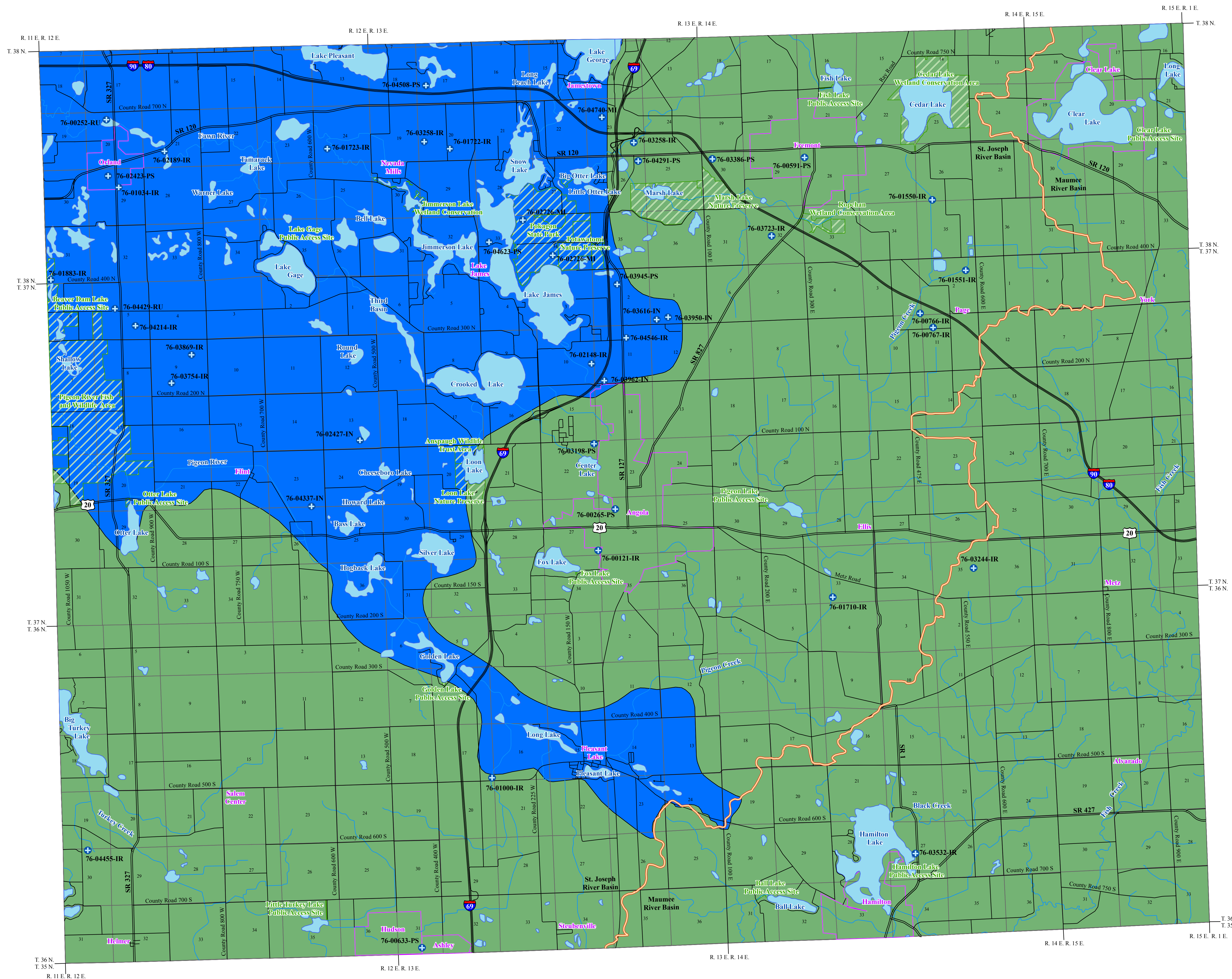


UNCONSOLIDATED AQUIFER SYSTEMS OF STEUBEN COUNTY, INDIANA



The following is a summary of the availability of ground water in Steuben County and was derived from the Indiana Department of Natural Resources 1987 publication Water Resource Availability in the St. Joseph River Basin, Indiana, and the Indiana Department of Natural Resources 1996 publication Water Resource Availability in the Maumee River Basin, Indiana. The two reports describe the availability, distribution, quality, and use of ground and surface water in the St. Joseph River Basin, and the Maumee River Basin, and can be viewed and downloaded at <http://www.in.gov/dnr/water>.

