Environment

Portage County Physical Environment

2006 Measurements	Portage County	Wisconsin
Air Quality Cancer Risk (per 1,000,000)	20.1	28.4
Respiratory Hazard Index	1.28	2.36
Fine Particulate Matter in air (ug/m ^{3})	8.1	9.2
Ozone Level (ppb)	69	73
Nitrates in Water (% of population exposed)	63.1	13.4
Housing with Increased Lead Risk (%)	25.2	31.1
Lead Poisoned Children (%)	.5	3.7

Sources: Wisconsin Public Health and Health Policy Institute; University of Wisconsin Medical School

Points of Interest

- In 2006, Portage County was ranked 67 out of the 72 counties in Wisconsin for overall physical environment.
- The natural environment in Portage County is valued by its residents. The county's boundaries include 16.45 square miles of water area, including 137 lakes covering 12,215 acres and several rivers. Surface waters are identified by two main river basins: the Wolf River with water flow from the eastern part of the county and the Wisconsin River which drains from the northwest section of the county. The county has eight watersheds.
- Portage County is underlain by exposed crystalline rock in the northwest of the county, glacial drift in the eastern half and south part of the county, and sandstone overlies crystalline rock in the southern part of the county.
- The natural vegetation includes areas of maple, aspen, hemlock and yellow birch in the north and northwest of the county, areas of jack pine and prairie grasses in the North central region, sedge meadow and oak in the South West region, and white and red pine, and oak savannah in the South. Approximately 1/3 of the county is forested.

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Key Terms

Fine Particulate Matter
A measure of the amount of matter less than 2.5 micrometers in 18 monitoring sites throughout the state. Fine particulate matter is tiny airborne particles, small enough to pass through the heart and lungs and cause shortness of breath and strain the heart.

Ozone Level
A measure of the amount of ozone present at monitoring sites in 29 counties. Ozone, a highly reactive gas, reacts with sensitive lung tissue to cause several health problems, including increased susceptibility to respiratory infections.

Environment

Points of Interest (continued)

- Portage County leads the state in the production of snap beans, potatoes, and sweet corn, and is second in the state in green pea production. In 2003, there were 168 Grade A dairy herds, and 36 Grade B dairy herds.

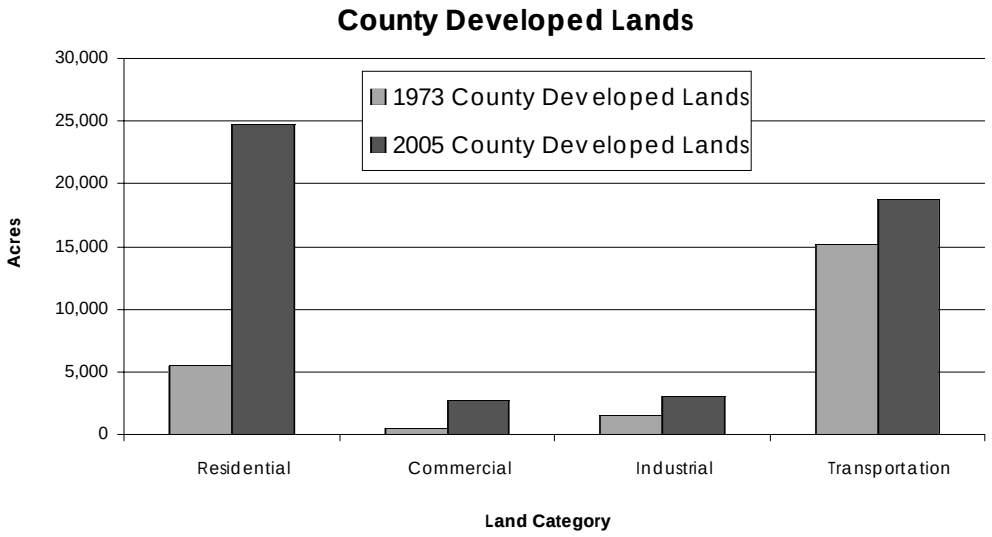
- Three larger wildlife properties in the county are managed by the WI Department of Natural Resources:
  1. The Mead Wildlife Area contains nearly 30,000 acres, approximately ¼ is in Portage County.
  2. The Buena Vista Grassland Wildlife area consists of 12,000 acres providing habitat for prairie chickens in the southwestern part of the county.
  3. The Dewy Marsh Wildlife Area is over 5,000 acres and is managed largely as upland game habitat.

