

TOWN OF MINOCQUA

Oneida County, Wisconsin



Adopted 2002

LAND USE PLAN

1. BACKGROUND

The Town of Minocqua is located in the northwest corner of Oneida County. The County is located in the north central part of the state and is bounded on the north by Vilas County, on the west by Price County, on the east by Forest County and to the south by Lincoln and Langlade Counties.

Minocqua is one of twenty towns in the County. See the locational reference map.

A. THE PLANNING PROCESS

The Town of Minocqua's planning process began in the Spring of 2001 when the Town Board and the Town Land Use Task Force requested the North Central Wisconsin Regional Planning Commission (NCWRPC) to prepare and submit a lake planning grant to the DNR to prepare a land use plan for the town. This plan focuses on land use, with some discussion of water quality.

Since the start of the process the Task Force has been meeting at least monthly at the Town Municipal Center to discuss issues, review information and maps, as well as to formulate the plan. Some members of the public attended meetings, but the major public input came from residents and land owners from a survey that was completed in the summer of 2001.

An important part of any planning process is public involvement. Public involvement provides the citizens of the town an opportunity to express their views; ideas and opinions on issues that they would like addressed on the future development of their town.

The Community Survey was sent out in late June to all property owners and residents in the town. In total 4995 surveys were distributed, with 1,603 returned for a response rate of 32 percent. The responses were tabulated, presented and summarized in a report entitled *Town of Minocqua Community Survey Findings*. Most of the comments from the surveys identified the need to preserve the "northwoods" character of the area. The results of the survey were presented at an August 2001 informational meeting. A survey summary is included in Attachment A.

The information obtained from the survey has been a guide for the development of the land use plan. The plan will in turn be used to guide the decisions of local officials.

In addition to the regular monthly public meetings and the survey, an open house meeting was held for the public to review the draft plan. This would be an additional opportunity for the public to be involved in the process. This meeting was held at the Town Municipal Center on April 10th, 2002. The plan was revised to incorporate the comments from the Open House meeting and was forwarded to the Planning Commission. A public hearing was held and the plan was recommended to the Town Board.

B. COMMUNITY DEMOGRAPHICS

Population

Between 1990 and 2000, the Town of Minocqua's growth rate exceeded both Oneida County and the State. According to the U.S. Census, the 2000 population of the town was 4,859, up 1,373 persons since 1990, representing a 39 percent increase in population.

Table 1: Population Trends, displays the growth over the same decade for the surrounding towns and the county. Only the Town of Little Rice grew more in terms of percentage, but they have a much smaller population than Minocqua. All of the area grew at rates greater than the county.

Table 1: Population Trends				
Name	1990	2000	Increase	1990 to 2000
Town of Minocqua	3,486	4,859	39%	1,373
Town of Hazelhurst	927	1,267	36%	340
Town of Little Rice	196	314	60%	118
Town of Lynne	157	210	33%	53
Town of Woodruff	1,634	1,982	21%	348
Oneida County	31,679	36,776	16%	5,097

Source: US Census 1990 & 2000.

If the ten-year growth trend were maintained, the town would see its population increase by 1,895 persons for a total population of about 6,754 in 2010.

Households

The number of households in the town has grown from 1,314 in 1990 to 2,189 in 2000. A household is defined as all persons living in a housing unit.

In 2000, of all the households, 68 percent were family households, while the other 32 percent were non-family households. Almost thirty-seven percent of all households included someone 65 years old or older, while only twenty-three percent included someone 18 or younger. The average household size was 2.22.

Age

The number of people aged 65 and older that reside in the community increased fifty-eight percent over the last decade. Meanwhile the number of persons Under 5 only increased 28 percent over that same period. Both are an indication of an aging population. See Table 2: Town Age Breakdown.

Table 2: Town Age Breakdown			
Age Group	1990	2000	1990 to 2000 Change
Under 5	747	954	28%
5 to 64	1,987	2,716	37%
65 plus	752	1,189	58%
Total:	3,486	4,859	39%

Source: US Census 1990 & 2000.

Educational Level

According to the 2000 U.S. Census, educational levels, of the 3,671 persons aged 25 years and older, showed that 1,076 had completed high school and 612 had completed college.

Household Income

The 1999 median household income in the town was \$40,333. This is more than Oneida County, but less than the State level, which were \$37,619 and \$43,791 respectively.

Of the nearly 2,200 households in the town, about 30 percent reported incomes less than \$24,999; while about 10 percent reported incomes above \$100,000. The 2000 Census reported that 6.5 percent of the town's population had incomes below the poverty level.

Employment

The Town is located in the heart of the "northwoods" and as such, it is a major tourist destination for thousands of visitors each year. During the summer and on weekends during the remainder of the year the town hosts many visitors and part-time residents. These visitors and part-time residents have a major economic impact on the community.

Between 1990 and 2000, the town's employed residents increased 39 percent, from 1,582 to 2,206. The two employment sectors with the most employed in 1990 were Professional and Retail. That order did not change in 2000; however, the third and four sectors with the most employed did change. In 1990 Construction was third, followed by Personal, Entertainment and Recreational Services. In 2000 the order changed, now Personal, Entertainment and Recreational Services was third, followed by Construction. Table 3: Employment displays the 1990 and 2000 employment by sector information.

Table 3: Employment by Sector			
Sector	1990	2000	1990 to 2000 Change
Ag., Forestry, Fishing and Mining	62	25	-60%
Construction	162	159	-2%
Manufacturing	96	123	28%
Transportation, Com. Public Utilities	104	74	-29%
Wholesale	15	39	160%
Retail	392	391	-2%
Finance, Insurance and Real Estate	78	128	64%
Business & Repair Services	44	96	118%
Personal, Entertain. & Rec. Services	139	283	104%
Professional	398	816	105%
Public Administration	92	72	-22%
Total Employment:	1,582	2206	39%

Source: US Census 1990 & 2000.

