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Jurisdiction

The jurisdiction of the interview is the City of Elkhart, Indiana. It is located in northern Elkhart County in the Middle River Valley Segment. The main stem of the St. Joseph River flows through the city, and Elkhart River and Christiana Creek discharge into the St. Joseph River within the city limits.

Projects/beneficial watershed features

According to the Stream Reach Characterization completed by the City of Elkhart, and required of all Indiana municipalities with combined sewer overflows (CSOs), nutrients, such as nitrate and ammonia, are not a concern in the river. It is mandated by the state that no new combined sewers may be constructed. New developments can have sanitary sewers extended to them from the combined system. However, city and county policy calls for all stormwater to be retained on-site. It is expected that the NPDES PII regulations will require these policies to become ordinances. Therefore, increasing imperviousness in the watershed is not causing an increase in stormwater loads to the surface waters.

Methods to reduce impervious surfaces and clean stormwater before it reaches an outfall are being considered as a part of the NPDES PII requirements. Pervious pavement is typically not feasible for parking lots and roads where snow plowing is needed. However, areas of parking lots where snow is stored could potentially use pervious pavement, allowing infiltration of snow melt waters. A pilot project to test stormceptors was recently initiated in Downtown Elkhart. Road and utility construction is ongoing in this area. Therefore, it provided an opportunity to install a unit in a catch basin. The ability of the unit to remove oils and floatables from stormwater will be tested. No sampling has occurred yet, as the unit has been in place for a few months and construction is still ongoing Downtown.

The Cities of Elkhart, Mishawaka and South Bend are working together through a 205(j) grant to develop a water quality model for the river. The model is meant to predict *E. coli* concentrations following various reduction scenarios. The first phase is completed and included extensive sampling of the St. Joseph River and its tributaries. The model is currently being calibrated. Phase 2 will be funded by a 104(b) grant and will involve further programming to yield a user-friendly version of the model. The model will be made available to municipalities and Elkhart and St. Joseph Counties. The goal is to eliminate exceedances of the *E. coli* criteria in surface waters. To date, there has been no documentation of illness from exposure to pathogens in the St. Joseph River.

It was noted that the St. Joseph County Surveyor's Office is cognizant of the importance of habitat protection when maintaining drains. Many habitat enhancement projects, including the installation of lunker boxes, have occurred in Juday Creek in St. Joseph County. Special attention has been paid to Juday Creek, in part due to the way drainage funds are utilized in St. Joseph County. Tax funds for drainage projects are spent within the watershed they were collected, and are based on property taxes. The Juday Creek Subwatershed includes affluent neighborhoods where the property values are greatest. This results in more available funds to spend in Juday Creek. Conversely, in Elkhart County, all drainage funds are placed in a single fund to be used anywhere in the county where projects are needed.

The St. Joe River Basin Commission, of which the City of Elkhart participates, has been discussing educational opportunities with residential pesticide and fertilizer applicators. Riparian landowners purchase such property due to the fact that they like living on the river and due to the aesthetics. Therefore, education

of the landowners and applicators they hire may aid in reducing the amount of fertilizers and herbicides that can get into surface waters. The commission produced a video on proper septic system maintenance and distributed it to title companies, who then provided them to individuals purchasing homes with septic systems. This was seen as a creative avenue to distribute information to the appropriate audience. It had been noted that some homeowners may not even be aware that they have septic systems. Service organizations, neighborhood organizations and builders were also noted as audiences or groups to convey watershed stewardship information through.

Challenges in the watershed

Sedimentation, habitat loss and CSOs are the primary concerns in the jurisdiction. Exotic species, such as purple loosestrife, and hydraulic modification are also concerns. Designated drains are dredged in a way that disrupts aquatic habitat and removes vegetation from streambanks. Streambank erosion following dredging operations has been noted as a concern. Yellow Creek was recently dredged extensively, resulting in the destruction of high quality habitat. Permits from the Army Corps of Engineers and the Indiana Department of Natural Resources are required for dredging operations. However, none were obtained for the Yellow Creek project. It was noted that many drainage boards lack representation from habitat preservation or fishing interests, thus the primary goals is to move waters off of agricultural lands as quickly as possible. It was noted that education of surveyors regarding the importance of healthy habitats should be a component of the plan.

