

CHAPTER 8: AGRICULTURAL, NATURAL AND CULTURAL RESOURCES

INTRODUCTION

Agricultural, natural, and cultural resources give definition to a community and strongly affect quality of life. Outside the urban areas of Winnebago County, a tapestry of working farms interwoven with stands of woodlands dot the landscape and shape the area's identity and culture. While agricultural acreage and the number of farms have been on the decline in Winnebago County, it is still an important component of the area economy. Natural features such as topographic relief, lakes, streams, wetlands and soils also have significant bearing on historic and contemporary land use and development patterns. Understanding the relationship between environmental characteristics and their physical suitability to accommodate specific types of activities or development is a key ingredient in planning a community's future land use.

GOALS

The following goals were developed for this element. Goals set direction, provide purpose and accountability and provide a roadmap. Supporting Objectives and Actions are included at the end of this element.

Type	Reference	Content
Goal	ANC1	Promote the development of urban agricultural programs and activities.
Goal	ANC2	Protect and preserve wetlands, shorelands, and other environmentally sensitive areas.
Goal	ANC3	Protect aquatic and wildlife habitat when managing development in proximity to environmental corridors, riparian areas, and woodlands.
Goal	ANC4	Protect and develop passive and active recreation resources (e.g. parks, trails, hunting and fishing opportunities).
Goal	ANC5	Promote an aesthetically pleasing natural environment throughout the city.
Goal	ANC6	Promote the on-going viability of publicly and privately owned cultural resources.
Goal	ANC7	Create a strong and vibrant cultural tourism program.
Goal	ANC8	Promote and publicize cultural events and sites within the city.
Goal	ANC9	Encourage preservation and protection of the historic built environment.
Goal	ANC10	Maintain, improve, and increase public access to the waterfront.
Goal	ANC11	Continue to improve the city's overall aesthetic quality.
Goal	ANC12	Ensure ongoing communication regarding agricultural, natural and cultural resource issues and activities.

KEY SUMMARY POINTS

The following list summarizes key issues and opportunities identified in the element. The reader is encouraged to review the “Inventory and Analysis” portion of the element for more detail.

Agricultural Resource Inventory

- a) Overall, about half (9,460 acres, 54%) of the land within the City is considered prime farmland with the majority classified as “All Areas Prime Farmland”
- b) The City has two community gardens, Community Gardens of Oshkosh and the University of Wisconsin Oshkosh Community Gardens.

Natural Resources Inventory

- a) There are no areas of steep slopes (greater than 12%) in the City.
- b) The bedrock geology of the City and the extraterritorial area is made up of two distinct formations that divide the area¹.
- c) Less than one percent (70.6 acres) of the City’s extraterritorial area has areas of high bedrock.
- d) There is about 107 acres of active limestone quarry sites in the City.

Water Resources

- a) Oshkosh is bordered by Lake Winnebago and Lake Butte des Morts.
- b) There are four named waterways within in close proximity to the City².
- c) The City and its extraterritorial area are located within the Upper Fox, Lower Fox, and Wolf River Basins.
- d) Only three percent (158 acres) of the City’s total acreage are classified as wetlands.
- e) According to the City’s 2015 Water Quality Report (Customer Confidence Report)³, the City treats surface water from Lake Winnebago for potable water and did not have any violations reported.
- f) Most areas (90.5%) within the City fall within the high water recharge potential.
- g) The City lies to the east of the main band of highest concern, but smaller areas of the St. Peter Sandstone bedrock may fall within the City’s extraterritorial planning area.
- h) Approximately 40 percent (28,740 acres) of the City and the surrounding area has groundwater present within two feet or less.

Wildlife Resources

- a) Wildlife is threatened by the negative effects of development and storm water runoff (both from urban and rural runoff sources).
- b) There are no planted woodlands and approximately 161 acres of general woodlands in the City.
- c) A review of the NHI Township Search Tool (for the towns of Oshkosh, Vinland, Winneconne, Algoma, Utica, Nekimi, and Black Wolf) database revealed a number of species (fish, bird, turtle, butterfly, and plant) for the City and surrounding towns.

Parks, Open Space and Recreational Resources

- a) The WDNR owns and manages approximately 113 acres of land within the City and approximately 627 acres within the extraterritorial area.

¹ Bedrock Geology of Wisconsin, 2005; University of Wisconsin-Extension Geological and natural History Survey

² WDNR, <http://dnr.wi.gov/water/waterDetail.aspx?key=10848>

³ Source: City of Oshkosh 2015 Water Quality Report: http://www.ci.oshkosh.wi.us/public_works/assets/pdf/CCR-2015.pdf

- b) Important environmental corridors within the City and surrounding area are associated with lake shorelines and the named and unnamed streams with natural vegetation scattered throughout the area.

Waste and Pollution

- a) According to SHWIMS, there are 328 operating sites listed for Oshkosh.
- b) A search of the database for solid waste landfills / disposal facilities indicates that there are 16 sites in the City.
- c) The closest ozone air quality monitoring site is located at the Thrivent facility at 4432 Meade Street in Appleton (Outagamie County).
- d) The 8-hour design values (ppb) were not exceeded at the Outagamie County site between 1997 and 2012.⁴
- e) Outagamie County did not exceed the primary and secondary National Ambient Air Quality Standard for particulate matter between 2001 and 2013.

Cultural Resources

- a) At the present, 36 properties / districts within the City are listed on the National Register.
- b) A search of the DHP's online Architecture and History Inventory (AHI) reveals a total of 1,777 sites listed for Oshkosh.⁵
- c) There are two museums in the City.
- d) The City is a Certified Local Government (CLG).
- e) The City has established the Oshkosh Landmarks Commission.
- f) More than 100 people lived in the area by 1840, and soon, the villages of Brooklyn, on the south side of the Fox River, and Athens, on the north, merged and officially adopted the name Oshkosh after the Menominee Chief (1795-1858).

INVENTORY AND ANALYSIS

Creating an inventory of existing agricultural, natural, and cultural resources is critical in providing the City with information to base future decisions on. The goals, strategies and recommendations for this element were shaped with these resources, and the constraints and opportunities they provide, in mind. The following provides an inventory of these resources.

Agricultural Resources Inventory

Farming and the processing of farm products is still an important source of income and employment in Winnebago County. Since agriculture is a necessary component of the county's economy, the protection of farmland is critical. However, as is occurring elsewhere in rural Wisconsin, new developments are encroaching on productive farmland. This section will assess agricultural lands in Winnebago County which has an impact on the City.

Farm and Farmland Loss

Farm and farmland losses are the result of economic pressures within agriculture as well as competition for agricultural lands from residential, commercial, industrial, and other development.

⁴ Wisconsin Department of Natural Resources, *Wisconsin Air Quality Trends*, April 2015.

⁵ Accessed 11/21/2016.

In 2007, there were about 1,001 farms (defined as any place producing at least \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year) in Winnebago County (Table 8-1). There was a net increase of 116 farms or 11.6 percent countywide between 2007 and 2012.

While the number of farms increased from 2007 to 2012, the amount of land in farms and average size of farms decreased when measured in acres. Land in farms decreased 5.2% and average size of farms decreased 15.2%.

Table 8-1: Trends in Farm Numbers, 1990 and 1997

Item	2007	2012	Percent Change
Number of farms	1,001	1,117	11.6%
Land in farms (acres)	164,014	155,520	-5.2%
Average size of farm (acres)	164	139	-15.2%

Source: USDA Census of Agriculture. Data accessed 11/21/16.

Farmland Soils

Prime farmland are generally defined as “land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. It has the combination of soil properties, growing season, and moisture supply needed to produce sustained high yields of crops in an economic manner if it is treated and managed according to acceptable farming methods”. This includes the following classifications (1) All areas are prime farmland; (2) Prime Farmland, if drained; (3) Farmland of Statewide Importance; and (4) Not Prime Farmland if drained. Soil data from the NRCS-USDA Web Soil Survey (WSS), accessed in 2015, was used to determine prime farmland.

Overall, about half (9,460 acres, 54%) of the land within the City is considered prime farmland with the majority classified as “All Areas Prime Farmland” (Map 8-1, Table 8-4). “All Areas Prime Farmland” soils are spread throughout the City. “Prime farmland, if drained” comprises much of the remainder of the City. Areas not considered prime farmland are found near the Fox River, Little Lake Butte des Morts and Lake Winnebago.