Attachment B contains U.S. Census information, a complete set for 1990 and the released 2000 data.

2. HOUSING

Background:

The 1990 Census indicates that there were 3,716 total housing units in the town. All but 913 of these units had complete plumbing facilities and only 29 did not have telephone service. Nine hundred and three of these units were built between 1980 and 1989, and five hundred and forty four units were built before 1939.

By 2000, there were 4,284 housing units in the town, an increase of 15 percent since 1990. Almost half or 46 percent of the town's housing units are seasonal. Compared to the statewide average of about 6 percent. Of the occupied units, nearly 79 percent are owner-occupied. The average persons per household was 2.22. However, a major segment of the housing market is seasonal homes. Over 45 percent of the total housing units are seasonal.

As a result of the projected population increase, the town needs to add at least an additional 854 housing units to accommodate local population growth. However, as the persons per household drops the overall number of new units will increase. The amount of land consumed by future residential development will vary depending on where the development takes place. The demand for seasonal housing will continue to be strong. There will also be a growing demand for elderly assisted living units as the town's population continues to age.

Goals:

1. Provide a diversity of housing opportunities available to all ages and income levels throughout the community.
2. Encourage affordable housing for both families and senior citizens.
3. Allow apartments, condominiums, and other forms of higher density residential development in appropriate locations.
4. Encourage housing specifically for the elderly, particularly congregate housing and other types of housing associated with health care.
5. Maintain the quality and condition of existing housing by adopting and enforcing property maintenance codes.
6. Encourage affordable accommodations for seasonal employees.
7. Encourage neighborhood designs that support a range of transportation choices.

3. TRANSPORTATION

Background:

The transportation system in the town includes all the federal, state, county and local roads. The local transportation network is an important factor for the safe movement of people and goods, as well as for the physical development of the town. There is no transit, rail, air or water transportation service within the town's jurisdiction.

Three major US Highways serve Oneida County, USH 51, USH 8, and USH 45. USH 51 runs north south through the western central portion of the county and the Minocqua area. USH 8 runs east west through the southern part of the county and the City of Rhinelander. USH 45 runs north south on the eastern side of the county. Three state highways also cross the county. Highway 70 runs east west of the northern edge of the county and through the Woodruff area. Highway 17 serves the central portion of the county running north south through the City of Rhinelander. Highway 47 runs in a southeast-northwest track through the City of Rhinelander and also the Minocqua/Woodruff area.

These highways link the county with the rest of the state and nation. These highways also bring tourists and other visitors to the county. There is no doubt how important these roadways are to the vitality of the county.

The road system in the Town of Minocqua plays a key role in development by providing both access to land and moving people and goods through the area. The interrelationships between land use and the road system makes it necessary for the development of each to be balanced with the other. Types and intensities of land-uses have a direct relationship to the traffic on roadways that serve those land-uses. Intensely developed land often generates high volumes of traffic. If this traffic is not planned for, safety can be seriously impaired for both local and through traffic flows. See the Transportation Map on page 00.

The Town of Minocqua road network consists of about 204 total miles. This is made up of US Highway, state highway, county highway, and local roads. See the following table.

Table 4: Transportation System	
Type:	Miles:
State/Federal Highway	16
County Highway	1
Paved Town Roads	129
Unpaved Town Road	58
Total Miles:	204

Source: DOT & GIS Software calculations.

The town utilizes a WisDOT PASER computer program to maintain an inventory of its local roads and monitor conditions and improvements of its roads. This system will enable the town to better budget and keep track of roads that are in need of repair.

Traffic generated and attracted by any new land-use can increase the volume throughout the highway system and increase congestion on the roadway system keeping property from reaching its full potential value. Even without the creation of new access points, changes in land-uses can alter the capacity of the roadway because more, and possibly different, kinds of vehicles than before, enter, leave, and add to the traffic flow. Uncontrolled division of land tends to affect roads by intensifying the use of abutting lands, which impairs safety and impedes traffic movements.

In terms of traffic volumes, there are Department of Transportation annual average daily traffic (AADT) counts for several locations in the area. One is on Highway 51 south of the Island. The 2000 AADT count was 13,300. Another count was taken on Highway 70, just west of Highway 51. That AADT count was 14,300. Even further north on Highway 51, just north of Highway 47, the AADT count was 16,700. These counts need to be monitored as a way to gauge the increase of traffic in the area. Clearly, there are substantial volumes of traffic moving through the area.

Wisconsin was one of the first states to recognize this relationship between highway operations and the use of abutting lands. Under Chapter 233, the Department of Transportation (WisDOT) was given the authority to establish rules to review subdivision plats abutting or adjoining state trunk highways or connecting highways. Regulations enacted by the WisDOT establish the principles of subdivision review. They require new subdivisions to: (1) have internal street systems; (2) limit direct vehicular access to the highways from individual lots; (3) establish building setbacks; and (4) establish access patterns for remaining unplatted land.

There are only two rustic roads in Oneida County and both are in the Town of Minocqua. The Rustic Roads program was created in 1973, by the state, to preserve what remains of scenic, lightly traveled country roads for the leisurely enjoyment of bikers, hikers and motorists. As a rustic road, there should be no major development that would change its “rustic” character. The two rustic roads are Blue Lake Road to Mercer Road and Sutton Road to Camp Pinemere Road. They are identified on the Transportation Map. These roads are designated as Rustic Road 58 and 59 respectively.