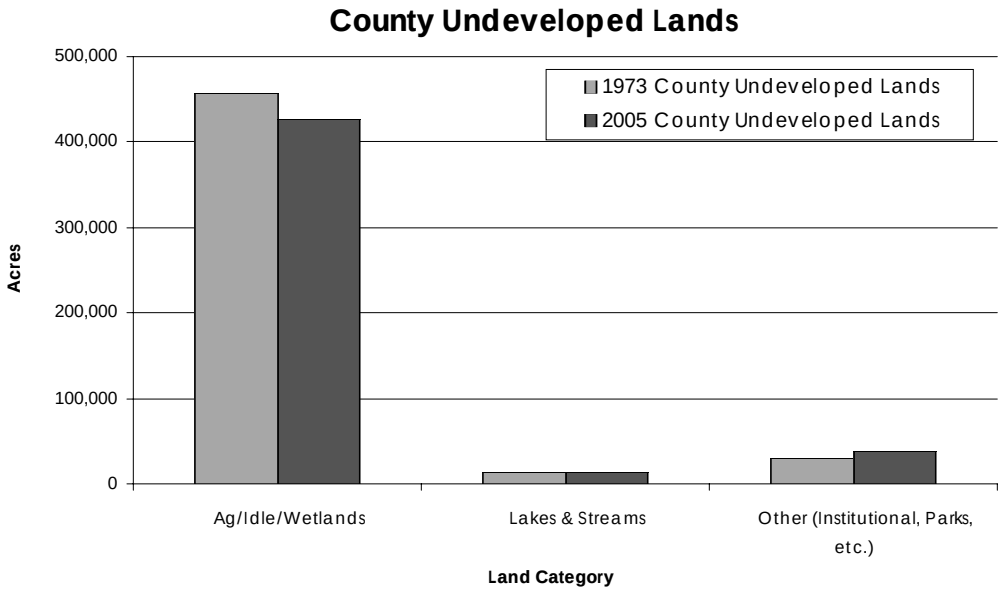
- Nitrates are a significant problem in the county. Due to permeable, sandy soils over shallow water tables, contaminated groundwater is a definite concern for certain kinds of land uses. This is particularly true for land east of the Wisconsin River.

- Soil Resources are another area of concern. According to the Portage County Planning and Zoning Department's Land and Water Resource Management Plan of June, 2004, the Wisconsin River generally divides major soil types. Tight, clay soils dominate the northwest and light, sandy soils are found in the east and south. This coincides with major land use differences and significantly different techniques to solve local community problems. The primary impacts on soil resources in Portage County are the agricultural, non-metallic surface mining, and urban development land uses.

- The northwest and eastern townships in the moraine are primarily dairy production, while the central sand plain is developing into an irrigated cash crop region. Although these regions have generally been identified as having annual soil loss rates of five tons per acre or less, certain relationships of specific land use methods, soil type, percent of slope, and length of slope, result in some areas having eight or more tons per acre soil loss per year. Clearing fence rows and woodlands for center pivot irrigation have also created an opportunity for wind erosion in the sand plain area. If not managed properly, some areas can result in 10-20 tons per acre per year of soil loss during single wind events. Residential development in the moraine region has also resulted in some specific areas with high erosion rates. This is primarily due to poor site layout and improper methods of soil protection during construction.

Land Use Trends





Source: Portage County Planning & Zoning Department

Points of Interest

Significant changes in land use development have occurred over the past few decades. According to the Portage County Comprehensive Plan:

- Developed land uses increased by over 117% between 1973 and 2005. Developed lands consumed by residential and commercial use have grown dramatically. Residential use increased by 350%, while commercial use increased by 450% between 1973 and 2005. Nonetheless, both represent only a small percentage of the approximately 525,000 total acres in Portage County.

- Much of the larger residential pattern for use has increased along the Wisconsin River and in several unincorporated areas, as well as areas adjacent to the city of Stevens Point and county villages.

- Commercial, industrial, and government/institutional land use make up less than 1% of the total county acreage.