Table 8-2: Important Farmland Classes

Soil Classification	Acres	Percent
All Areas Prime Farmland	9,460.22	54%
Farmland of Statewide Importance	513.78	3%
Prime Farmland if Drained	4,844.72	27%
Not Prime or Statewide Importance	2,830.78	16%
Total	17,649.50	100%

Source: NRCS-USDA Soil Data, Accessed in 2015

Community Gardens

Community gardens provide access to local food. They allow people without access to land to grow their own food, and to share knowledge and skills. Some people find that gardening relieves stress, encourages social interaction, increases physical activity and encourages people to eat more vegetables and healthy foods. **The City has two community gardens, Community Gardens of Oshkosh and the University of Wisconsin Oshkosh Community Gardens.** Community Gardens is located off of County Highway A and Sherman Road and is

operated by Winnebago County University of Wisconsin-Extension. University of Wisconsin Community Gardens is located at 663 W. 3rd Avenue and is operated by a student organization.

Bees and Poultry

Beekeeping and the raising of chickens in urban settings has become popular in recent years. Bees' aide in pollination of garden plants and backyard orchards and provide a source of locally produced honey. The City's Sustainability Advisory Board passed urban beekeeping ordinance in 2017. In 2011, the City amended their municipal code to allow City residents to keep chickens in single and two family residential districts in the City.⁶

Natural Resources Inventory

Natural Resources act as the foundation upon which communities are formed. Identifying key natural resources in and within a close proximity of the City, and learning how to utilize, conserve, and/or preserve them may determine the future environmental health of the City. This section addresses land, water, wildlife, mineral, and recreational resources in the City, and aims to provide a baseline upon which the City can use to make future decisions that may impact these resources.

Land Resources

Soils

Soils support the physical base for development and agriculture within the City. Knowledge of their limitations and potential difficulties is helpful in evaluating crop productions capabilities and other land use alternatives such as residential development, utility installation and other various projects. Two general soil association, or groupings of individual soil types based on geographic proximity and other characteristics, are present within the City⁷.

- **Kewaunee-Manawa-Hortonville association.** These soils are located in the City and within the City's extraterritorial area. These soils consist of nearly level to sloping soils that have loamy or clayey subsoil underlain by loamy or clayey glacial till. Most of this association is used for cultivated crops. The main concerns of management are areas of seasonal high ground water. Minor soils of this association are the Korobago, Lorenzo Variant, Menasha, Neenah, Omro, Poygan, Udorthents, Whalan, and Winneconne soils.
- **LeRoy-Ossian-Lomira association.** These soils are located within a small area of the southwest portion of the City's extraterritorial area. These soils are well drained and poorly drained soils. These soils consist on nearly level to sloping soils that have silty or loamy subsoil underlain by loamy glacial till or silt loam alluvium. The majority of this association is used for cultivated crops and pasture or woodlots along the steeper or wetter edges of drumlins, knolls, and morainic ridges. Minor soils of this association are the Atterberry, Keowns, Lamartine, and St. Charles soils.

⁶ City of Oshkosh Ordinance 11-109 & 11-139.

⁷ Soil Survey of Winnebago County, Wisconsin, 1980; United States Department of Agriculture Soil Conservation Service

Steep Slopes

In general, the City and the surrounding area is relatively flat. ***There are no areas of steep slopes (greater than 12%) in the City.***

Geology, Topography and Scenic Resources

The structure of the City's bedrock and historic glacial events is largely responsible for the City's landscape. After the recession of glaciers about 11,000 years ago, Winnebago County was left with its current topography shaped by mounds of glacial till with flatter areas where limestone and sandstone bedrock often lie not far from the surface.

Elevations rise away from the shores of Lake Winnebago, which is situated along the eastern boarder of the City.

The bedrock geology of the City and the extraterritorial area is made up of two distinct formations that divide the area⁸. These bedrock formations are:

- The **Sinnippee Group** is comprised of dolomite with some limestone and shale formations. This group stretches west from the Lake Winnebago Shoreline.
- The **St. Peter Formation** is a thin layer that runs north and south through the area comprised of sandstone, some limestone shale and conglomerate.

Very small areas of high bedrock are located with the City's extraterritorial (Map 8-2). ***Less than one percent (70.6 acres) of the City's extraterritorial area has areas of high bedrock.*** Areas of high bedrock is defined as being within 70 inches of the surface.

Table 8-3 High Bedrock

MCD	High Bedrock	Total acres	Percent
City of Oshkosh	-	17,649.50	0%
Town of Oshkosh	29.57	8,894.92	0.3%
Town of Vinland	4.27	6,918.12	0.1%
Town of Winneconne	-	1,477.78	0.0%
Town of Algoma	36.70	6,746.87	0.5%
Town of Omro	-	7,179.18	0.0%
Town of Utica	-	4,472.84	0.0%
Town of Nekimi	-	15,556.60	0.0%
Town of Black Wolf	-	4,578.85	0.0%
Total Extraterritorial	70.54	55,825.16	0.1%
Total	70.54	73,474.66	0.1%

Source: Winnebago County Soils Data, 1980, ECWRPC 2016

⁸ Bedrock Geology of Wisconsin, 2005; University of Wisconsin-Extension Geological and natural History Survey

Metallic and Non-Metallic Mining Resources

Non-metallic mineral resources include other than those mined as a source of metal. Economically important non-metallic minerals include stone, sand, gravel and clay. **There is about 107 acres of active limestone quarry sites in the City** (Map 8-2). Within the extraterritorial area, there are approximately 549 acres of active limestone quarries. Non-metallic mineral resources within the City and extraterritorial areas are limestone.

Table 8-4: Non-Metallic Mining Resources

MCD	Exempt	Limestone	Reclaimed	Sand & Gravel	Total Acres
City of Oshkosh	0	106.8	0	0	17,649.50
Town of Oshkosh	0	30.47	28.05	0	8,894.92
Town of Vinland	0	291.74	24.84	0	6,918.12
Town of Winneconne	0	0	0	0	1,477.78
Town of Algoma	0	44.2	18.48	0	6,746.87
Town of Omro	0	0	0	0	7,179.18
Town of Utica	0	0	0	0	4,472.84
Town of Nekimi	0	182.8	0	0	15,556.60
Town of Black Wolf	0	0	0	0	4,578.85
Total Extraterritorial	0	549.21	71.37	0	46,930.24
Total	0	656.01	71.37	0	64,579.74

Source: ECWRPC, 2016

Soil Suitability for Sand and Gravel

Soil suitability for sand and gravel is shown on Map 8-2. This information can be used as guidance to where to look for probable sources based on the probability that soils in a given area contain sizeable quantities of sand or gravel. These materials can be used as a source for roadfill and embankments.

Water Resources

Lakes and Ponds

Surface water resources are extremely valuable features because of their potential environmental and economic benefits. Water based recreational activities and appropriately designed residential development that capitalizes on surface water amenities can have lasting impact on the local economy. Appropriate location and management of residential activity near surface water features is extremely important because of potential threats to water quality. Residential development's threats to surface water resources include lawn-applied chemicals, siltation and petroleum-based



Lake Winnebago

substances and salts from local road runoff.

The Wisconsin DNR maintains the Wisconsin Lakes Directory. The directory provides a list of named and unnamed lakes, springs, and ponds. ***Oshkosh is bordered by Lake Winnebago and Lake Butte des Morts*** (Map 8-3).

Lake Winnebago is the largest inland lake in Wisconsin at 131,939 acres. Lake Winnebago is at the bottom of the Fox-Wolf Drainage Basin with an area of 6,430 square miles. The basin includes the Wolf River, Upper Fox River, and the Winnebago Pool Lakes (Poygan, Winneconee, Butte des Morts). Lake water levels are controlled by the Army Corps of Engineers by a federal dam in Menasha and a private dam in Neenah. It has a maximum depth of 21 feet. Visitors have access to the lake from public boat landings and public beaches. Fish include Panfish, Largemouth Bass, Smallmouth Bass, Northern Pike, Walleye, Sturgeon and Catfish. The lake's water clarity is low.

Lake Butte des Morts is connected to Lake Winnebago by the Upper Fox River that flows through the City. Lake Butte des Morts, an 8,581 acre lake, is currently considered impaired due to agricultural runoff.