Goals:

1. Limit new development to existing paved roads that can handle the additional use.
2. Continue to utilize PASER software to inventory and rate the local roads.
3. Encourage an integrated, efficient and economical transportation system that affords mobility, convenience and safety that meets the needs of all citizens.

4. NATURAL RESOURCES

Background:

The Town of Minocqua has an abundance of natural resources and is one of the most popular vacation areas in Wisconsin due to the abundance of lakes and the beautiful wooded landscape. This section of the plan provides a general overview of the physical and natural features that make up the area, including topography and drainage, surface water features, watershed characteristics, wetlands, groundwater and soils.

Climate

The town and county are classified in the continental climate type. The summers have warm but not excessively hot days and cool nights. Winters are long, cold, and snowy with an annual seasonal snowfall of 53 inches. Snow covers the ground and ice covers the lakes from December to April. Mean annual precipitation is almost 30.66 inches. The growing season generally extends from late May to early September, for an average frost-free growing season of 124 days. Prevailing winds come out of the northwest from late fall through spring, and from the southwest during the remainder of the year.

Geology

The town and county were covered by glacial ice during the most recent glaciation period. Glacial activity formed several distinct types of glacial deposits. End moraine deposits are composed of glacial till which is an unsorted mixture of gravel, sand, silt, clay and occasional boulders. Adjacent to the end moraine deposits are glacial ground moraine deposits. A glacial ground moraine is also composed of till and gives rise to the rolling undulated type topography.

Scattered areas of outwash were deposited throughout the county and these areas are characterized by relatively permeable sand and gravel laid down by glacial melt waters. The numerous lakes, streams, and wetlands of the county are directly related to the glacial action. The surface water system reflects the melting effect of the ice sheet that covered this part of the state.

Many swamps and marshes exist due to two factors. First, many areas have poor drainage, and secondly, some of these areas were former lakes that have gone through, or are in the process of becoming extinct lakes. Plant succession will eventually change these lakes into bogs and finally wet forest communities, commonly associated with black spruce, tamarack, cedar, and ash forests.

Groundwater

Groundwater is an important resource. It is the source of almost all water used for domestic, agricultural, commercial and industrial purposes in the county. According to the

Oneida County Soil Survey report the main aquifer in the county is glacial drift, particularly glacial outwash and ice-contact sand and gravel. The total mineral content is less than 150 milligrams per liter. The main components in the water are calcium, magnesium, and bicarbonate ions. A large concentration of iron is in the groundwater throughout the county, but is not considered to be a health hazard.

The groundwater quality in the area is generally good however the county is susceptible to groundwater contamination in some areas due to the predominance of sandy soils and shallow depth to groundwater. Contamination to groundwater can be a result from various sources such as: improperly placed or leaking landfills sites, private septic systems, excessive use of lawn fertilizers or pesticides, leaks from municipal sewer pipes, and seepage from nonmetallic mining operations. Runoff from livestock yards and urban areas, improper application of agricultural pesticide or fertilizers and leaking petroleum tanks and spill can also add organic and chemical contaminants in locations where the water table is near the surface.

In the ten year period from 1989 to 1999, UW-Extension organized a private well testing project for homeowners. Nearly 1,200 water samples were submitted to the Central Wisconsin Groundwater Center for analysis. A number of different tests were performed on the samples. Included within this suit of analysis were measurements on nitrate and nitrite levels, the saturation index, and Coliform bacteria. Only 3 percent of the samples tested had levels that exceeded this limit. The water samples were also by and large clean with respect to Coliform bacteria. During the ten year testing period, only 8 percent of all samples submitted tested positive for these bacteria. Of those that tested positive, some were the result of poor sampling technique and not a contaminated water supply.

The saturation index is a measure of the corrosivity of the water source. Negative values correlate with corrosive water. Corrosive water can become a health risk for private homeowners who have lead solder or copper pipes as this water dissolves these metals and contaminate a home's drinking water supply. Corrosive levels were found in 62 percent of the water samples tested. Iron concentrations are also an area of concern for private homeowners in Oneida County. Water testing is encouraged every two to three years. Iron concentrations greater than 0.3 mg/L can cause brown precipitates, discolored water or orange stains. These concentrations are very common in the county. Filters are available to remediate iron concentrations, yet these can be costly.

Topography and Drainage

The surface features of the town and county have resulted from the various stages of glaciation during the last ice age. The areas landscape is primarily gently rolling heavily wooded countryside. The area is dotted with many small lakes formed from ice blocks that were buried in outwash deposits as the glaciers melted and receded. The entire county lies within what geologists call the “Northern Highlands” region of Wisconsin which is a gently arched dome underlain by crystalline rock which is overlain by thick glacial deposits. Much of the area is a pitted outwash plain, with some of glacial till or glacial drift.

In the county, the topography ranges between 1,460' to 1,735' above sea level. This represents a rather uniform surface without extremes in topography if compared to other areas of the state. The drainage pattern in the county is irregular and characterized by a number of lakes, bogs, and marshes. The Wisconsin River and its tributaries drain most of the county. The Wolf River and its tributaries drain a small acreage in the southeastern part of the county. The extreme northwest corner of the county drains through Squaw Creek and into the Flambeau-Chippewa River system, which empties in the upper Mississippi River.

Surface Water

There are many lakes throughout the Town of Minocqua. According to the DNR Lake inventory, there are forty-seven named lakes in the town. A listing of these lakes can be found in Attachment 00. Several of these lakes cross into surrounding towns, such as Tomahawk, Squaw and Willow Flowage. Combined, nearly 13,000 acres of surface water is located in the town.