- With the growth of developed land use, conflicts may emerge between non-farming and agricultural uses, and between recreational and non-recreational uses of land. This is particularly true adjacent to all Portage County water bodies.

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Land Use Trends

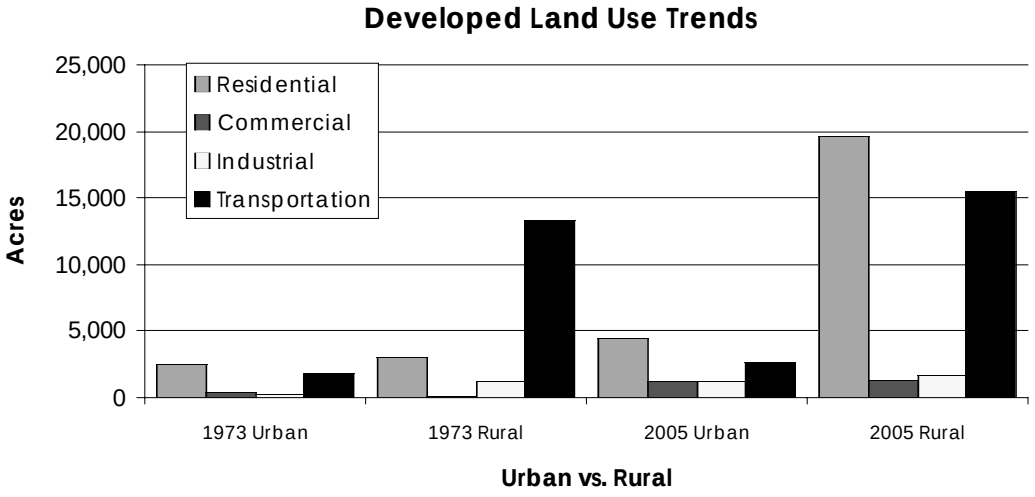
Points of Interest

- Between 1997 and 2002, the number of total farm acres, the number of cropland acres, and the number of irrigated acres all increased.

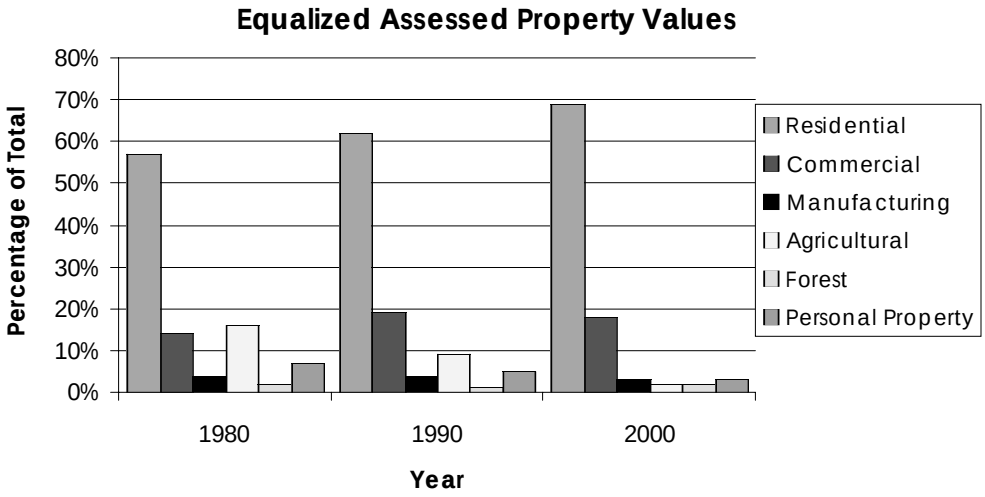
- Agricultural use of land has declined but still makes up the vast majority of land use in the county. A little over half of the county's acres are farmed. Although the number of farmed acres declined 39,000 between 1973 and 2005, the total number of farms and the number of full-time farms actually increased between 1997 and 2002. According to the Portage County UW-Extension Office, in 1997 there were 518 full-time farms and 913 total farms. By 2002 there were 671 full-time farms and a total of 1,197 farms.

- 40% of 2005 cropland is under irrigation. Total commodities sold from all farms were $115,093,000 in 2004. A little over half of all farms had sales of $100,000 or greater. In 2004, 90% of the cropland acres were harvested from 354 farms.