Rivers and Streams

There are four named waterways within in close proximity to the City⁹. In addition, a series of unnamed streams, ditches, and drainage ways primarily drain agricultural areas or undeveloped areas within the City's buffer area and beyond (Map 8-4).

- **Upper Fox River.** The Upper Fox River empties into Lake Butte des Morts and again flows through the City connecting Lake Butte des Morts to Lake Winnebago. The Lower Fox River originates to the north of the City at two outlets on Lake Winnebago.
- **Sawyer Creek.** Sawyer Creek is a clear, hard water stream tributary to the Fox River. All but the lower one mile of stream is intermittent. The lower mile contains water but has no measurable flow at low water stages. This portion lies within the City and is a catch-all for trash and litter. The fishery is minimal but bullheads and panfish are known to exist. Wildlife values are minimal. Even though much of the stream is intermittent, Sawyer Creek carries tremendous volumes of water during peak runoff periods. Minor flood damage often occurs along the stream.
- **Campbell Creek.** Campbell Creek is a turbid, hard water stream that is intermittent except for the extreme lower end. Nearly the entire natural channel of this stream has been buried and incorporated into the City's storm sewer system. The system is inadequate for peak floodflows and as a result flooded streets and basements are commonplace during high runoff periods. Sludge and silt are common bottom materials. Campbell Creek does not have a fishery.
- **Daggets Creek.** Daggets Creek is located within the City's northwest portion of the extraterritorial area. Daggets Creek is a dredged channel entering Lake Butte des Morts. Soil loss is a major issue and there are three barnyard/feedlot operations ranked critical

⁹ WDNR, <http://dnr.wi.gov/water/waterDetail.aspx?key=10848>

and two ranked high for their NPS pollution hazard. The lower half mile is a dredged channel approximately 50 feet wide and three feet deep. Lands adjacent to this channel have been subdivided.

Watersheds and Drainage

The City and its extraterritorial area is located within the Upper Fox, Lower Fox, and Wolf River Basins (Map 8-3) The Upper Fox Basin encompasses most of the City, the Lower Fox River Basin encompasses areas north of the city and a small part of the Wolf River Basin covers areas to the northwest. Within these basins there are six sub-watersheds.

Lower Fox Basin¹⁰:

- **Little Lake Butte des Morts Watershed (LF06).** A portion of the of the City (6,065.24 Acres) and the City's extraterritorial area fall within the Little Lake Butte des Morts sub-watershed, part of the Lower Fox River Basin. This watershed drains to the Lower Fox River beginning at the outlet of Lake Winnebago (at the Neenah and Menasha dams) to where the Appleton dam is located. There are many unnamed tributaries within the watershed including the Neenah Slough. The watershed is ranked high for stormwater runoff.

Upper Fox River Basin¹¹ :

- **Lake Butte des Morts Watershed (UF04).** Most of the City falls within this watershed. The Lake Butte Des Morts Watershed is located entirely within Winnebago County. The watershed is 50,973 acres in size and contains 128 miles of streams and rivers, 85 acres of lakes and 1498 acres of wetlands. The watershed is dominated by agriculture (59%) and open water (16%) and is ranked high for nonpoint source issues affecting streams and groundwater.
- **The Lake Winnebago North and West Watershed (UF01).** The Lake Winnebago North and West watershed is a small watershed stretching along the west shore of Lake Winnebago from the City to the Village of Harrison. The watershed is predominately developed along the lakeshore and areas adjacent to the lakeshore are either suburban areas or are currently being used for agriculture. The watershed is ranked high for nonpoint source pollution.
- **Fox River (UF05).** A small portion of the Fox River watershed stretches into the south western portion of the City's extraterritorial area.
- **Fond du Lac River (UF03).** A small portion of the Fond du Lac River watershed extends into the southeast corner of extraterritorial area. The watershed is 156,632 acres in size and is ranked high for nonpoint source pollution.

Wolf River Basin¹²

- **The Arrowhead River and Daggets Creek Watershed (WR01).** A very small portion of this watershed stretches into the western portions of the City's extraterritorial area

¹⁰ WDNR, <http://dnr.wi.gov/water/basin/Lowerfox>

¹¹ WDNR, <http://dnr.wi.gov/water/basin/upfox>

¹² WDNR, <http://dnr.wi.gov/water/basin/wolf>

encompassing the Daggets Creek corridor (Note: this is such a small amount area, that acreage totals were added to the Lake Butte des Morts watershed acreage totals in Table 8-7 below.) This watershed is part of the Wolf River Basin. Major problems in this watershed include excessive vegetation, dissolved oxygen standard violations and critical levels of soil loss.

Table 8-5: Watersheds

MCD	Lake Butte des Morts	Little Lake Butte des Morts	Fox River	Lake Winnebago North & West	Fond du Lac River
City of Oshkosh	10,708	0	0	4,354	2,502
Town of Oshkosh	7,129	136	0	1,600	0
Town of Vinland	4,848	1,275	0	802	0
Town of Winneconne	1,478	0	0	0	0
Town of Algoma	6,747	0	0	0	0
Town of Omro	7,179	0	0	0	0
Town of Utica	2,004	0	2,469	0	0
Town of Nekimi	3,050	0	3,852	0	8,655
Town of Black Wolf	0	0	0	0	4,568
Total Extraterritorial	32,435	1,411	6,321	2,402	13,223
Total	43,143	1,411	6,321	6,756	15,725

Floodplains

Areas susceptible to flooding are considered unsuitable for development due to potential health risks and property damage. Floodplains shown on Map 8-3 were obtained from the Wisconsin Department of Natural Resources database in 2015. The City ordinance is based on the FIRM, dated March 17, 2003 and corresponding profiles that are based on the Flood Insurance Study (FIS) dated March 17, 2003.

Overall, 5 percent (853 acres) of the City is within a floodplain. These areas can be seen in Map 8-3, and Table 8-8. In general the mapped floodplains are associated with Lake Butte des Morts named and unnamed tributaries and areas along the Lake Winnebago Shoreline.

The City enforces floodplain and shoreland – wetland zoning ordinances (Chapter 22, Article XV and Article III). In addition, Winnebago County enforces a floodplain-wetland zoning ordinance for unincorporated areas of the county. Both ordinances require certain land use controls in designated flood hazard areas, thus making residents eligible to participate in the Federal Flood Insurance Administration's Flood Insurance Program. This program requires all structures located in the designated flood hazard area be insured by a flood insurance policy if they are mortgaged by a federally insured bank. The City further enforces a floodway and flood fringe ordinance (Ch.22-55 & 22-56) to limit development in flood risk areas.

Table 8-6: Floodplains

MCD	Floodplains	Total acres	Percent
City of Oshkosh	853.07	17,649.50	5%
Town of Oshkosh	512.64	8,894.92	6%
Town of Vinland	102.28	6,918.12	1%
Town of Winneconne	38.39	1,477.78	3%
Town of Algoma	281.95	6,746.87	4%
Town of Omro	18.37	7,179.18	0%
Town of Utica	267.41	4,472.84	6%
Town of Nekimi	-	15,556.60	0%
Town of Black Wolf	97.79	4,578.85	2%
Total Extraterritorial	1,318.83	55,825.16	2%
Total	2,171.90	73,474.66	3%

Source: ECWRPC, 2016

Wetlands

Wetlands act as a natural filtering system for nutrients such as phosphorus and nitrates and serve as a natural buffer protecting shorelines and stream banks. Wetlands are also essential in providing wildlife habitat, control, and groundwater recharge. Consequently, local, state, and federal regulations have been enacted that place limitations on the development and use of wetlands and shorelands.

The city enforces a shoreland and wetland Zoning District. Chapter 22-217 regulates wetlands within 1,000 feet of the ordinary high water mark of navigable lakes, ponds or flowages and within 300 feet of the ordinary high watermark of navigable rivers or streams. The Army Corps of Engineers has authority over the placement of fill materials in virtually all wetlands two acres or larger adjacent to navigable waterways. The U.S. Department of Agriculture incorporates wetland preservation criteria into its crop price support programs. Prior to placing fill or altering wetland resources, the appropriate agencies must be contacted for authorization.