The WDNR describes Oneida County as having excellent watershed characteristics as a result of high percentage of land in forest cover. Oneida County contains approximately 68,874 acres of surface water. One of the highest concentrations of natural lakes in the world is found in Oneida County along with Vilas County to the north. In Oneida County along there are 426 named lakes with a total of 66,545 acres and 701 unnamed lakes for a total of 2,056 acres. The largest natural lake is Lake Tomahawk, which covers 3,627 acres. The Willow Reservoir is the largest artificial body of water in the county with 5,135 acres. The deepest lake is Clear Lake, which is approximately 100 feet deep. The county also contains 830 miles of streams, of which about 192 miles are classified as trout streams.

Approximately 20 percent of the lakes in the county are impoundments. Water control structures are maintained on some lakes for regulation of flow and particularly for maintaining water levels by the Wisconsin Valley Improvement Company (WVIC). The other natural lakes in the county are small with 806 lakes under 20 acres. A complete listing of lakes in the town is located in Attachment C.

Table 5: Oneida County - Lake Inventory

Lake Size (acres)	Number of Lakes	Percent of Total Lakes
Less than 1.0	402	35.7%
1.1 - 5.0	229	20.3%
5.1 - 10.0	95	8.4%
10.1 - 15.0	45	4.0%
15.1 - 20.0	38	3.4%
20.1 - 50.0	131	11.6%
50.0 - 100.0	53	4.7%
Greater than 100.1	134	11.9%
Total	1127	100.0%

Source: Survey Water Resources, Wisconsin Conservation Department, 1966.

Wetlands

Wetlands occur in areas where water stands near, at or above the soil surface during a significant portion of most years. Vegetation is generally aquatic in nature and may vary from water lilies and rushes in marsh areas to alder and tamarack in lowland forests. Wetlands perform many roles in the proper function of the hydrologic cycle and local ecological systems. In a natural condition, they control floodwater by moderating peak flows, and some may act as groundwater recharge sites. All wetlands have valuable water purification capabilities and make significant contributions to surface and groundwater quality. Wetlands are also breeding and nesting grounds for waterfowl and many other animals, which depend on aquatic habitats.

Wetlands perform many indispensable roles in the proper function of the hydrologic cycle, and local ecological systems. In a natural condition, they control floodwater by moderating peak flows, and some may act as groundwater recharge sites. All wetlands have valuable water purification capabilities and make significant contributions to surface and groundwater quality. They act as settling areas for inflowing streams as well as functioning in the reduction of water nutrients through uptake of these compounds into plant tissues. They also have a buffering affect on water acidity or alkalinity and are helpful in the elimination of harmful bacteria which may be found in surface or groundwater. They also serve as breeding and nesting grounds for waterfowl and many other animals that depend on aquatic habitats; they are an important recreational, education, and aesthetic resource. In many instances, wetlands serve as the combined roles of flood moderation, water purification and aquatic habitat, wetlands are important to the maintenance of downstream habitat as well.

Wetlands generally occur in areas where water stands near, at, or above the soil surface during a significant portion of most years. Vegetation is generally aquatic in nature and may vary from water lilies and rushes in marsh areas to alder and tamarack in lowland forest. Swamps, bogs, marshes, potholes, wet meadows, and sloughs are all wetlands. The soils in these areas are usually saturated during the growing season within a few inches of the surface.

When drainage of wetlands occurs, or drainage patterns are altered, the water table is locally lowered and soils are exposed to oxidation at depths usually saturated. Nutrients held in the wetland soils can then be leached away. Heavy siltation can occur downstream as water previously held by the soils is swept away. Wildlife population and habitat in drained areas and downstream locations may be negatively affected, lowering the recreational and educational value. Eradication of wetlands can also occur in urban locations through the use of fill material. This can destroy the hydrologic function of the site and open the area to improper development. The Wisconsin Department of Natural Resources (WisDNR) has delineated the location of wetlands and has standards for managing wetlands

Under natural conditions, the aquifers generally receive clean water from rainfall percolating through the overlying soils. However, contamination of groundwater reserves can result from such sources as percolation of water through improperly placed or maintained landfill sites, private waste disposal located near the water table, leaks from sewer pipes, and seepage from some types of mining operations into the aquifer. Runoff from livestock yards and urban areas and improper application of agricultural pesticide or fertilizers can also add

organic and chemical contaminants in locations where the water table is near the surface. Protection of these groundwater reserves is necessary to ensure adequate water to domestic, agricultural and commercial uses. If groundwater is not protected, contamination could result; thus, endangering the quality and supply of the water in the town.

Forest cover provides many vital functions which are diverse in nature; forested lands provide for recreational opportunities, scenic beauty, economic commodity (timber products), and wildlife habitat as well as protection of sensitive environmental areas. In regard to the latter, tree cover is essential, especially for erosion control and to reduce effluent and nutrient flows into surface water bodies and courses.

There are approximately 230,950 acres or 32 percent of the entire county that are delineated as wetlands by the Wisconsin Department of Natural Resources. Wetlands present major problems for the use of land for development. These wetlands are also critical for migratory waterfowl and other wildlife habitat.

Wetlands in the town and county include coniferous and hardwood forested wetlands, scrub-shrub wetlands, and emergent wetlands including marshes, fens and wet meadows. Northern white cedar, balsam fir, black spruce, and tamarack typically dominate coniferous-forested wetlands. Common species in hardwood forested wetlands are black ash, yellow birch, and red maple. The scrub-shrub wetlands are characterized by the presence of various alder, willow, dogwood, and sedge species and blue-joint grass.

Flood Plains

Floodplains are a natural feature not conducive to development. Inappropriate location of roadways in floodplains can result in serious flood damage. Periodic roadbed saturation and embankment washing eventually lead to an increase in road maintenance costs. In addition to roads, floodwaters can create a number of problems by damaging foundations of homes, electrical equipment, heating units, etc. Basements constructed on permeable sands and silts of floodplains are especially susceptible to damage resulting from seepage through walls. Thus, it is advisable to restrict development in such areas.

