

water use & availability in northwest Indiana



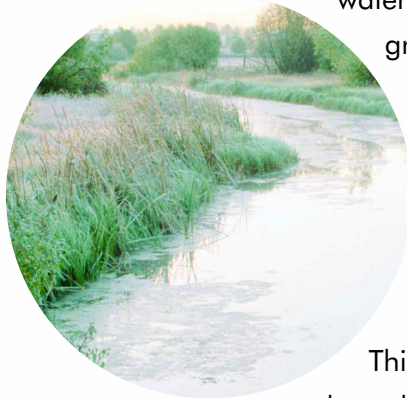
The Water Resource Protection and Conservation Toolkit

This is one of a series of 12 fact sheets developed by the Northwestern Indiana Regional Planning Commission with funding from the Joyce Foundation for the Water Resources Protection and Conservation Toolkit. The toolkit provides background on, and methods to protect and conserve local water resources. These tools are intended to help citizens and local officials to manage and protect water resources for future generations.

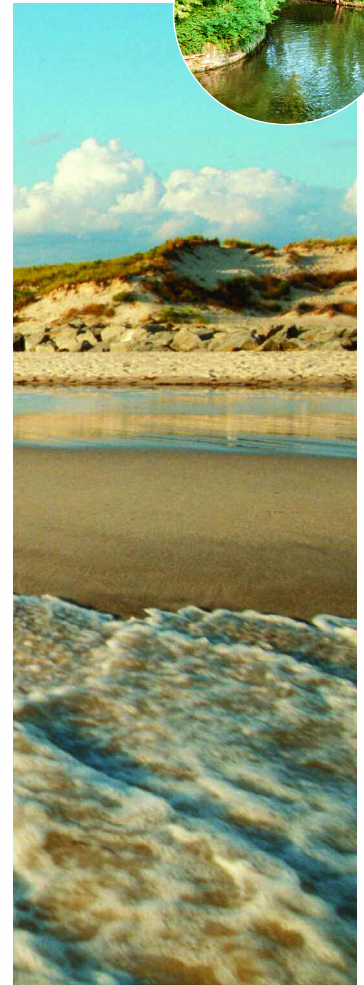
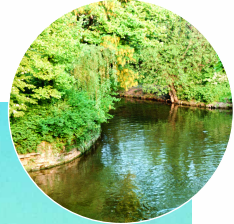
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What is Happening to Water Resources in Northwest Indiana?

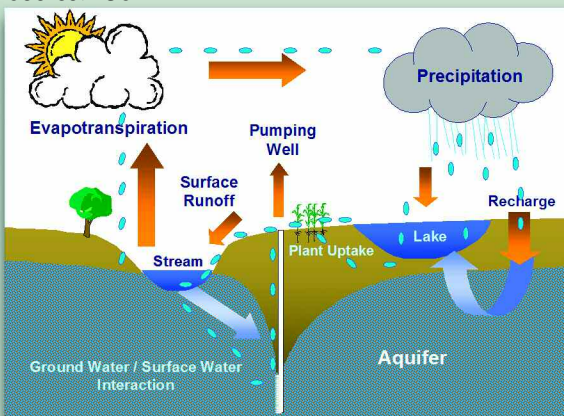
Availability of water is a major factor in supporting growth and development in northwest Indiana. However, development without concern for protection of water supplies makes supporting such growth difficult if not eventually impossible. Growth without thought of adequate water supplies or protection of those supplies can deplete and pollute them, making them unusable.



This is particularly important in areas where the primary water sources are groundwater. Development that impedes the natural water cycle and impedes the replenishment of important water sources can harm the region's long-term growth potential and increase the risk of pollution.



Source: USEPA



Water Resources and The Natural Water (or Hydrologic) Cycle

Water resources can be significantly affected by development activities. Water resources move through the water cycle, sometimes called the hydrologic cycle. The water cycle is the continuous movement of water from ocean, lakes, rivers, and other water bodies to air and land then back to these water bodies through rain and snow in a cyclic pattern as water is used and re-used. Some water infiltrates (or seeps into) the ground or evaporates back into the atmosphere.

