2003 IDEM Total Maximum Daily Load Report*).
- The St. Joseph River’s eight tributaries (Little Elkhart River, Pine Creek, Christina Creek, Elkhart River, Baugo Creek, Eller Ditch, Willow Creek and Juday Creek) can contribute to its contamination (*2003 IDEM Total Maximum Daily Load Report*).
- 5 out of 14 municipalities within the St. Joseph River Watershed have CSOs. South Bend has 35 CSOs, Elkhart has 22 CSOs, Mishawaka has 19 CSOs, Goshen has 6 CSOs and Wakarusa has 6 CSOs. The total number of CSOs in the Watershed is 88 (*2003 IDEM Total Maximum Daily Load Report*).
- 88 CSOs located along the River are considered the main source of E. coli (*2003 IDEM Total Maximum Daily Load Report*).
- CSO separation in South Bend would be very costly (\$600 million), and it is not believed to be able to resolve the problem completely (*South Bend Department of Public Works*).
- PCBs are produced by commercial manufacturing, use, storage and disposal. In the environment, PCBs have been detected in soil, surface water, plants, sediment and animal tissue from past releases. They are accumulated by aquatic organisms very rapidly. They have been classified as probable human carcinogens (EPA).
- Mercury, caused by coal-burning plants and illicit disposal of hazardous waste, stays in the environment for a long time and is difficult to clean (EPA).

Strengths and Opportunities:

- Active boating/kayaking organizations and activities.

- Busy and clean riverwalk with restaurants and stores for a large number of people.
- Beauty of the River and its recreational and tourist potential (e.g., East Race).
- The River is on the top 10 rivers for fishing, and it draws fishermen from other regions in the country.
- City of South Bend's CSO Notification Program.
- City ordinance requires that storm and sanitary sewers be separated for any new development.
- Cities of Mishawaka and Elkhart completed CSO Long-Term Control Plans.
- City of South Bend's CSO Long Term Control Plan was submitted to IDEM in December 2004.
- Computer model to characterize the level of E. coli.
- City of South Bend CSO Control Program, including wet weather programs since 1994.
- Advisory Committee for Combined Sewer Overflow and Storm Water Management is working to raise awareness about CSOs and to solicit public input.
- MDEQ and IDEM completed Total Maximum Daily Load studies on all listed segments of the River to identify sources and acceptable levels of E. coli.
- Regional collaboration between South Bend and Elkhart on biological monitoring strategy.
- St. Joseph River fish community with "good to fair" health.
- The St. Joseph River flows fast and rids itself of some pollutants.

Benefits of Addressing the Issue

- Reduced health risks in humans and fish due to E. coli and chemicals found in the St. Joseph River.
- Bigger desire to utilize the St. Joseph River for recreation and fishing.
- Stronger business development.
- Greater opportunities to capitalize on a major waterway in South Bend as a source of commercial and recreational utilization and enjoyment.

Stakeholders

The following stakeholders were consulted:

- Michiana Watershed
- St. Joseph Valley Greens
- Indiana Department of Environmental Management
- St. Joseph County Health Department
- Berrien County Health Department
- Elkhart County Health Department
- City of Elkhart Public Works & Utilities
- Olympic Committee
- St. Joseph County Soil and Water Conservation District
- St. Joseph County Parks Department
- South Bend-Elkhart Audubon Society
- South Bend Parks Department
- Sierra Club
- The Troyer Group
- City of South Bend Community and Economic Development Department
- South Bend Department of Public Works

- MACOG
- St. Joseph County Solid Waste Management
- South Bend Common Council

General stakeholder reaction:

All of the stakeholders stressed that the St. Joseph River is a great asset in South Bend, but it is polluted with E. coli, PCBs, and mercury. They further stated that the problem is aggravated by combined sewer overflows.

Some stakeholders remarked that river pollution leads to the impression that the St. Joseph River is not a good place to swim or fish.

An Olympic Committee representative expressed surprise at the lack of kayaking and canoeing clubs because South Bend has a resource such as East Race.

Statement 4

There is improper disposal of some household hazardous waste in South Bend.

Facts and Supporting Information

- Improper disposal (i.e., illegal dumping) is the disposal of waste in undesignated areas. It is considered one of the most common, damaging environmental activities. It is a major problem that raises significant concerns with regard to soil and groundwater contamination, safety, property values, and quality of life in our communities (EPA).
- Improper disposal of household hazardous wastes (HHW) can include pouring them down the drain, on the ground, into storm sewers, or in some cases putting them out with the trash. Hazardous chemicals contaminate soil and leach into groundwater when disposed of improperly. Flammable or toxic vapors and fumes accumulate in sewers and manholes and pose risks to sanitation workers as well as fire and explosion risks (EPA).
- Household hazardous waste is defined as a subset of solid waste characterized by ignitability (ease with which it catches fire), by corrosiveness (its tendency to cause rapid corrosion), by toxicity (how poisonous it is), by reactivity (its tendency for rapid and dangerous chemical reactions, such as an explosion), or by explicit listing of a substance in the federal code (EPA).
- Household hazardous waste includes electronics (e.g., monitors, televisions, printers, and audio equipment), batteries, pesticides, car maintenance products, paints, oils, cleaning and petroleum products and other chemicals. It contains such harmful chemicals as lead, mercury, and cadmium (EPA).
- The average home typically accumulates as much as 100 pounds of HHW per year (EPA).
- The disposal of large-size items (e.g., computers, television sets) at the Mishawaka facility costs \$12 per item; tires are \$1 apiece. The disposal of small-size items (e.g., cell phones, batteries) is free (*St. Joseph County Solid Waste Management District*).