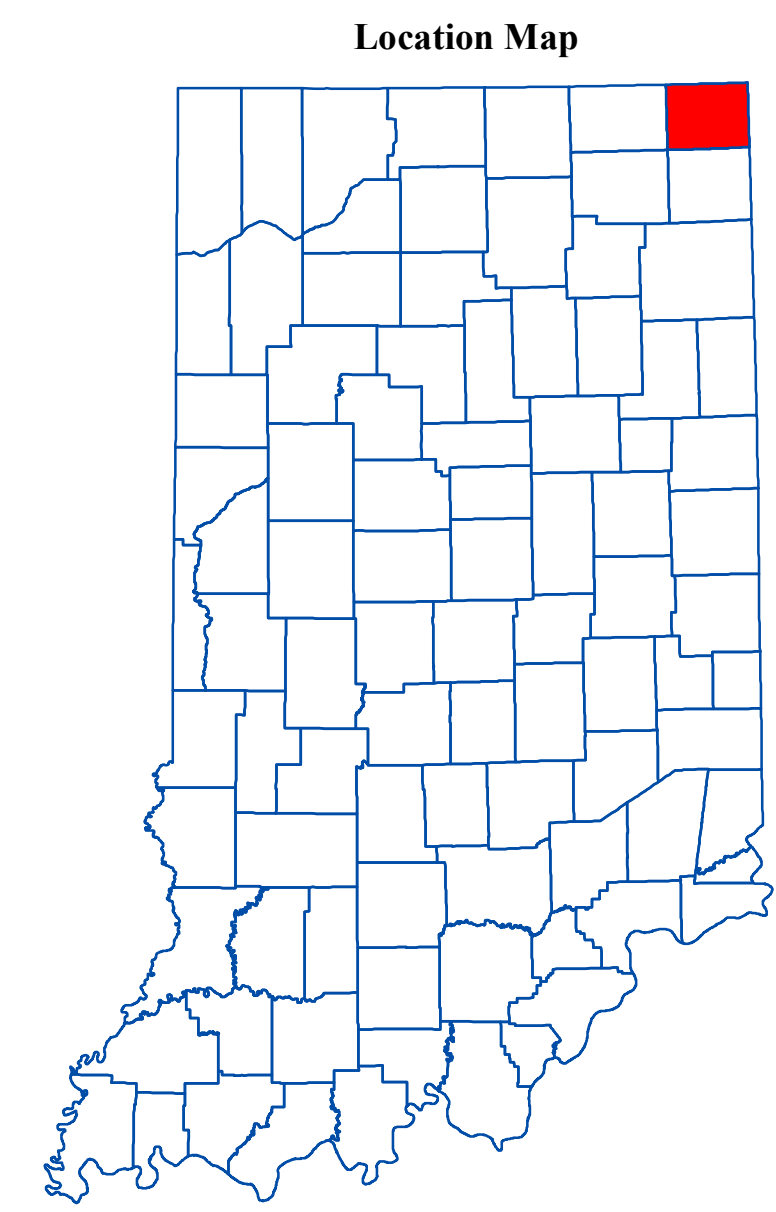
Unconsolidated deposits of glacial sands and gravels are the principle source of ground water in Steuben County. Two unconsolidated aquifer systems have been mapped and defined on the basis of geologic environments and aquifer characteristics. Due to the availability of prolific unconsolidated aquifer systems and the extreme limitations of shale materials, the underlying bedrock is generally not used as an aquifer resource.

Kendallville Aquifer System

The Kendallville Aquifer System contains discontinuous sand and gravel outwash lenses that occur at various depths within a till and mixed drift complex. Individual sand and gravel aquifers within the system commonly range from 5 to 30 feet in thickness, but there is a general increase in outwash thickness northward where local accumulations approach 95 feet. Large diameter, high-capacity wells in Steuben County yield from 80 to 1300 gallons per minute (gpm). The susceptibility of this aquifer system to surface contamination varies from low to moderate. Susceptibility is low for much of the aquifer system overlain by clay-rich, protective Erie Lobe tills. However, the aquifer system in many parts of Steuben County, where these tills are missing and permeable sediments occur at the surface, are significantly more susceptible to surface contamination than other parts of the system.