Water Quality

Overall, there are no major or widespread water quality problems regarding the town and county surface waters. Pollution of surface water generally is minimal because the county is relatively undeveloped and there is little municipal or industrial waste according to the WDNR Water Quality Management Plan for the Upper Wisconsin River Basin. The streams exhibit good water quality with the majority supporting cold water fish communities and warm sport fish communities. There is some contamination concerns, however, mostly due to mercury contamination. Mercury contamination is a source of pollutant that comes from industries, utilities and incinerators via other states by the wind. There are several lakes and streams in the county with contaminated fish. Fish are routinely collected by WDNR and analyzed for mercury and organic contaminants. Approximately one third of the lakes sampled by the WDNR has issued fish consumption advisories. The DNR is proposing to

have a regional plan to deal with mercury contamination from Minnesota, Michigan and Wisconsin. These analyses form the basis for public fish consumption advisories issued by the WDNR which appear in the WDNR publication, *A Health Guide for Eating Fish in Wisconsin*.

Many of the waterbodies with fish advisories have been included on the WDNR 303(d) list because they are not meeting water quality standards due to the mercury contamination. The WDNR maintains this list per requirements of the U.S. Environmental Protection Agency (EPA), which lists the waterbodies that do not meet water quality standards under the Clean Water Act. This list is commonly known as 303D, corresponding to the applicable subsection of the Act. Currently there are 43 waterbodies in Oneida County on the 303(d) list; with the majority of them being lakes. Forty-two (42) of these waterbodies are listed due to fish consumption advisories. The DNR annually updates this list and issues a report.

Outstanding/Exceptional Resource Waters

The WDNR has given special designations to water resources throughout the state of Wisconsin that has the highest water quality and fisheries in the state and therefore deserve special protection. No discharge is allowed to these waters unless its quality equals or surpasses the quality of the receiving water body. This classification includes wild and scenic rivers (Upper Wolf River above the Menominee Indian Reservation), and the best trout streams. There are five lakes, one creek and one river that have been designated as outstanding resource waters (ORW) in Oneida County.

There are 16 creeks or streams in Oneida County that have been designated as exceptional resource waters (ERW). This designation means that the creeks have excellent water quality and valued fisheries but already receive and or may receive wastewater discharges. This list currently includes all Class I trout streams that are not outstanding resource waters and other waterbodies with significant resource values and excellent water quality. The antidegradation procedure for these waters are similar to outstanding resource waters, except that some minimal degradation from a new wastewater discharge may be allowed if that discharge is necessary to correct an environmental or public health problem.

Watershed Characteristics

There are 15 watersheds contained completely or partially within Oneida County. The majority of Oneida County drains into the Wisconsin River. A small area in the southeastern part of the county drains into the Wolf River. A small portion of the northwest corner of the county drains to the Upper Chippewa River Basin, which then drains to the Upper Mississippi River. The Town of Minocqua is located in two basins. One is the upper Wisconsin River Northern Sub-Basin and the other is the Upper Chippewa River Basin. See the watershed maps in Attachment D.

Upper Wisconsin River Northern Sub-Basin

The Upper Wisconsin River Northern Sub-Basin, as defined in the 1996 DNR Report,

lies in northern Wisconsin and drains 2,352 square miles. It includes most of Oneida County and portions of Vilas, Forest, Lincoln, Langlade, Taylor and Price Counties. There are twelve watersheds in Oneida County within this basin, two in the Town of Minocqua. Overall there is no major widespread water quality problems within the basin because most of the watersheds are rural and heavily forested.

According to the Upper Wisconsin River Northern Sub-Basin Water Quality Management Plan, most of the main stem of the Wisconsin River is classified as supporting a balanced warm water fishery and aquatic life community. A very dense game and non-game fishery exists. The greater redhorse and pirate perch, which are on the Wisconsin's watch species list, are found in portions of the Wisconsin River. There are three ambient water quality monitoring stations on the Wisconsin River in the northern sub-basin and two of the three are located within the county. The water quality monitoring stations are at Hat Rapids Dam, and the Phillips Street Bridge in Rhinelander. Data from these stations showed overall good water quality in these areas of the river.

The two watersheds that cover the town are the Middle Tomahawk River Watershed and the Upper Tomahawk River Watershed.

Upper Chippewa River Basin

A small area in the northwestern portion of the county, all of which is in the Town of Minocqua, flows to the Upper Chippewa River Basin which is the Upper South Fork Flambeau River Watershed and the Bear River watershed. These two watersheds are mainly forested and wetlands with no water quality data available for these watersheds.

Soils

Soils are an important natural resource. Knowledge of the potential uses and/or limitations of soil types is necessary to evaluate crop production capabilities or when considering construction of buildings, installation of utilities, or other uses of land. Problems that limit development on certain soils include poor filtration, slow percolation, flooding or ponding, wetness, slope, and subsidence. A "severe" limitation indicates that one or more soil properties or site features are so unfavorable or difficult to overcome that a major increase in construction effort, special design, or intensive maintenance is required. For some soils rated severe, such costly measures may not be feasible.

The soil mantle in Oneida County consists predominantly of sands, which are level or gently rolling. The exception to this is a region of grayish and sandy loams which are gently rolling and often stony. This region occupies an area starting north of McNaughton and extending in a southerly direction on a line west of the Wisconsin River and southeast on a line passing near Monico. This region generally occupies a portion of the south central and southeast parts of the county with a lobe extending north of Rhinelander along both sides of the Wisconsin River. Principal land uses for the sandy soil areas are forestry, recreation, irrigated cash crops, and cranberry production. Principal land uses for grayish and sandy loams are forestry, limited farming, recreation, and intensive cash cropping of potatoes in local areas.

