

Section 4.0 SOURCE IDENTIFICATION

4.1 INFORMATION SOURCES

Existing sources of water quality data were assembled and stored in Microsoft Access for use in the desktop geographic information system (GIS) and mapping software ArcView 8.3 (ESRI, 2003), which provided data visualization, query, analysis and integration along with the ability to create an edit geographic data.

Existing sources of water quality data were obtained from a variety of sources and included the following.

- USEPA's Storage and Retrieval System (STORET),
- USGS databases,
- IDEM OWQ,
- Michigan City Wastewater Treatment Plant (WWTP), and
- Interagency Task Force on *E.coli* - The Interagency Task Force data was a compilation of data collected by the IDEM, the LaPorte County Health Department, and the Michigan City Sanitary District.

A pollutant source inventory was compiled and included data obtained from federal, state and local databases. The source inventory is summarized below and includes:

- IDEM OWQ – NPDES permitted facilities, solid waste permitted facilities, landfill permits, permitted solid waste compost facilities, land application permits and various reports and studies (*Trail Creek Watershed Management Plan and Water Quality Assessment for the Development of TMDLs for E.coli and Cyanide in Trail Creek, Michigan City, LaPorte County*),
- USEPA - Permit Compliance System (PCS) database, and Better Assessment Science Integrating Point and Nonpoint Sources (BASINS) BASINS,
- United States Fish and Wildlife - Wildlife population estimates,
- LaPorte County Health Department - Onsite sewage disposal permits and septic system information, sewage handling permits, biosolids use facilities permits and the Final Report; *Town of Trail Creek Sanitary Survey*, and
- Michigan City Sanitary District – Drawings of the Michigan City sewer collection system, precipitation, outfall location and other related data,

Watershed characteristics were compiled from the following databases:

- USGS hydrologic and stream flow gauging data,
- USGS daily mean flow data for Trail Creek stations 4095380 (1994-2001) and 4095300 (1969-1994),
- LaPorte County Water Resources website, <http://pasture.ecn.purdue.edu/~frankenb/watershed/county/laporte/index.html>;
- National Resource Conservation Service (NRCS) Soil Survey Geographic (SSURGO) database - Soil survey information, and
- NIRPC - Existing GIS data layer coverage, subject listings and related internet sites, http://www.iun.edu/~lib/GIS_resources.htm. Access for geographic data and services through a global network of publishers is found using the link <http://www.geographynetwork.com/home.html>.

Agricultural and urban best management practices (BMP) utilized in the watershed were also researched and included the following:

- Agricultural Best Management Practices (BMP) information was obtained from the federal NRCS Field Office Computing System (FOCS) and the State Agricultural BMP Tracking Program, as well as local Soil and Water Conservation District personnel. IDEM OWQ also provided data regarding their Nutrient Management Plan.
- Urban BMP Information was obtained from existing community storm water management programs and ordinances, including location and type of permitted storm water management facilities; municipal Phase I/II storm water permits; and identification of subdivisions constructed prior to adoption of local ordinances.

A detailed listing of sources for water quality data, pollutant source inventory, watershed characteristics and BMPs is documented in the Trail Creek Data Report (Triad, 2002). Based on analyses of this data, potential sources of E. Coli loading to Trail Creek are related to:

- NPDES permitted facilities;
- Failing or improperly operated septic systems;
- Cattle grazing and deposition of fecal matter both on the fields and directly to the Creek;
- Urban storm water runoff; and
- Illegal sewer connections to stormwater or drainage systems.

To the extent feasible, data are correlated to Global Positioning System (GPS) coordinates and conform to IDEM OWQ GPS procedures and requirements.