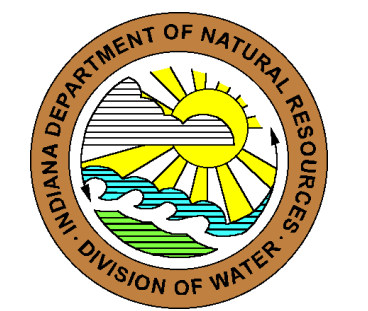
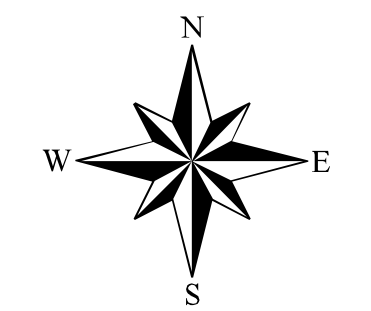
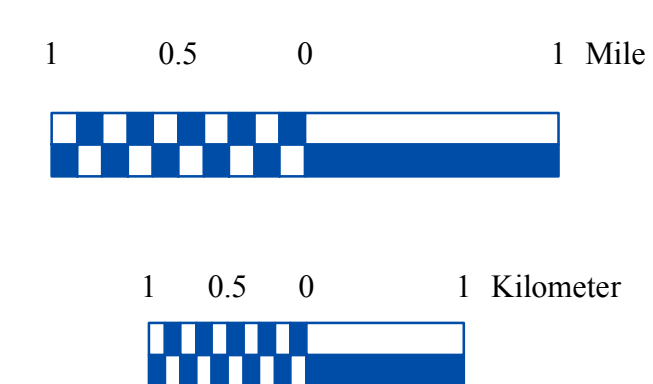
Howe Outwash Aquifer System

The Howe Outwash Aquifer System is located primarily in northwestern Steuben County. The prevailing character of this aquifer system is moderately thick near surface sand and gravel deposits that overlie an altered till plain. The near surface outwash deposits are the most extensive granular deposits in this system and vary from 15 to 135 feet in thickness. Within the underlying till sequence, clay zones alternate with sand and gravel layers. These sand and gravel layers average 5 to 25 feet in thickness, although some localized lenses reach thicknesses of 100 feet. Two or more sand and gravel deposits often occur at depth within the till sequence, but are only continuous locally. This is an area with good to excellent ground-water availability (100 to 1200 gpm). The surficial deposits are highly susceptible to contamination and the deeper sand and gravels are moderately so.



EXPLANATION

- Registered Significant Ground-Water Withdrawal Facility
- Stream
- County Road
- Basin Boundary
- State Road & US Highway
- Interstate
- Municipal Boundary
- State Managed Property
- Lake & River



Map Use and Disclaimer Statement

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This map was created from several existing shapefiles. Township and Range Lines of Indiana (line shapefile, 20020621), Land Survey Lines of Indiana (polygon shapefile, 20020621), and County Boundaries of Indiana (polygon shapefile, 20020621), were all from the Indiana Geological Survey and based on a 1:24,000 scale. Draft road shapefiles, System1 and System2 (line shapefiles, 2003), were from the Indiana Department of Transportation and based on a 1:24,000 scale. Populated Areas in Indiana 2000 (polygon shapefile, 20021090) was from the U.S. Census Bureau and based on a 1:100,000 scale. Streams27 (line shapefile, 20000420) was from the Center for Advanced Applications in GIS at Purdue University. Managed Areas 96 (polygon shape file, various dates) was from IDNR. Unconsolidated Aquifer Systems coverage was from IDNR (Water Resource Availability in the St. Joseph River Basin, Indiana, 1987, and Water Resource Availability in the Maumee River Basin, Indiana, 1996) and based on a 1:48,000 scale.

Unconsolidated Aquifer Systems of Steuben County, Indiana
by
Division of Water
1987, 1996