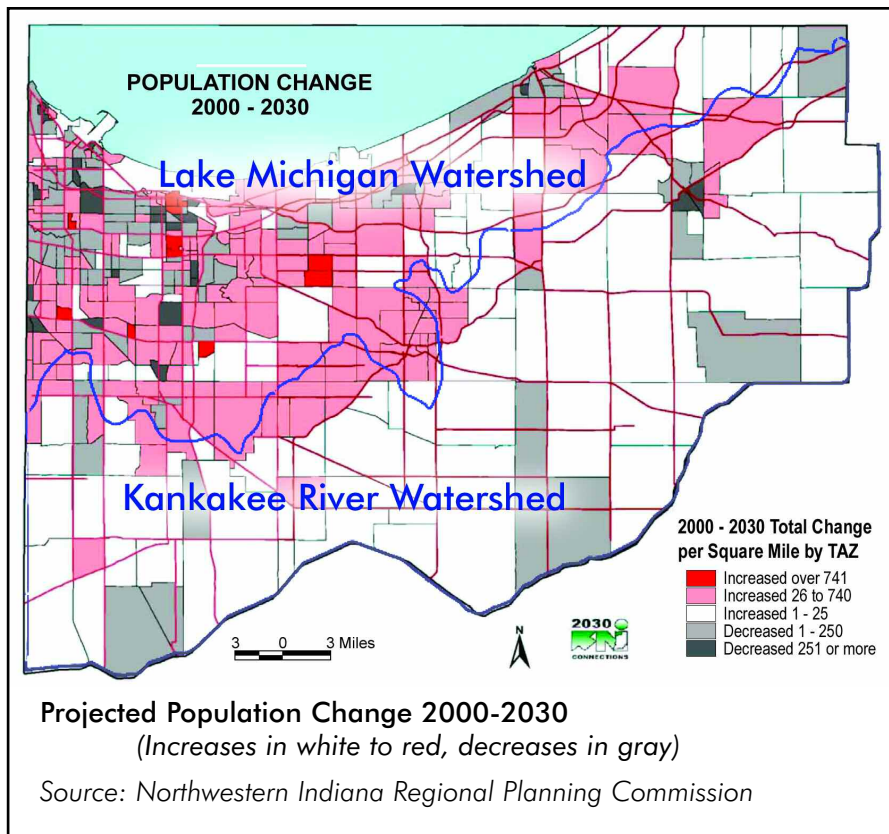
For more information, please contact: Northwestern Indiana Regional Planning Commission
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What are Northwest Indiana’s Development Trends and Water Needs?

Northwest Indiana will see greater growth and development in the coming decades.

- Population growth occurring across the Great Lakes basin divide in Lake, Porter, and LaPorte Counties. There will be a higher density of people straddling the Lake Michigan-Kankakee River basin divide.
- Population will decrease in the urban core and communities near Gary.

As people move away from existing infrastructure, it raises important planning issues in making sure there is enough water available for growing areas. For communities outside the Lake Michigan basin, Lake Michigan water is not an automatic option. Diverting water from Lake Michigan is very difficult, and in some cases impossible, due to a federal law called the Water Resources Development Act and new laws currently being proposed under the Great Lakes



Charter Annex. Since the federal law was passed only two diversions have been approved. One, from Lowell, Indiana, was not approved. Groundwater, therefore, is the primary sources for meeting the water demands of the growing areas in the southern portion of Lake, Porter, and LaPorte Counties.



What are the Water Use Trends?

Despite a projected population increase of 5.7 percent in northwest Indiana, water use is projected to decrease slightly over the next 20 years in all three counties. The Southern Illinois University Countywide Projections of Community Water Supply Needs in the Midwest attributes the general decline in water use to more efficient industrial and residential water use.

Population will experience greatest growth in the Lake Michigan basin portion of the three county area.

Population will increase along the basin divide, the primary area where groundwater supplies are not as good.

Northwest Indiana Water Resources Protection Assistance

Indiana Geological Survey

igs.indiana.edu/

Planning with Power Purdue University

www.planningwithpower.org

A project coordinated by the Illinois-Indiana Sea Grant College Program and the Purdue University Cooperative Extension Service (CES) that links land use planning with watershed planning at the local level.