- Land use planning as a community issue was rated 5.3 in importance on a seven-point scale in the LIFE Report Community Survey.



Source: Portage County Planning & Zoning Department



Source: WI Department of Revenue Statistical Report of Property Values

Water Quality

Points of Interest

Natural Groundwater Quality:

Natural groundwater quality is generally good in Portage County. Those natural water quality problems that do exist include high iron, manganese, radionuclides, and corrosive water. Iron and manganese cause no health concerns but affect taste, odor, and staining. Corrosive water also is not harmful to health, but may affect plumbing and metals that may dissolve into drinking water. Radionuclides occur mostly in bedrock aquifers and can be a significant contributor to radon gas in homes. Bedrock is common in the northwest region of the county, but no widespread sampling has been done. In addition, several wells east of Stevens Point have been abandoned because of groundwater radioactivity.

Human Induced Groundwater Concerns:

The most widespread groundwater contaminant in Portage County is nitrate nitrogen. While nitrates are not as serious a health concern as petroleum related pollutants, chlorides, or pesticides, they are the most common human created water problem in the county. Most nitrate levels continue to rise in the county. Previous reduction efforts have kept levels from increasing at an even faster rate.

According to the Water & Environmental Analysis Laboratory at the UW-Stevens Point, bacteria were found in 16% of tested wells, while nitrates were found in 14% (not a random sample).

While water level tables naturally fluctuate on a recurring basis, most areas of Portage County have sufficient amounts of groundwater. The only area to experience difficulty is the northwest bedrock region where low water flows are a problem for municipalities and agricultural operators.

Public water departments periodically test municipal water systems in the county. These tests indicate a high quality of water. For example, the 2005 test results for Stevens Point indicate no contaminant violations for a series of tests for microbes, organic and inorganic chemicals, pesticides, herbicides, or radioactive materials.

Ground Water Challenges:

While groundwater tests in the county are positive, the 2004 Groundwater Management Plan prepared by the Portage County Planning and Zoning Department identified three critical ground-water challenges in the future.
1. Groundwater quantity, particularly in the Little Plover River Basin municipal recharge area. This area is located in the central region of the county and according to a study by Portage county UW-Extension Office and the University of Wisconsin at Stevens Point, groundwater pumping is reducing stream-flow in the Plover River by 10% and in the Little Plover River by 40%. This may have a significant impact on the Little Plover River ecology.
2. Nitrate pollution affects much of Portage County groundwater and many of its wells. About 20% of county wells exceed standards for nitrates. Nitrates raise a variety of human and aquatic life concerns. Portage County ranks at the bottom of the WI County Health Rankings for the amount of nitrates in drinking water.
3. Pesticide pollution is also a common problem. Atrazine affects 40% of wells, with at least 3% exceeding standards (although the methodology used to make this estimate is described as very conservative).

Surface Water:

The surface water resources of the county are contained within two main river basins and eight watersheds. Although concerns exist regarding toxic contaminants, according to the Portage County Planning and Zoning Department's 2004 Land & Water Resource Management Plan, the Wisconsin River meets water quality standards for all parameters tested by the WI Department of Natural Resources.

The quality of water in the eight watersheds varies in classification and for biotic indexes from poor to excellent.

Indicator #44

Air Quality

Points of Interest

- Overall, the air quality is consistently high in Portage County, the region, and all of rural Wisconsin. There are no monitoring stations of air quality in Portage County; the closest station is just over the county line to the north in the adjacent county of Marathon.
- In Wausau, a city 20 miles to the north of Portage County, no unhealthy air quality days have been recorded by the Department of Natural Resources in the last 25 years. In 2005, over 90% of days in Wausau were recorded as good (the highest score) and nearly all of the rest were recorded as moderate (the second highest level). (There is some discussion that the ratings may be changed in the future making it more difficult to obtain the highest scores).
- Rural Wisconsin also has positive readings for fine particulate air pollution with few days outside the good or moderate readings.

According to the WI County Health Rankings collected by the WI Public Health & Policy Institute and the WI Medical School:

- Portage County ranks near the very top for air quality compared to other counties.
- While cancer risk from air pollution has declined in recent years, Portage County does not rank highly compared to other counties. Nor does the county rank highly in relation to the repertory harm index and ozone value. However, this data should be seen within the context of overall very high quality of air in rural Wisconsin.