The soils of the county are nearly acid, droughty in nature and of low fertility.

The following are descriptions of the major soil types found in the Town of Minocqua:

Goodman-Monico Cable Association

Nearly level to moderately steep, well drained to very poorly drained, silty, loamy, and mucky soils on drumlins and moraines.

Greenwood-Dawson Carbondale Association

Nearly level, very poorly drained, peaty and mucky soils on outwash plains and moraines.

Au Gres-Croswell-Kinross Association

Nearly level and gently sloping, moderately well drained to poorly drained, sandy and mucky soils on outwash plains.

Sayner-Vilas Association

Nearly level to steep, excessively drained, sandy soils on outwash plains and in areas of pitted outwash.

Padus-Pence Association

Nearly level to steep, well drained and moderately well drained, loamy soils on outwash plains and in areas of pitted outwash.

Keweenaw-Vilas Association

Nearly level to steep, moderately well drained, well drained, and excessively drained, loamy and sandy soils on drumlins, water-worked moraines, and outwash plains and in areas of pitted outwash.

See the Soils Map.

Natural Areas/ Special Features

Oneida County has many quality natural areas. Areas listed here were identified by the WDNR because of unusual wildlife values, geologic features, mature timber, plant assemblages, or educational values.

Throughout the state, there are little remains of natural plant and animal communities that are untouched by any type of exploitation. Oneida County has 1,333 acres of State Natural Areas that contain untouched natural plant and animal communities. These small, but precious areas are often the last refuges for rare and endangered plants and animals. Unique and significant geological and archaeological features are included within these natural areas.

State natural areas are devoted to scientific research, the teaching of conservation and natural history, and especially to the preservation of their natural values for the use of future generations. The WDNR Bureau of Endangered Resources and the Natural Areas Preservation Council identified these high quality natural areas. These areas are not intended

for intensive recreational uses like picnicking or camping. Preservation is accomplished by designation of tracts already in public ownership through cooperative management agreements or by acquisition of privately owned tracts.

There are three natural areas identified in the town. One is the Finnerud Pine Forest. This is a 120 acre tract that has large red pines, some in the 20 plus inch class. The area also has several mature white pines, red oak, white birch and red maple. Ink Pot Lake is another of these areas. It is in state ownership and has not been logged since the late 1800's. The Minocqua Chain of Lakes Islands is the third natural area. There are several islands within the chain that are undeveloped and scenic. Some of these have been closed to the public because of erosion problems.

Another area of local interest is Winter Park. This area is located in the central area of the town and has a variety of trails for snowmobiling and cross-country skiing.

Wildlife and Habitat

The wildlife in the town and the county is representative of the northern forested areas. The mammals include timber wolf, black bear, white-tailed deer, coyote, porcupine, bobcat, beaver, red fox, otter, raccoon, skunk, red squirrel, mink, and other small animals. Over the years, both moose and elk have been sighted. Ruffed grouse and woodcock are common upland game birds. The county is a migration path for some ducks and geese. Wood ducks, mallards, black ducks, and blue-winged teal are common throughout the county. Loons, herons, bald eagles, osprey, and several species of hawks, owls, woodpeckers, and songbirds nest in the county. The wildlife species in any given area of the county depends on the growth stage of the forest. Harvesting methods and practices affect the kinds and numbers of wildlife species that will thrive in the area.

The following features were identified by the WDNR wildlife biologists as important wildlife habitat in the area:

Lakes

The dense concentrations of lakes in the area is regionally significant for populations of bald eagles, osprey, common loons, river otter, mallard ducks and beaver. Wild riverbeds occur on some of the county's lakes and streams which is an important resource for waterfowl and other wildlife.

Sandy Soils

The area's sandy soils once supported a regionally significant mixed forest of white pine, red pine, white birch, and aspen. Today young aspen forests are most common and white birch is rapidly declining. The county contains a regionally significant component of red oak in its forest and white and red pine are slowly on the rise.

Wetlands

The area's wetlands are mostly forested wetlands with tamarack and black spruce. The timber on the forested wetlands was heavily harvested in the past, but the wetlands were never drained for agriculture. Most of the original wetlands remain intact and several large wetlands in the county are regionally significant.

Wild Country

Large portions of the area have limited residential or commercial development and remain relatively wild, with the exception of timber harvesting. This generally wild character enables populations of gray wolf, black bear, and bobcat to occur.

Industrial Forest

Much of the area's lands are owned by the forest industry. The forest industry actively manages its land for industrial production of forest products. Partially because of this industrial ownership across the county, Oneida County has more forests in the seedling sapling age class than any other Wisconsin county.

Public Land

There are many acres of public land within the county that provide a great deal of wildlife habitat. The DNR's Willow Flowage Resources Area is 16,000 acres, much of which is in the Town of Minocqua, which protects most of the shoreline and surrounding backlands of the Willow Flowage. The DNR Woodboro Wildlife area is 2,500 acres and protects several small, shallow lakes and surrounding uplands and wetland habitat.

The DNR is a major land-owner in the town. See the Land Ownership Map.

Fisheries

According to the Surface Water Resources Report for Oneida County, drainage and spring lakes have the most varied fishery, such as muskellunge, northern pike, walleye, bass, and panfish. These lakes have the greatest carrying capacity or standing crop of fish. Seepage and drained lakes support more of the bass panfish and have a lesser carrying capacity. Rivers supporting warm-water game fish populations are generally those having a width greater than 40 feet. The smaller streams between 20 and 40 feet other than trout streams may contain game fish species but due to difficulty of fishing are not utilized greatly by anglers. The numerous small streams contain mostly forage species except where cold-water conditions favor trout populations.