The wetlands shown on Map 8-3 are based on the Wisconsin DNR Wetlands Inventory Map. They were identified using aerial photographs to interpret vegetation, visible hydrology, and geography based on the U.S. Fish and Wildlife Service's "Classification of Wetland and Deepwater Habitats of the United States." **Only 3 percent (158 acres) of the City's total acreage are classified as wetlands.** The majority of this acreage lies in low-lying areas that have high groundwater. Generally wetlands are found named and unnamed lake tributaries, and Lake Winnebago and Little Lake Butte des Morts shoreline.

Groundwater

Safe, clean, and reliable groundwater plays a crucial role in maintaining the current quality of life and economic growth of the City and surrounding areas. Precipitation in the form of rain and snow is the source of nearly all the City's groundwater. Recharge is generally greatest in the spring, when water from melting snow and heavy rains saturate the ground and percolate downward to the water table. If discharge (the drawing out and use of groundwater) is greater

than recharge, then the elevation where the groundwater is found will fall, causing a depression to occur. Lower water levels cause the pumping lifts to increase and may reduce the yields of some of the wells. **According to the City's 2015 Water Quality Report (Customer Confidence Report)¹³, the City treats surface water from Lake Winnebago for potable water and did not have any violations reported** (For more information, please refer to the Community Facilities Chapter).

Groundwater Recharge Potential. According to a report prepared by the Wisconsin Geological and Natural History Survey¹⁴, areas surrounding the City have high (4-8 inches/year) infiltration rates which are estimated to become stream base flows or continue down and eventually become groundwater recharge. **Most areas (90.5%) within the City fall within the high water recharge potential** (Table 8-7). Protecting infiltration areas from impermeable development will help to safeguard the surrounding area's drinking water supply and will help safeguard the quality and quantity of Lake Winnebago surface water in the long-term.

Table 8-7: Water Recharge Potential

	Acres	Percent
Low Water Recharge Potential (0" - 2"/year)	0	0.0%
Medium Water Recharge Potential (2" - 4"/year)	358	5.8%
High Water Recharge Potential (4" - 8"/year)	5,535	90.5%
Very High Water Recharge Potential (> 8"/year)	1	0.0%
No Rating	223	3.6%
Total Acres	6,116	100.0%

It is important to recognize that, in addition to any efforts made within the City and throughout the City's extraterritorial area to protect groundwater supply; this issue is more regional in scope. A groundwater divide, located in the central part of Wisconsin, determines the flow of groundwater. East of the divide, groundwater moves southeasterly toward the Wolf and Fox Rivers. Thus, efforts to preserve groundwater resources should be coordinated on a regional basis as a way to ensure that the region's groundwater supply is protected.

Groundwater Contamination Susceptibility. The ease that pollutants can be transported from the land surface to the top of the groundwater or "water table" defines a groundwater's susceptibility to pollutants. Materials that lie above the groundwater offer protection from contaminants. However, the amount of protection offered by the overlying materials varies, depending on the materials.

The WDNR, in cooperation with UW-Extension, the Wisconsin Geological and Natural History Survey and USGS, evaluated the physical resource characteristics that influence sensitivity in order to identify areas sensitive to contamination. Five resource characteristics were identified: depth to bedrock, type of bedrock, soil characteristics, depth to water table and characteristics and characteristics of surficial deposits. Each of the five resource characteristics was mapped,

¹³ Source: City of Oshkosh 2015 Water Quality Report: http://www.ci.oshkosh.wi.us/public_works/assets/pdf/CCR-2015.pdf

¹⁴ Groundwater Recharge in Calumet, Outagamie, and Winnebago Counties, Wisconsin, Estimated by a GIS-based Water-balance Model, 2011; University of Wisconsin-Extension Wisconsin Geological and Natural History Survey (Open-File Report 2001-05)

and a composite map was created. A numeric rating scale was developed and map scores were added together.

An index method was used to determine susceptibility; however this method of analysis is subjective and includes quantifiable or statistical information on uncertainty. This limits the use of the information for defensible decision making. Therefore, while groundwater contamination susceptibility maps can be useful, this level of uncertainty must be kept in mind.

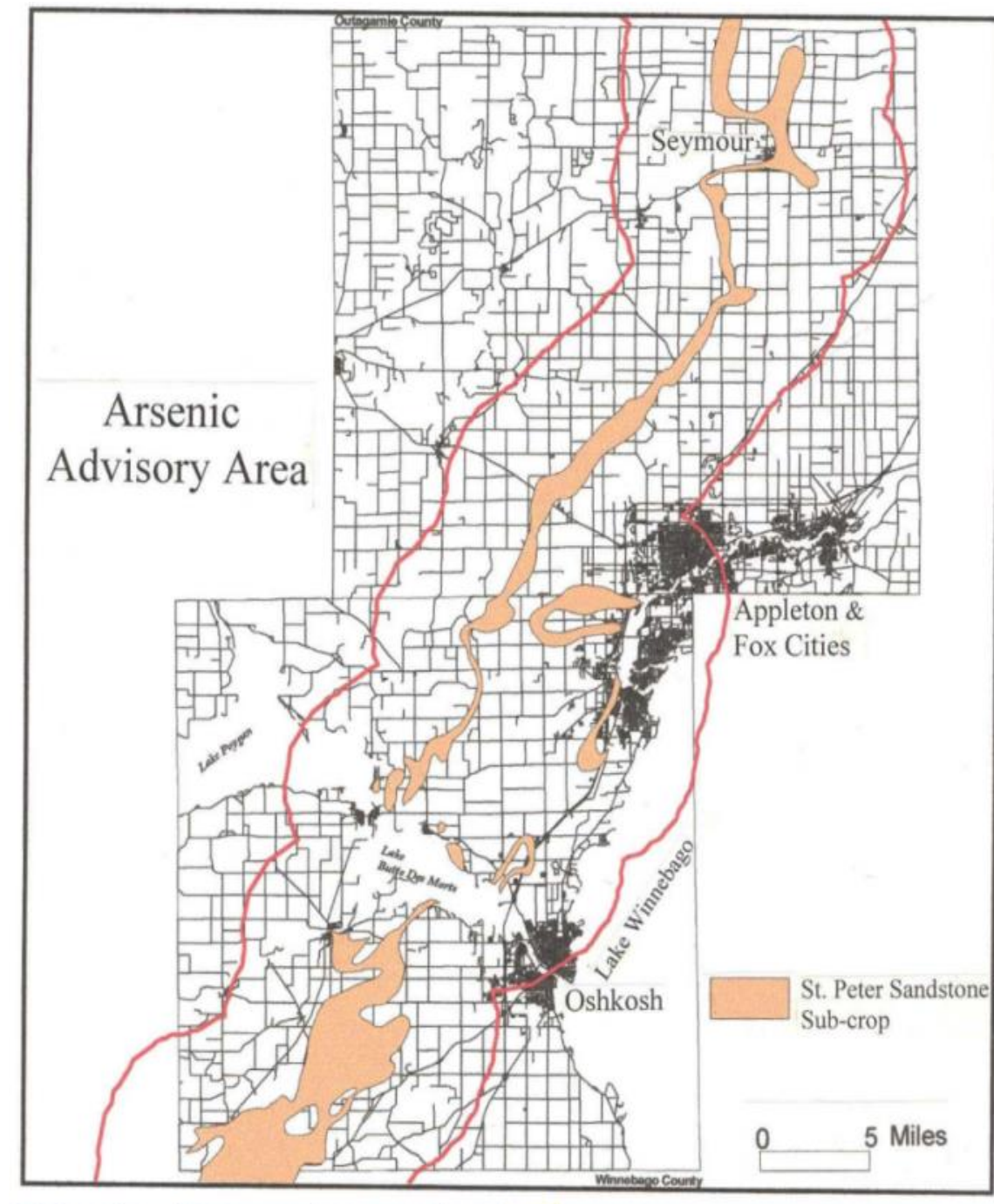
Table 8-8: Groundwater Susceptibility

MCD	Very High		Somewhat High		Moderate		Somewhat Low		Very L
	Acres	%	Acres	%	Acres	%	Acres	%	Acres
City of Oshkosh	757	4%	0	0%	10,111	57%	77	0.4%	6,641
Town of Oshkosh	2,706	30%	0	0%	2,616	29%	0	0.0%	3,221
Town of Vinland	3	0%	0	0%	4,809	70%	0	0.0%	1,971
Town of Winneconne	1,168	79%	0	0%	114	8%	0	0.0%	55
Town of Algoma	1,317	20%	0	0%	4,936	73%	0	0.0%	494
Town of Omro	607	8%	0	0%	2,965	41%	0	0.0%	3,373
Town of Utica	0	0%	784	18%	1,603	36%	0	0.0%	2,040
Town of Nekimi	0	0%	1,886	12%	6,206	40%	428	2.8%	7,038
Town of Black Wolf	144	3%	0	0%	3,899	85%	0	0.0%	536
Total Extraterritorial	5,945	11%	2,669	5%	27,147	49%	428	0.8%	18,728
Total	6,703	9%	2,669	4%	64,406	88%	933	1.3%	44,098

Arsenic Contamination. Arsenic contamination of the groundwater supply has been an issue in northeastern Wisconsin since the 1980's. The main area of arsenic contamination runs diagonally (southwest to northeast) across Winnebago and Outagamie Counties, and is closely associated with the St. Peter Sandstone bedrock. ***The City lies to the east of the main band of highest concern, but smaller areas of the St. Peter Sandstone bedrock may fall within the City's extraterritorial planning area.***

In 2001, the US EPA lowered the arsenic drinking water standard from 50 to 10 parts per billion (PPB), due to convincing data that found a relationship between consumption and deterioration in health.