Strengths and Opportunities

- The Solid Waste Management District's Household Hazardous Waste Program that promotes a safe alternative to illegal disposal, educates the public about household hazardous wastes primarily through the District's website and hazardous household waste brochure, and offers safe disposal options.
- Free monthly, special solid waste (excluding hazardous waste) pickups by the Bureau of Solid Waste.
- Hazardous waste disposal facility in Mishawaka. It is a countywide facility available to all St. Joseph County residents.
- South Bend Refuse Ordinance provides regulations regarding proper disposal of waste.
- Knowledge/expertise of the City of South Bend and St. Joseph County.

Benefits of Addressing the Issue

- Decreased environmental pollution and health risks.
- Illegal dumping will be minimized.
- Fewer risks to public health and safety as well as to natural resources (soil, groundwater, surface water and air).
- Fewer costly cleanups.
- Improved morale of neighborhoods.
- Increased real estate values, property resale, and interest in surrounding properties from new residents and developers.

Stakeholders

The following stakeholders were consulted:

- St. Joseph County Solid Waste Management District
- IDEM
- City of South Bend Department of Public Works

General stakeholder reaction:

Illegal dumping of household hazardous waste was identified as a big problem. Some stakeholders felt that it is due to the lack of a hazardous waste disposal facility in South Bend, as well as a lack of education and awareness/promotion programs.

They also stated that illegal dumping occurs because some South Bend residents may be reluctant to travel to Mishawaka and pay the disposal fee, and that another facility is needed in South Bend to provide better accessibility.

Statement 5

Although the quality and quantity of the drinking water in South Bend is good, careful and diligent management of drinking water will be required in the future.

Facts and Supporting Information

- Water pollution has been named as the main problem nationwide (mean priority rating of 8.4 on a scale of 1 to 10) by 1,005 adults (age 18+) surveyed via a telephone interview aimed to identify public attitudes concerning the priority of various environmental problems in the country (*Wirthlin Worldwide Environmental Report. November 2000*).
- Drinking water has a direct impact on human health and requires constant management and monitoring to ensure that a safe and adequate supply of water is available for the future (*EPA*).
- Future economic and residential growth as well as increasing use per capita demands larger water supplies (*EPA*).
- Sources of drinking water are susceptible to numerous chemical contaminants and biological pollutants. Chemical contaminants include: pesticides, fertilizers, mercury, lead, petroleum products, and industrial solvents. Biological pollutants include various bacteria and viruses (*EPA*).
- The South Bend area has one big water aquifer and one smaller one (St. Joseph & Hilltop, respectively) (*South Bend Department of Public Works*).
- South Bend has an ample supply of drinking water (*South Bend Department of Public Works*).
- Increased pressure for greater water quality standards and flavor due to more stringent EPA and state regulations.
- Aging water lines in South Bend tend to rupture, especially in the winter. Some lines are 50-60 years old. Water lines are costly to replace (*The South Bend Tribune. September 28, 2004*).
- Difficulty concentrating development where big water mains are available (e.g., downtown, Studebaker Corridor) (*South Bend Department of Public Works*).

Strengths and Opportunities

- St. Joseph Basin has abundant groundwater resources; it has the fourth largest groundwater supply in the nation.
- Water Works average daily water production is well below existing capacity (23 mln. gallons vs. 60 mln. gallons).
- South Bend Water Works is in compliance with the Safe Water Drinking Act.
- South Bend is in compliance with the EPA's lead and copper rules.
- South Bend has been given the highest rating for lead and copper.
- Recent upgrades of the Edison Filtration and Wastewater Treatment Plants.
- Water treatment facilities are fully computerized.
- South Bend Water Works implements the Wellhead Protection Program (per Wellhead Protection Ordinance) to protect the area's groundwater supplies and ensure a high quality of drinking water.
- South Bend Water Works Master Plan provides guidance for accommodation of future growth.
- EPA produces annual Drinking Water Consumer Confidence reports.

Benefits of Addressing the Issue

- Water quality will remain as good as it is today.
- Reduced risks of water contamination.
- Decreased health concerns.
- Water lines will be upgraded.
- Water treatment/filtration facilities will continue to be improved.

Stakeholders

The following stakeholders were consulted:

- IDEM
- South Bend Department of Public Works
- St. Joseph County Solid Waste Management

General stakeholder reaction:

Most stakeholders acknowledged that the South Bend drinking water is of high quality.

However, some stakeholders noted that there is a need to continue protecting our groundwater and exercising good drinking water management practices, given the potential growth of the City and stricter federal and state government regulations.