The fish associations and population densities are contingent upon criteria such as water quality, lake type, dissolved oxygen, and depth. Shallow lakes tend to have winterkills, which eliminates species that require a good oxygen supply. Generally, shallow lakes, less than 8 feet deep, of the seepage or drained type are subject to this condition. Shallow drainage and spring lakes usually have sufficient water exchange to maintain suitable oxygen levels however there are exceptions.

Goals:

1. Protect natural areas, including wetlands, wildlife habitats, lakes, woodlands, open spaces and groundwater resources.
2. Protect the appearance of the USH 51 and STH 70 West corridors by creating appearance guidelines which limit the number and size of signs, establish setbacks and buffer vegetation strips, and guide the types of land uses occurring in these highway corridors.
3. Protect the water quality in the lakes and other water bodies through zoning and land division regulations which prevent pollution from erosion and sedimentation. Such regulations should address erosion both during and after construction.
4. Encourage the extension of public sewers where development densities and/or soil conditions are inadequate for on-site septic treatment and water quality is threatened.
5. All timber cutting should be done in such a manner that a protective buffer of 50 to 60 feet is maintained along all paved public roads and water bodies.
6. Protect surface and groundwater sources from contamination by dumping, accidental spillage of toxic or hazardous materials, and other forms of pollution.
7. Require major development, to provide on-site stormwater detention or retention basins in order to prevent excessive runoff and contaminated stormwater from entering surface water bodies.
8. Discourage forest fragmentation throughout the Town.
9. Preserve cultural, historic and architectural sites.
10. Ensure that all new development in the town does not negatively impact environmental resources or adjoining property values.

5. LAND-USE

Background:

Much like the county, the Town of Minocqua has a substantial amount of forestland. Over 80 percent of the land surface is forested and the remaining land is being used for residential, commercial, industrial, agriculture, and other urban land uses.

Existing Land Use:

Knowledge of the existing land use patterns within a town is necessary to develop a desired “future” land use pattern. In general, forested lands and concentrated residential and commercial development dominate the town. Commercial uses are concentrated all along Highway 51, which runs north and south on the eastern edge of the town, while residential development is concentrated around the “Island” area of the town and on the many lakes located in the town. The rest of the town is forested. However, there has been a recent trend of forestry land being converted to residential uses. This development has generally been scattered and is difficult for the town to serve with town services. See the Existing Land Use Map.

The following is a discussion of the major land uses in Oneida County and the Town of Minocqua.

Forestry Uses

Much of the county contains a mixture of hardwood and conifer stands. In total the county contains about 570,000 acres in forest. Of this about 400,000 acres are commercial forests, much is owned and operated by firms for the production of lumber, such as Consolidated Papers, Four States Timber Venture, Wausau Paper Mills Company, and Wisconsin Valley Improvement Company.

In the Town of Minocqua there are about 88,000 acres of forest. Once outside the Highway 51 corridor along the east side of the town, the rest of the town is almost all forest, lakes and wetlands.

Agriculture Uses

Today there is less agricultural land in Oneida County than early in the 1900's. The peak in agriculture occurred in 1935 when 16 percent of the county was farmland. Farm acreage then began to decline and in 1959 nearly 10 percent or approximately 77,000 acres remained in farmland. The last state licensed dairy farm left Oneida County in 1999. Today, there are about 40,000 acres being used as farmland. The dominant use is for two major specialty, cranberries and Christmas trees.

In the Town of Minocqua there are about 160 acres of agricultural uses. There is almost no agricultural uses left in the town. One area of cranberry bogs exists in the southwestern corner of the town. Some scattered Christmas tree production also exists.

Residential Uses

Oneida County has experienced substantial residential development in the past decade. The major concentrations of population in the county are in the Rhinelander area and the Minocqua area. Much of the residential development in county has taken place in the town. Since 1990, Minocqua has averaged almost 88 new dwelling units annually.

The majority of residential development in the town is located along the many lakes and in the “urban” are or the “Island” area of the town, near the intersection of Highway 51 and Highways 47 and 70.

As Table 6: Town Building Statistics indicates, the town has experienced consistent growth for the issuing of building permits and sanitary permits. Between 1990 and 2000, 468 new lots were created in the town covering a total of 933 acres.

TABLE 6: Town of Minocqua Building Statistics

Year	Building Permits	New Dwelling Units	Sanitary Permits	Subdivisions		
				Total	Number of Lots	Total Acres
1990	270	68	105	5	15	20.69
1991	308	69	105	11	37	83.40
1992	310	74	114	11	39	42.88
1993	336	91	141	9	56	84.48
1994	420	72	143	15	72	136.78
1995	362	54	126	14	56	112.36
1996	415	80	151	14	60	171.91
1997	478	73	144	10	39	73.05
1998	574	122	197	7	20	27.14
1999	531	89	160	9	35	76.95
2000	437	87	144	8	39	104.06
Total s:	4,541	879	1,530	113	468	933.70

Source: Town of Minocqua data.

In total there are about 4,400 acres of residential uses in the town. Most of this is concentrated in the “Island” area and along the major lakes in the northern half of the town. Development is concentrated on Minocqua, Blue, Kawaguesaga, Shisebogama, Squirrel, Diamond and Booth Lakes. There are four smaller lakes with some development in the southern half of the town. These are Swamsauger, Pier, Skunk and Bear Lake.