The DNR replaced its Arsenic Advisory Area Map in 2004 with a more stringent set of regulations that apply to the Special Well Casing Depth Area (SWCDA). The regulations require new wells in Outagamie and Winnebago County to meet construction, grouting, and disinfection standards that have proven to lower arsenic levels to safe levels for human consumption. Required well construction specifications are determined by town quarter section



Depth to Groundwater. Groundwater depth can impact building foundations, utility and street construction and other factors. Areas of high groundwater are generally found throughout the extraterritorial area (Map 8-2). **Approximately 40 percent (28,740 acres) of the City and the surrounding area has groundwater present within two feet or less.**

Table 8-9: High Groundwater

MCD	High Groundwater*	Total acres
City of Oshkosh	4,998.75	17,649.50
Town of Oshkosh	3,022.65	8,894.92
Town of Vinland	3,271.84	6,918.12
Town of Winneconne	83.55	1,477.78
Town of Algoma	2,884.02	6,746.87
Town of Omro	3,046.27	7,179.18
Town of Utica	2,036.58	4,472.84
Town of Nekimi	7,393.94	15,556.60
Town of Black Wolf	2,002.61	4,578.85
Total Extraterritorial	23,741.46	55,825.16
Total	28,740.21	73,474.66

* Groundwater less than 2 feet.

Source: ECWRPC, 2016

Wildlife Resources

Wildlife Habitat

Numerous habitat types surrounding the City have the potential to support varied and abundant wildlife and fish communities. These habitats consist of the Winnebago Pool Lakes and their tributaries, woods, open wet meadows, and farmland.

Wildlife is threatened by the negative effects of development and storm water runoff (both from urban and rural runoff sources). This has affected water quality and habitat health throughout the Winnebago Pool Lakes and Lower Fox River.

Woodlands

Woodlands covered much of Winnebago and Outagamie Counties before settlement. At one time, the area was primarily covered with deciduous hardwood forest. The Fox Valley's reliance on the paper industry attests to the regions' forested history.

The tension zone is a wide corridor running from northwestern to southeastern Wisconsin



Wisconsin Tension Zone and the 16 Ecological Landscapes

Source: Wisconsin's Forests: A Quick Overview; 2011, WDNR

that marks the pre-settlement dividing line between northern and southern native plant species. **The tension zone has characteristics of both northern and southern Wisconsin climates, and therefore, species from both areas. Oshkosh lies within this tension zone.** The United States Department of Agriculture has also divided the country into plant hardiness zones. Those zones contain characteristic plant species that are hardy in that region. Generally speaking, plants from any particular zone are hardy in that zone and those to the south, but not to the north unless they are protected from the severe climate of that zone.

Oshkosh and the surrounding area is at the juncture of two different plant communities. They are generally described as the boreal element and the prairie element. Characteristics typical of both the Conifer-Hardwood Forest and the Southern-Hardwood Forest can be seen locally.

Woodlands are fragmented and limited in the City and the surrounding areas. Care must be taken in the selection of trees for use in the City, including those used for landscaping, in preserved parks and open spaces, and along the street. Street trees in particular have the hardest time adapting to their particular microclimates. Normally they are subject to stress from soil compaction, heat, drought conditions, lack of root space, salt, road pollutants, and impacts from all sorts of vehicles. The typical street tree usually lives only a fraction of its potential life span. Street trees should be selected from a pallet of trees that adapt well to street conditions and are suitable for the local area. There should also be diversity in the species selected to reduce the spread of tree and shrub diseases.

Forests and woodlands can be classified into one of two categories: general (unplanted) woodlands and planted woodlands. General woodlands are naturally occurring forests and hedgerows. Planted woodlands are tree plantations in which trees are found in rows. These areas include orchards, timber tracts, Christmas tree plantations and other general uses. **There are no planted woodlands and approximately 161 acres of general woodlands in the City** (Table 8-9, Map 8-5). In total this makes up only one percent of the land cover in the City.

Table 8-10: Woodlands

MCD	Planted Woodlands	General Woodlands	Total Woodlands	Total acres	Percent
City of Oshkosh	0	161.59	161.59	17,649.50	1%
Town of Oshkosh	1.3	352.7	354.1	8,894.9	4%
Town of Vinland	26.3	333.7	360.0	6,918.1	5%
Town of Winneconne	0.0	10.8	10.8	1,477.8	1%
Town of Algoma	55.2	264.4	319.6	6,746.9	5%
Town of Omro	59.2	603.5	662.7	7,179.2	9%
Town of Utica	31.2	287.5	318.7	4,472.8	7%
Town of Nekimi	16.9	840.9	857.8	15,556.6	6%
Town of Black Wolf	201.4	503.5	704.9	4,578.9	15%
Total Extraterritorial	391.5	3,197.0	3,588.5	55,825.2	6%
Total	391.5	3,358.6	3,750.1	73,474.7	5%
Source: ECWRPC, 2016					

Rare, Threatened and Endangered Species

The Wisconsin Department of Natural Resources maintains a database of rare, threatened and endangered species and natural communities in Winnebago County. In order to protect these species and communities, the exact location is not available to the public; however, Winnebago County does have a copy of this database. Whenever a request comes into the County for development, this database is consulted prior to granting approval.

The Wisconsin DNR Natural Heritage Inventory (NHI) maintains an online database which provides statewide inventory of known locations and conditions of rare and endangered species, by Town. ***A review of the NHI Township Search Tool (for the towns of Oshkosh, Vinland, Winneconne, Algoma, Utica, Nekimi, and Black Wolf) database revealed a number of species (fish, bird, turtle, butterfly, and plant) for the City and towns surrounding the City*** (Table 8-13). This database is incomplete since not all areas within the state have been inventoried. Thus, the absence of a species within this database does not mean that a particular species or community is not present. Nor does the presence of one element imply that other elements were surveyed for but not found. Despite these limitations, the NHI is the state's most comprehensive database on biodiversity and is widely used. Generalized versions of the data base are included on Map 8-5.

Exotic and Invasive Species

Non-native aquatic and terrestrial plants and animals, commonly referred to as exotic species, have been recognized in recent years as a major threat to the integrity of native habitats and the species that utilize those habitats. Some of these exotic species include purple loosestrife, buckthorn, garlic mustard, multi-colored Asian lady beetles, Eurasian water milfoil, emerald ash borer, and gypsy moths. They displace native species, disrupt ecosystems, and affect citizens' livelihoods and quality of life. The invasive species rule (Wis. Adm. Code Ch. NR40) makes it illegal to possess, transport, transfer, or introduce certain invasive species in Wisconsin without a permit.