An additional goal of the project should be to break down barriers between agricultural and urban interests. There is typically a conflict between the two entities in which each sees the other as a source of impairments to the watershed. There is also a major difference in the ways that projects are completed. Municipalities are typically required to perform certain activities by unfunded mandates. Conversely, agricultural land owners are encouraged, but not required, to implement certain practices, and fund are usually available to assist with those practices. There is some resistance to changing practices, and land rights issues are very strong in the county. It was noted that most agricultural producers follow the proper procedures and are not negligent of environmental protection. However, some may not see a problem with plowing to the edge of a stream or allowing cattle into streams. Downstream impacts from any type of land use are likely unknown to or not understood by many landowners.

Municipalities having CSOs are required by the state to develop Stream Reach Characterizations in order to determine water quality problems within each jurisdiction. Goshen, Elkhart, Mishawaka and South Bend have all submitted those reports. In Elkhart, ten years worth of data were used to assess water quality in the Elkhart River and in the St. Joseph River. The only parameter consistently over the standard was *E. coli*, which was noted to exceed the standards in the St. Joseph River only during rain events. However, it was noted to be high in the Elkhart River during dry weather, as well. This indicates that there are other sources of *E. coli* than CSOs. A Long Term Plan for Controlling Discharges from CSOs lays out recommendations based on the Stream Reach Characterization. For large communities, such as Elkhart, complete separation of sanitary and storm sewers may cost as much as $245 million. A possible solution to overflows is to construct large underground reservoirs to store excess water and slowly release it to the wastewater treatment plant as it can treat the water. Other cities, such as Mishawaka, having fewer overflow outlets, may work to upgrade their wastewater treatment plants to accommodate stormwater volumes. Goshen will work to construct larger sewers which can convey the stormwater to the wastewater treatment plant.

The Elkhart River carries a large sediment load and is a major contributor of sediments to the St. Joseph River, where sediments are deposited behind dams. However, it is only listed on the 303(d) list for *E. coli*, mercury and PCBs. One source of sedimentation is bank erosion along residential shorelines. Homeowners

have been found to dump grass clippings and leaves along the banks, which prevent vegetative growth and contribute nutrients. This has also contributed to bank stabilization problems.

Navigation is threatened in the Little Elkhart River. It was noted that providing navigation by clearing snags and branches must be done carefully so that habitat is not diminished. Some tributaries, such as Yellow Creek and Cobus Creek, have fences across the waters. In Yellow Creek, cattle access also occurs, as the watershed is approximately 90% agricultural. Indiana law grants ownership of the creek bottom of non-navigable streams to the adjacent landowner. Anyone is allowed to float such waters but not wade. The only waters in the county designated as navigable are Baugo Creek and the St. Joseph River. This designation was made in the 1800's and based on commerce and trapping related uses of the waters at that time.

Warm water fisheries are threatened in Elkhart County due to fish consumption advisories. The species tested, however, are generally at the lowest level of the advisory. Warm water fisheries in small streams are impacted for various reasons, including increased development within the watershed and inputs of litter and other materials. There are few cold water streams in the county. A few of these streams have populations of naturally reproducing brown trout, including one ditch in Elkhart County and Juday Creek and Willow Creek in St. Joseph County. These brown trout, however, are not native. The Little Elkhart River is stocked with brown trout and rainbow trout. No brook trout populations remain in the jurisdiction. The cold water fisheries are potentially threatened by both habitat loss and rising water temperatures from stormwater inputs.

Large geese populations are a concern in some areas, especially in parks along the St. Joseph River. The numbers are due to natural reasons, such as the migratory flight path, and due to anthropogenic reasons, such as creation of habitat (open lawn areas for grazing). Parks seldom leave vegetation intact in riparian areas due to the desired aesthetics of the park. This results in potential bank erosion where mowing occurs. Parks departments represent another group where education should be directed.

It was suggested that areas of the watershed only be marked impaired in the Designated Use Tables if they are on the 303(d) list. However, Indiana has many more waters in the watershed on that list than Michigan does. It was also noted that Indiana works to protect waters to be “fishable and swimmable”, while Michigan works to meet eight designated uses. The differences in terminology and determination of impairments may be confusing across state lines.

It was noted that reports, such as the annual State of the Environment, which must cover a variety of topics tend to oversimplify water resource issues. The need to make generalizations causes locales of impairment and high quality areas alike to be overlooked. This will be essential to keep in mind when developing the plan for the St. Joseph River Watershed, which will cover an extensive geographic area.

It was also suggested that various one-page summaries of the plan be developed for targeted audiences. This allows appropriate information to be conveyed to watershed stakeholders without asking them to read the entire plan. Useful information with available links to more detailed data should be made readily accessible.