Commercial / Industrial Uses

Commercial and industrial development in the town and county is relatively minimal. There is only one major industrial park in the county and that is in Rhinelander. There are some scattered industrial uses throughout the county. The most common manufacturing found in the area is the lumber and wood products industry. Commercial uses are concentrated in the City of Rhinelander and the Town of Minocqua and along the county and state highways. There are scattered commercial uses throughout the county geared toward tourism.

In Minocqua the majority of the uses are commercial. There is no “industrial” park. In total there are about 700 acres of commercial land uses.

Other Uses

Other land uses in the town include surface water, roadways and their rights of way and open space. Together these amount to about 14,000 acres.

Proposed Land Use:

The land use plan map represents the long-term land use recommendations for all lands in the town. Although the map is only advisory and does not have the authority of zoning, it is intended to provide local officials with the land use desires of the community. The Land Use Plan Map is designed to group land uses that are compatible and to separate conflicting uses. An essential characteristic of any planning program is that it be ongoing and flexible. Periodic updates to the plan are needed to maintain that it is reflective of current trends. A Land Use map is not a zoning map and it does not have the authority of zoning.

Six basic land use categories were developed to determine the future land use plan. Again, these categories are not zones and are not the same as zoning districts. These categories are:

- Commercial: retail and service related activities, it does not include home based businesses
- Forested: woodlands and forests with some limited agriculture
- Recreation: residential areas where personal stables are allowed
- Single Family Residential: areas for quiet seclusion for families, with limited traffic
- Rural Residential: outlying areas of low density to preserve rural character
- Mixed Residential: other types of residential uses

Using these six categories the Land Use Task Force Committee, using their broad knowledge of the town, the series of planning resource maps, the findings of the community survey and the current trends facing the town, developed the Future Land Use map. The goal was to produce a generalized land use plan map to guide the town’s growth over the next several years. See the Land Use Plan Map.

Table 7: Land Use Plan Breakdown, provides information on the number of acres identified in the land use plan for each use. The plan maintains forestry as the major land use in the town. This is followed by single family, other (which includes water and roadways) and rural residential.

Table 7: Land Use Plan Breakdown	
Land Use Category	Acres
Commercial	2,622
Forestry	66,808
Recreation	1,999
Single Family	12,995
Rural Residential	6,875
Mixed Residential	2,326
Other	13,718
Total:	107,347

Source: Calculation made using GIS software. These are generalizations only.

The goal of this land use plan is to balance individual private property rights with the town’s need to protect natural resources and property values community-wide, and to minimize the conflicts between land uses and keep the cost of local government as low as possible. Planned development where existing infrastructure exists is the easiest and most economical to provide service to for both the town and other service providers.

Goals:

1. Provide high quality public services in an efficient and cost-effective manner.
2. Seek efficiencies and savings that could be achieved through joint provision of services with adjoining units of government.
3. New development should be responsible for paying for the cost of any utility extensions or new services required for that development without unfairly burdening the existing taxpayers of the Town.
4. Land uses should be planned so that development occurs in an orderly manner and land use conflicts are avoided.
5. All residential development should be set back from the roads and buffered by either natural vegetation or evergreen plantings.
6. New development should not adversely affect the property value or livability of neighboring properties.

7. Future commercial development should be clustered in planned development districts rather than extended in a strip along the major highway corridors.
8. Strive for a “balanced economy” providing year-round, as well as seasonal, employment.
9. Encourage industry and non-retail commercial development to locate in a business park setting.
10. Promote recreation-oriented activities that would draw visitors at times other than the peak summer months in order to extend the tourism season and promote year-round tourist activity.
11. Promotion of the redevelopment of lands with existing infrastructure and public services and the maintenance and rehabilitation of existing residential, agricultural, commercial and industrial structures.
12. Encourage land uses, densities and regulations that promote efficient development patterns and relatively low municipal, state governmental and utility costs.
13. Provide adequate infrastructure and public services and an adequate supply of developable land to meet existing and future market demand for residential, agricultural, commercial and industrial uses.
14. Balance individual property rights with community interests and goals.
15. Planning and development of land uses that create or preserve the rural community.

6. IMPLEMENTATION

Background:

This Plan is intended to be a guide for local officials and town residents. By utilizing the planning principles and practices outlined within the preceding parts of this report, both public and private interests can gain a clearer picture of the impacts resulting from future growth and development in the Town of Minocqua. Foremost, the plan's purpose is to provide a framework for planning and zoning decisions in the future.

The following are suggested strategies for the implementation of the Town of Minocqua Plan:

- Upon final draft approval from the Planning Committee, the Town Board should endorse and adopt the Plan as a guide for the physical development of the town for the next several years, or until updated.
- The Town Board and Planning Commission should work to integrate the goals of this Plan within the town's ordinances, policies, and programs.

TOWN OF MINOCQUA
TABLE OF CONTENTS:

SECTION:

1	Background	1
2	Housing	5
3	Transportation	6
4	Natural Resources	8
5	Land Use	19
6	Implementation	24

ATTACHMENTS:

Community Survey Summary	A
Census Information	B
Town Lake Inventory	C
Watersheds	D
Lake Management Information	E

This plan was completed in 2002 with the assistance of the
North Central Wisconsin Regional Planning Commission (NCWRPC).

TOWN OF MINOCQUA

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**LAND USE PLAN
TOWN OF MINOCQUA
ONEIDA COUNTY**

FOR FINAL COMMENT AND RECOMMENDATION

5/28/02

ATTACHMENT A:
COMMUNITY SURVEY SUMMARY

ATTACHMENT B:
CENSUS INFORMATION

ATTACHMENT C:
TOWN LAKE INVENTORY

ATTACHMENT D:

WATERSHEDS

ATTACHMENT E:
LAKE MANAGEMENT INFORMATION