Table 8-11: WDNR Natural Heritage Inventory

Scientific Name	Common Name	WI Status	Federal Status	Group	Township Search							
					T. Oshkosh	T. Vinland	T. Winneconne	T. Algoma	T. Omro	T. Utica	T. Nekimi	T. Black Wolf
Acipenser fulvescens	Lake Sturgeon	SC/H		Fish			X	X				
Ardea alba	Great Egret	THR		Bird			X					
Armoracia lacustris	Lake Cress	END		Plant							X	
Asclepias ovalifolia	Dwarf Milkweed	THR		Plant		X						
Asclepias purpurascens	Purple Milkweed	END		Plant					X			
Bird Rookery	Bird Rookery	SC		Other			X					X
Botaurus lentiginosus	American Bittern	SC/M		Bird						X		
Chlosyne gorgone	Gorgone Checker Sport	SC/N		Butterfly		X						
Cuscuta polygonorum	Knotweed Dodder	SC		Plant				X				
Cypripedium candidum	White Lady's-slipper	THR		Plant		X						
Emergent marsh	Emergent Marsh	NA		Community				X				
Emydoidea blandingii	Blanding's Turtle	SC/P		Turtle				X				
Erimyzon sucetta	Lake Chubsucker	SC/N		Fish			X	X				
Eurybia furcata	Forked Aster	THR		Plant								X
Falco peregrinus	Peregrine Falcon	END		Bird				X				
Glyptemys insculpta	Wood Turtle	THR		Turtle				X				
Gymnocladus dioicus	Kentucky Coffee-tree	SC		Plant							X	
Luxilus chrysocephalus	Striped Shiner	END		Fish			X	X				
Mesic prairie	Mesic Prairie	NA		Community					X			
Migratory Bird Concentration	Migratory Bird Concentration	SC		Other			X		X			X
Notropis anogenus	Pugnose Shiner	THR		Fish			X	X				
Platanthera leucophaea	Eastern Prairie White Fringed Orchid	END	LT	Plant		X				X		
Ruellia humilis	Hairy Wild Petunia	END		Plant			X					
Southern sedge Meadow	Southern Sedge Meadow	NA		Community						X		
Sterna forsteri	Forster's Tern	END		Bird			X	X				
Sterna hirundo	Common Tern	END		Bird			X					
Thalictrum revolutum	Waxleaf Meadowrue	SC		Plant		X		X				
Verbena simplex	Narrow-leaved Vervain	SC		Plant			X					
Wet-mesic prairie	Wet-mesic Prairie	NA		Community	X	X						
Xanthocephalus xanthocephalus	yellow-headed Blackbird	SC/M		Bird						X		

Source: WDNR Natural Heritage Inventory 2016 search, <http://dnr.wi.gov/topic/NHI/data.asp?tool=township>

Parks, Open Space and Recreational Resources

WDNR and Public Lands

The WDNR owns and manages approximately 113 acres of land within the City and approximately 627 acres within the extraterritorial area. The WDNR's on-line Public Lands mapping application (at <http://dnr.wi.gov/topic/SurfaceWater/swdv>) highlight the following Knowles-Nelson Stewardship Grant properties and state owned properties:

- Butte des Morts Wetlands;
- Asylum Bay State-wide Habitat and Rough Fish Station;
- Wiouwash State Trail;
- City of Oshkosh Sawyer Creek Parkway;
- City of Oshkosh Steiger Park (WCL);
- Town of Omro, Omro Town Park; and
- Winnebago County Shangri La Point Preserve.

Environmental Corridors

Environmental corridors are continuous systems of open space created by the natural linkages of environmentally sensitive lands such as woodlands, wetlands, and habitat areas. They provide important routes of travel for a variety of wildlife and bird species. Protecting these corridors from development protects habitat and keeps nonpoint source pollution to a minimum, thus ensuring that high quality groundwater and surface water is maintained and habitat is not impaired.

Important environmental corridors within the City and surrounding area are associated with lake shorelines and the named and unnamed streams with natural vegetation scattered throughout the area. These areas should be protected from development by implementing buffer strips where land disturbing activities are limited within the established buffer area.

Waste and Pollution

Solid and Hazardous Waste Sites

The Solid and Hazardous Waste Information Management System (SHWIMS) provides access to information on sites, and facilities operating at sites, that are regulated by the Wisconsin Department of Natural Resources' (WDNR) Waste and Materials Management (WMM) program. The SHWIS on-line database activity information, including:

- Engineered and licensed solid waste disposal facilities;
- Older unlicensed waste disposal sites (e.g. town dumps);
- Licensed waste transporters;
- Hazardous waste generators; and
- Composting sites, wood-burning sites, waste processing facilities and more.

According to SHWIMS, there are 328 operating sites listed for Oshkosh. The directory was also checked for operating sites with the City's extraterritorial areas.

A search of the database for solid waste landfills / disposal facilities indicates that there are 16 sites in the City. Of the 16 sites 3 are currently operating.

Air Quality

Air quality, especially good air quality, is often taken for granted. Clean air is vital to maintain public health. Sound local and regional planning can minimize negative impacts to the air. Development patterns can impact automobile use, which in turn impacts air quality. Emissions from certain industries can also impact air quality. A development patterns become more spread out, the location of jobs and housing become more segregated and distant from one another.

Since alternative modes of transportation are, at present day, less viable or unavailable in some instances, people rely more on the automobile to get around. Changing lifestyles are also a major factor. Two income families are causing people to find housing that splits the difference between the two employment locations. Since vehicle travel generates air pollutant emissions, greenhouse gas emissions, and noise, local decisions about what types, where and how new development occurs can have an impact on air quality.

The closest ozone air quality monitoring site is located at the Thrivent facility at 4432 Meade Street in Appleton (Outagamie County). The primary and secondary National Ambient Air Quality standard for ozone is 0.075 ppm.¹⁵ Monitored values of ozone represent ground level ozone, which is not directly emitted into the air. Ozone concentrations typically reach higher levels on hot sunny days in urban environments; it can be transported long distances by wind. **The 8-hour design values (ppb) were not exceeded at the Outagamie County site between 1997 and 2012.**¹⁶ Particulate matter (PM) is a mixture of solid particles and liquid droplets. It includes acids, organic chemicals, metals, soil or dust, and allergens. According to the Wisconsin Air Quality Trends, 2014, **Outagamie County did not exceed the primary and secondary National Ambient Air Quality Standard for particulate matter between 2001 and 2013.**

Cultural Resources

Cultural resources, like natural resources are valuable assets which should be preserved. These resources define a community's unique character and heritage. Included in this section is an inventory of historic buildings, sites, structures, objects, archeological sites and districts.

State and National Register of Historic Places

The Wisconsin Historical Society's Division of Historical Preservation (DHP) is a clearing house for information related to the state's cultural resources including buildings and archaeological sites. A primary responsibility of the DHP is to administer the State and National Register of Historic Places programs. The National Register is the official national list of historic properties in the United States that are worthy of preservation. The program is maintained by the National Park Service in the U.S. Department of the Interior. The State Register is Wisconsin's official listing of state properties determined to be significant to Wisconsin's heritage. The

¹⁵ Primary standard limits are set to protect public health, while secondary standards are set to protect public welfare.

¹⁶ Wisconsin Department of Natural Resources, *Wisconsin Air Quality Trends*, April 2015.

inventory is maintained by the DHP. Both listings include sites, buildings, structures, objects, and districts that are significant in national, state, or local history. Sites are based on the architectural, archaeological, cultural, or engineering significance. (For ease of discussion, “National Register” is used to refer to both programs. In Wisconsin, if a property is listed on one then it is typically listed on the other.

At the present, 36 properties / districts within the City are listed on the National Register.