Energy Use

REGIONAL ELECTRIC USE
WPS System-Wide

	2000	2001	2002	2003	2004	2005	2006
System Megawatt Peaks	2,049	2,174	2,150	2,195	2,185	2,357	2,425

Key Terms

Megawatt (MW)
Equal to 1,000 kilowatts or 1 million watts.

Peak Demand
The greatest demand placed on an electric system; measured in kilowatts or megawatts; also, the time of day or season of the year when that demand occurs.

Peak Load
The amount of electric power required by a consumer or a system during peak demand; measured in kilowatts or megawatts.

(Source: Wisconsin Public Service)

Points of Interest

- Energy use has continued to climb in Central Wisconsin. As experienced in the rest of the nation, transportation fuels have skyrocketed since 2000. The cost of natural gas and electricity has also significantly grown. Regional peak megawatt electric use has increased 18% from 2000 to 2006.

- **Wisconsin's Energy Future**
  Wisconsin's electric utilities and the state regulators put together a plan to meet the state's future energy needs through 2010. The plan was unveiled in summer of 2004. Here are some highlights:

- Peak demand will continue to grow at about 2.5 % each year. This growth in peak demand is equal to adding one major power plant in the state every two years.

- It is expected that there will be an adequate and reliable source of energy to meet public energy needs through 2010. The utilities' significant electric generation building plans are the main reason. Utilities are planning to increase their electric generation by one-third by 2010.

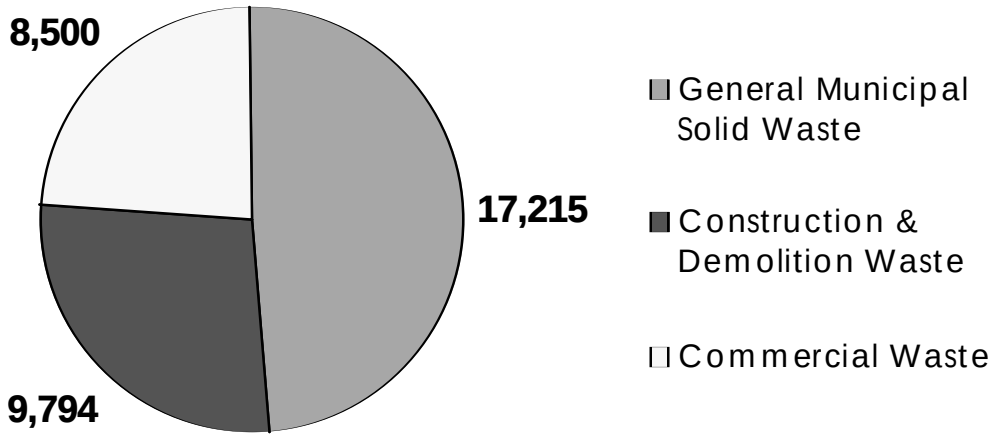
- Coal and nuclear fuel sources will continue to provide the bulk of Wisconsin's electricity through 2010. However, renewable energy sources will impact Wisconsin energy fuel mix as utilities tap new renewable resources to meet the statutory requirement that 10% of their retail sales come from renewable energy sources by 2015 (Act 141).

- Congestion and operational constraints are the principal challenges facing Wisconsin's transmission system. Other challenges include regional and federal transmission requirements.

- Although Wisconsin's rates are competitive, there will continue to be upward pressure on rates to help meet reliability and environmental standards.

Solid Waste

2006 Solid Waste Disposal In Tons



Point of Interest

The Portage County Solid Waste Department accepts waste and recycling principally from 23 county municipalities, construction and demolition waste, and commercial waste.

2006 SOLID WASTE DISPOSAL Recyclable/Beneficial Materials

	2006
Paper Fibers	2,515 tons
Mixed Containers	2,292 tons
Waste Oil	3,285 gallons
Computers, TVs, Electronics	24 tons
Fluorescent/incandescent Bulbs	8,207 units
PCB Lighting Ballasts	55 pounds
Small Batteries (alkaline)	173 pounds
Lead-acid Batteries	17 tons
Scrap Metal	105 tons
Major Appliances	1,021 units
Old Tires	87 tons
Hazardous Materials	6,287 pounds

Source: Portage County Solid Waste Department