Safewater for the Future

www.ecn.purdue.edu/

SafeWater/drinkinfo/index.htm.

Safewater for the Future

Purdue University Extension

www.ecn.purdue.edu/SafeWater/

An education program of Purdue Extension that helps communities and individuals protect water supplies and the environment.

Water Resources of Porter County, Indiana

www.ecn.purdue.edu/SafeWater/watershed/porter

Water Resources of LaPorte County, Indiana

abe.www.ecn.purdue.edu/~frankenb/watershed/county/laporte/index.html

Projecting Development & Water Use

Department of Geography at Southern Illinois University

"Countywide Projections of Community Water Supply Needs in the Midwest,"

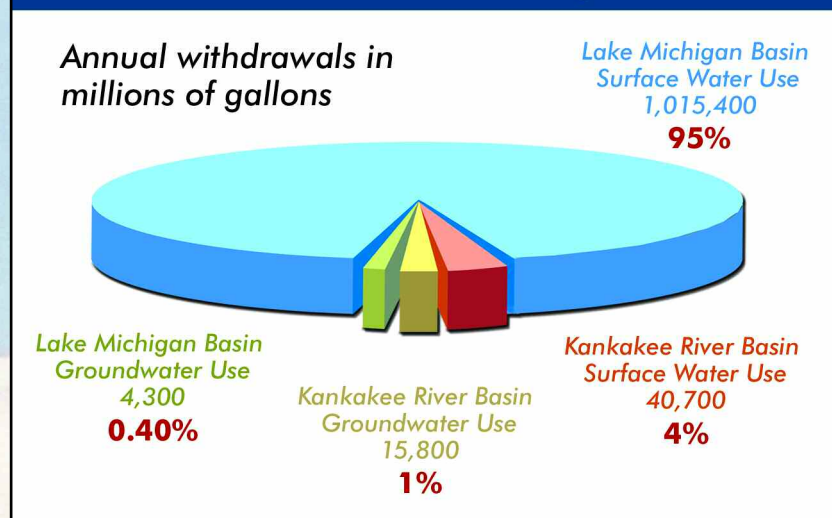
<http://mtac.sws.uiuc.edu/mtacdocs/finalreports/FinalReportMidwestCWSProjections.pdf>

Northwestern Indiana Regional Planning Commission

"Connections 2030 Long Range Transportation Plan," including population and development projections,

www.nirpc.org/2030%20home.html

Water Use in the Lake Michigan & Kankakee River Basins by Source

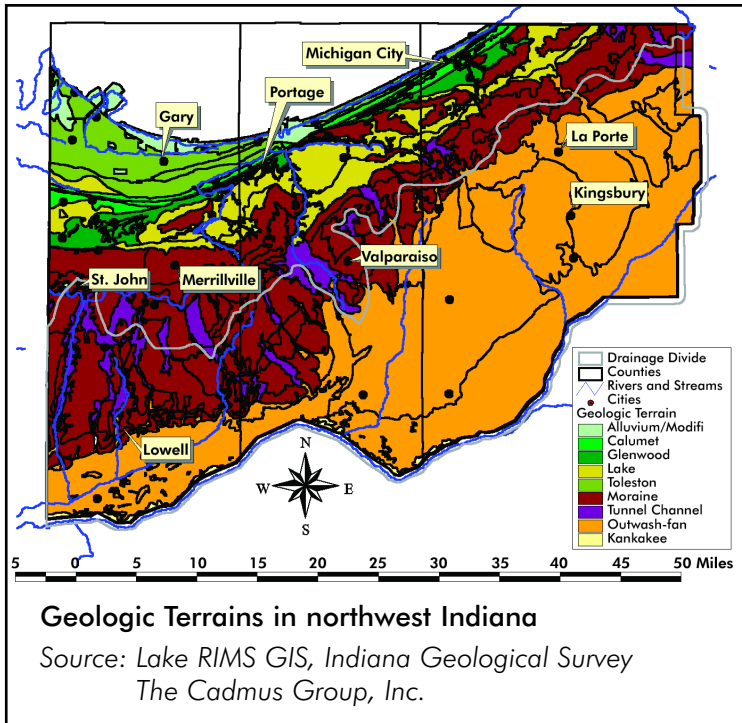
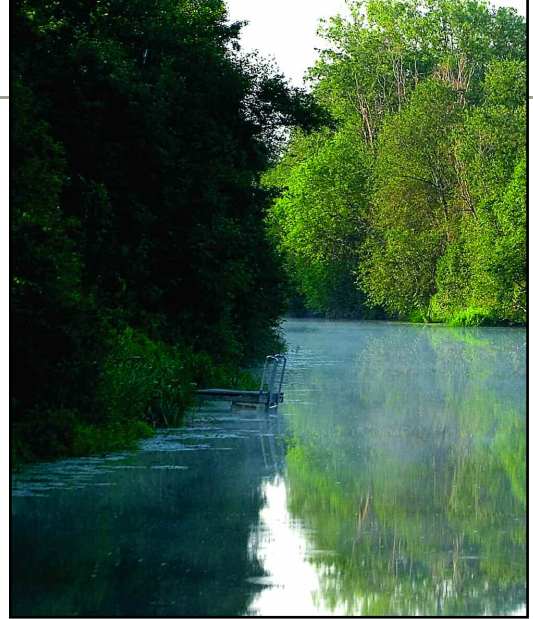