The properties listed in the National Register include:

Table 8-12: City of Oshkosh National Register and State Register of Historic Places

Reference #	Location	Historic Name
94001368	Roughly, Algoma Blvd. from Woodland Avenue to Hollister Avenue	Algoma Boulevard Historic District
74000140	1174 Algoma Blvd.	Algoma Boulevard Methodist Church
82000730	1157 High Avenue	Amos House ¹⁷
82000731	1010 Bayshore Drive	Bowen, Abraham Briggs, House
95001505	17 W. Sixth Avenue	Brooklyn No. 4 Fire House
82005125	1610 Doty Street	Chief Oshkosh Brewery ¹⁸
82000732	224 State Street	Daily Northwestern Building
95000247	502 N. Main Street	First Methodist Church
74000142	110 Church Avenue	First Presbyterian Church
82000733	132-140 High Street and 9 Brown Street	Frontenac
84003824	1200 Washington Avenue	Guenther, Richard, House
78000151	1149 Algoma Blvd.	Hooper, Jessie Jack, House
94000156	Roughly bounded by W. Irving Avenue, Franklin St., Church Avenue, Wisconsin St. and Amherst Avenue	Irving Church Historic District
82000734	1449 Knapp Street	Lutz, Robert, House
99001174	809 Ceape Avenue	Mayer--Banderob House
83004365	234 Church Avenue	Morgan, John R., House
13000783	North Main Street generally bounded by Nevada Avenue and Huron Avenue	North Main Street Bungalow Historic District
	Roughly, N. Main Street from Parkway Avenue to Algoma Blvd., and Market Street NW. to High Avenue	North Main Street Historic District
85002334	240 Algoma Blvd.	Orville Beach Memorial Manual Training School
74000144	100 High Avenue	Oshkosh Grand Opera House
84000722	Buildings at 800, 842, and 912 Algoma Blvd., and 845	Oshkosh State Normal School Historic District

	Elmwood Avenue	
75000086	Address Restricted	Overton Archeological District
79000121	842 Algoma Blvd.	Oviatt House
78000152	1410 Algoma Blvd.	Paine Art Center and Arboretum
86001392	Off Congress Avenue roughly between High, New York, and Summit avenues., and Paine Lumber access road	Paine Lumber Company Historic District
84000728	765 Algoma Blvd.	Pollock, William E., Residence
93000025	1120 Algoma Blvd.	Read School
03000578	1901 Algoma Boulevard	Riverside Cemetery
94001212	903 Oregon Street	Security Bank
74000145	203 Algoma Blvd.	Trinity Episcopal Church
84000732	751 Algoma Blvd.	Wall, Thomas R., Residence
86001129	Roughly bounded by Merritt Avenue Linde and Lampert streets, Washington Avenue, Bowen and Evan streets	Washington Avenue Historic District
93000068	1141 Algoma Blvd.	Waterman, S. H., House
82000736	415 Jackson Street	Winnebago County Courthouse
82000737	220 Washington Ave.	Wisconsin National Life Insurance Building

Source: National Register, Accessed from the Wisconsin State Historical Society.

The National Register is not a static inventory. Properties are constantly being added, and, less frequently, removed. It is, therefore, important to access the most updated version of the National Register properties. This can be found by accessing the DHP website (<http://www.wisconsinhistory.org>) or by contacting the Wisconsin State Historical Society.

Architecture and History Inventory (AHI)

In order to determine those sites that are eligible for inclusion on the National Register, the DHP frequently funds historical, architectural, and archaeological surveys of municipalities and counties within the state. Surveys are also conducted in conjunction with other activities such as highway construction projects.

A search of the DHP's online Architecture and History Inventory (AHI) reveals a total of 1,777 sites listed for Oshkosh.¹⁹

Inclusion in this inventory conveys no special status, rights, restrictions, or benefits to owners of these properties. It simply means that some type of information on these properties exists in the DHP's collections. AHI is primarily used as a research and planning tool. Like the National Register, this is not a static inventory. Properties are constantly being updated. Information can be found on the DHP web site (<http://www.wisconsinhistory.org>).

Archaeological Sites Inventory

¹⁹ Accessed 11/21/2016.

An inventory similar to the AHI exists for known archaeological sites across the state: the Archaeological Sites Inventory (ASI). Due to the sensitive nature of archaeological sites, information as to their whereabouts is not currently made available online. This information is distributed only on a need-to-know basis. Archaeological sites are added to ASI as they are discovered; discovery is a continual process. For technical assistance and up-to-date information on sites within the City and the 3.0 mile extraterritorial area, contact State Historic Preservation Officer at the Wisconsin State Historical Society.

Wisconsin Historical Markers

Wisconsin historical markers identify, commemorate and honor important people, places, and events that have contributed to the state's rich heritage. The Wisconsin Historical Markers Program is a vital education tool, informing people about the most significant aspects of Wisconsin's past. The Society's Division of Historic Preservation administers the Wisconsin Historic Markers Program. Applications are required for all official State of Wisconsin historical markers and plaques. **There are five historical markers located in the City.**

Table 8-13: Wisconsin Historical Markers in City of Oshkosh

Marker #	Name	Location
27	Knaggs Ferry	Rainbow Park, near junction of Veterans Tr and Punhoqua St, Oshkosh
183	University of Wisconsin-Oshkosh	Temporarily Relocated
211	S.J. Wittman - Aircraft Designer, Race Pilot, Inventor	Wittman Field Airport, 525 W 20 th Ave, Oshkosh
347	Edgar Sawyer House	Oshkosh Public Museum, 1331 Algoma Blvd, Oshkosh
560	Elizabeth Batchelder Davis Children's Home	1260 N Westfield St, Oshkosh

Source: Official List of Wisconsin's State Historic Markers, Accessed from the Wisconsin State Historical Society 11/21/16.

Museums/Other Historic and Cultural Resources

Museums protect valuable historic resources for community enjoyment. Residents are welcome to learn from the exhibits and amenities they have to offer. **There are two museums in the City.** Several museums are located in close proximity to the City.

Table 8-14: Museums in City of Oshkosh

Museum	Location
Oshkosh Public Museum	1331 Algoma Boulevard, Oshkosh
The Paine Art Center and Gardens	1410 Algoma Boulevard, Oshkosh

Source: City of Oshkosh, 2017

Local Historic Preservation Commissions and Societies

The Certified Local Government (CLG) program was enacted as part of the National Historic Preservation Act Amendments of 1980. It has been established in Wisconsin to further encourage and assist historic preservation by local governments. In Wisconsin, a city, village, county, or town can be certified by Wisconsin's State Historic Preservation Office and the

Department of the Interior as a CLG if it meets basic criteria. ***The City is a Certified Local Government (CLG).***

Historic Preservation Commissions are part of local governments and are established through local preservation ordinances. A commission's size, responsibilities, and authority depend on local laws and the needs of the community. ***The City has established the Oshkosh Landmarks Commission.*** In 1983, the Landmarks Commission was established by the Oshkosh Common Council. The Commission is charged with fostering protection, enhancement and perpetuation of historic improvements and districts along with safeguarding and fostering civic pride in the City's historic and cultural heritage.

The Wisconsin State Historical Society also maintains a list of local historical societies that are affiliated with the Wisconsin Council for Local History.²⁰ The Winnebago County Historical and Archeological Society are affiliated with the Wisconsin Council for Local History.

The Winnebago County Historical and Archeological Society were formed in 1922 at the Oshkosh Public Library. It moved to its current home in the Edgar Sawyer home in 1924. Its mission is to represent, serve and involve community members in preserving the history of our area.

Local History²¹

Oshkosh is located on the eastern shore of Lake Winnebago, halfway between the Fox Cities and Fond du Lac, in Winnebago County. The Ho-Chunk Indians lived on the site of modern Oshkosh for centuries before white settler Webster Stanley arrived in 1836. Within several months of his arrival, Stanley had established a trading post, tavern, and an inn. ***More than 100 people lived in the area by 1840, and soon, the villages of Brooklyn, on the south side of the Fox River, and Athens, on the north, merged and officially adopted the name Oshkosh after the Menominee chief (1795-1858).***

The waters of the Fox River empty into Lake Winnebago at Oshkosh, which provided the city with the power to build lumber and gristmills, as well as furniture and equipment factories. Morris Firman built the city's first sawmill in 1847 and within several years, sawmills lined the Fox River. The great Chicago fire of 1871 proved a boon to Oshkosh's lumber trade, as much of the lumber used to rebuild the city came from Oshkosh mills. By 1873, 24 sawmills, 15 shingle mills, and seven sash and door factories were in operation, earning Oshkosh the name "Sawdust City."

In 1856, Oshkosh resident Coles Bashford (1816-1878) was elected Wisconsin's first Republican governor in the most hotly contested election in Wisconsin history. The state supreme court ultimately decided the case in Bashford's favor over Democratic incumbent William Barstow (1813-1865).

In the summer of 1898, 1,500 Oshkosh woodworkers formed a union and launched a strike that lasted for 14 weeks. Many women participated in the strike, throwing eggs and bags of pepper at the deputies sent to quell the disturbance.

²⁰ <http://www.wisconsinhistory.org/>

²¹ Sources: Oshkosh, Wisconsin - A Brief History, Wisconsin Historical Society, accessed on November 21, 2016.

On November 21, 1968, the University of Wisconsin-Oshkosh was rocked by "Black Thursday" as protestors occupied the president's office demanding more black teachers, classes on African American history, black speakers on campus, and a black cultural center. Nearly 100 student protestors were arrested.