Source: Indiana Department of Natural Resources

Where Does Water Come from in Northwest Indiana?

- Most water used in northwest Indiana comes from Lake Michigan basin surface water sources. Ninety-five percent of water used in northwest Indiana comes from Lake Michigan. Energy production accounts for 37% of this use and industrial use accounts for 59% of this use, leaving four percent for public consumption.
- Water obtained from the surface of the Kankakee River accounts for 4 percent of all the water used in Northwest Indiana, primarily for energy production and industry.
- In the Kankakee River Basin, 98% of public water supply comes from groundwater sources and 2% from surface water sources.
- In the Lake Michigan basin, 97% of the public water supply comes from surface waters and only 3% from groundwater.

Because of the importance of groundwater for public supply, particularly in the Kankakee River basin, the groundwater must be protected and replenished. Recharge areas, generally found in soils, like sand, allow water to seep through the ground to aquifers and therefore must be protected. In the Kankakee River basin in northwest Indiana, the areas where water most easily seeps into the ground are along the Kankakee River system.



How Can We Care for Water Supplies?

Because groundwater is important for public water supplies, particularly in the Kankakee River basin, groundwater must be protected and allowed to replenish. Many of the recharge areas in the Kankakee River basin in northwest Indiana are found along the river. There are many ways to protect these important areas through local planning and development policies.

For more information see the "How Can Land Use Planning and Zoning Protect and Conserve Water Resources?" and other fact sheets in this toolkit.

What is the Groundwater Availability in Northwest Indiana?



Groundwater is found both in shallow and deep parts of the ground. Shallow groundwater sources are replenished by rainfall and snowmelt. As such they are highly susceptible to drought, over pumping, and pollution. Deep groundwater sources are less threatened by drought and pollution,

but can be over pumped easily because the water is not replaced as quickly as shallow groundwater. It can take hundreds of years to replenish water in deep parts of the ground.

The northwest Indiana region is divided into three general areas for soil type.

In the south (the orange colored areas of the map) the soil is sandy, allowing for good infiltration and replenishment of groundwater. Development in this area is less relative to the other areas, and the water of good quality and quantity.

In the central area (the brown colored areas on the map), which tracks closely with the Lake Michigan-Kankakee River basin divide, the soil is clay, meaning less infiltration and poorer quantities of shallow groundwater.

In the north, near Lake Michigan (the green colored areas of the map), the soil is sandy, allowing good replenishment, but development and industrialization has contaminated these supplies, making them generally unsuitable for drinking water.

Northwest Indiana Needs

As the Lake, Porter, and LaPorte County region develops, there needs to be a focus on:

- Developing a better map of existing groundwater resources
- Locating and protecting groundwater recharge areas
- Implementing practices that protect water resources in all areas, particularly in developing areas
- Encouraging development of areas close to or part of an existing water supply system rather than building new systems.