Oshkosh is probably best known for OshKosh B'Gosh, a manufacturer of overalls, adult work clothing, and children's clothing founded in 1895. Oshkosh is also home to the EAA AirVenture Oshkosh, the world's largest airshow. The airshow is held at Wittman Regional Airport, named for Oshkosh aviator S.J. Wittman (1904-1995), pilot and small aircraft designer. The city is also home to the Oshkosh Corporation, one of the world's largest manufacturers of emergency, utility, and military vehicles.

POLICIES AND PROGRAMS

Policies and programs related to the Agricultural, Natural and Cultural resources element can be found in Appendix D.

OBJECTIVES AND ACTIONS

The following objectives and actions represent the steps and resources needed to meet the goals identified in this element. Objectives are specific activities to accomplish goals. Objectives should be clear, measurable and concise. Actions represent the steps and resources needed to meet objectives.

Type	Reference	Content
Goal	ANC1	Promote the development of urban agricultural programs and activities.
Objective	ANC1.1	Support agricultural opportunities for the community.
Action	ANC1.1.1	Develop a planned system of temporary and permanent community garden sites.
Action	ANC1.1.2	Maintain and support farmer's market programs.
Action	ANC1.1.3	Explore options for community-based agricultural harvest programs.

Type	Reference	Content
Goal	ANC2	Protect and preserve wetlands, shorelands, and other environmentally sensitive areas.
Objective	ANC2.1	Participate in programs that protect and conserve environmentally sensitive areas.
Action	ANC2.1.1	Complete the Fox River Corridor with a looped trail system with an environmentally sensitive design for the shoreline.
Action	ANC2.1.2	Participate in the local Water Quality Initiative, including participating in the lake council for Lake Winnebago.
Action	ANC2.1.3	Participate in air quality meetings and educational promotions with the DNR and EPA.

Action	ANC2.1.4	Revise Zoning Ordinance to address: a. Design guidelines for land next to existing and future parks; b. Impervious surface in the floodplain.
Action	ANC2.1.5	Participate in the Winnebago Waterways project which seeks to update the lakes management plan.

Type	Reference	Content
Goal	ANC3	Protect aquatic and wildlife habitat when managing development in proximity to environmental corridors, riparian areas, and woodlands.
Objective	ANC3.1	Develop programs that protect the environmental features during development.
Action	ANC3.1.1	Continue to educate and involve public regarding: a. Water conservation practices. b. Non-point source pollution. c. Stormwater management techniques that address improving quality and lessening the quantity of runoff. d. Chemical fertilization, weed and pest control for lawns.

Type	Reference	Content
Goal	ANC4	Protect and develop passive and active recreation resources (e.g. parks, trails, hunting and fishing opportunities).
Objective	ANC4.1	Coordinate park purchases and programs that increase the amount of and connect recreational opportunities within the city and with other agencies and local units of government.
Action	ANC4.1.1	Update the “Pedestrian and Bicycle Circulation Plan”, including: a. Further identify and develop a linked network of parks and trails around and within the city. b. Complete the Fox River Corridor looped trail system with an environmentally sensitive design for the shoreline.
Action	ANC4.1.2	Implement recommendations of the “Comprehensive Outdoor Recreation Plan”, including officially mapping parks and trails.
Action	ANC4.1.3	Participate in quarry reclamation planning processes for quarries within the city and extraterritorial area.

Type	Reference	Content
Goal	ANC5	Promote an aesthetically pleasing natural environment throughout the city.
Objective	ANC5.1	Develop programs that address the aesthetic quality of new and existing development.

Action	ANC5.1.1	Identify and implement aesthetic improvements for gateways/key corridors into and through the city, including update of the "Highway 41 Corridor Plan".
Action	ANC5.1.2	Revise Land Subdivision Ordinance to address: a. Alternative methods to stormwater management; b. Increased tree retention during development; c. Eliminating conflicts between stormwater management and development requirements.
Action	ANC5.1.3	Research and propose implementation of billboard reduction programs for the city, including highway corridors into the city.
Action	ANC5.1.4	Implement programs that mitigate the effect of emerald ash borer and other destructive insects and diseases.
Action	ANC5.1.5	Utilize the Forestry Management Plan and work with Public Works to avoid tree plantings that could damage infrastructure.

Cultural Resources

Type	Reference	Content
Goal	ANC6	Promote the on-going viability of publicly and privately owned cultural resources.
Objective	ANC6.1	Develop partnerships and programs that promote local resources to citizens and visitors.
Action	ANC6.1.1	Maintain and improve the visibility of and accessibility to our historic and cultural resources.
Action	ANC6.1.2	Pursue private/public partnerships to support the city owned and operated resources.
Action	ANC6.1.3	Increase commitment to maintain and improve historic and cultural resources owned and operated by the city.

Type	Reference	Content
Goal	ANC7	Create a strong and vibrant cultural tourism program.
Objective	ANC7.1	Coordinate events and advertising of cultural events for visitors.
Action	ANC7.1.1	Conduct a marketing and implementation study for a cultural tourism program.
Action	ANC7.1.2	Pursue funding sources for implementation of cultural tourism programming.

Type	Reference	Content
Goal	ANC8	Promote and publicize cultural events and sites within the city.
Objective	ANC8.1	Develop programs that increase awareness of local events and sites.
Action	ANC8.1.1	Pursue private/public partnerships to support the city owned and operated resources.

Action	ANC8.1.2	Maintain the “Oshkosh Events” website (www.oshkoshevents.com) with updated information regarding cultural resources and activities.
Action	ANC8.1.3	Continue coordination with OASD and UWO on historical and cultural resource curriculum.

Type	Reference	Content
Goal	ANC9	Encourage preservation and protection of the historic built environment.
Objective	ANC9.1	Develop programs that identify and promote local historic resources.
Action	ANC9.1.1	Promote identification of existing and survey potential historic districts and neighborhood boundaries.

Type	Reference	Content
Goal	ANC10	Maintain, improve, and increase public access to the waterfront.
Objective	ANC10.1	Continue to provide and promote opportunities for recreational events on and public access to the Lake Winnebago and Fox River system.
Action	ANC10.1.1	Upgrade and improve the city’s way-finding signage system, including to the lake and river access points.

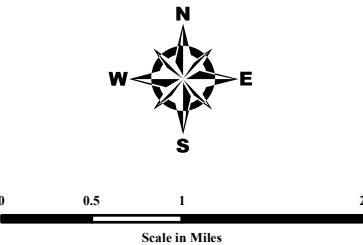
Type	Reference	Content
Goal	ANC11	Continue to improve the city’s overall aesthetic quality.
Objective	ANC11.1	Develop programs that update and create standards to address the aesthetic quality of new and existing development.
Action	ANC11.1.1	Explore opportunities for corridor plans into and through the city.

Type	Reference	Content
Goal	ANC12	Ensure ongoing communication regarding agricultural, natural and cultural resource issues and activities.
Objective	ANC12.1	Adopt policy to verify ongoing communication with agricultural, natural and cultural resource stakeholders.
Action	ANC12.1.1	Continue city staff involvement with Oshkosh Landmarks Commission.

Map 8-1: City of Oshkosh Comprehensive Plan Update Farmland Preservation

- Prime farmland if drained
- All areas are prime farmland
- Farmland of statewide importance

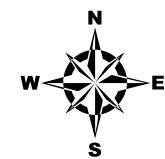
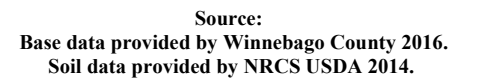
Source:
Base data provided by Winnebago County 2016.
Farmland data provided by NRCS USDA 2015.



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- Sand and Gravel Suitability
- High Bedrock (5 ft)
- Steep Slope (>12%)
- High Groundwater (2 ft)



0 0.5 1 2

Scale in Miles

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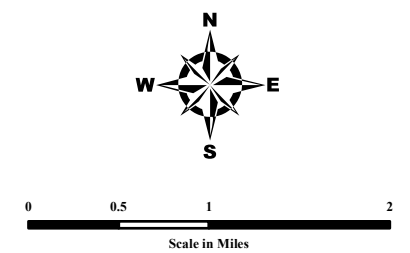
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Map 5-3: City of Oshkosh Comprehensive Plan Update Environmental - Water

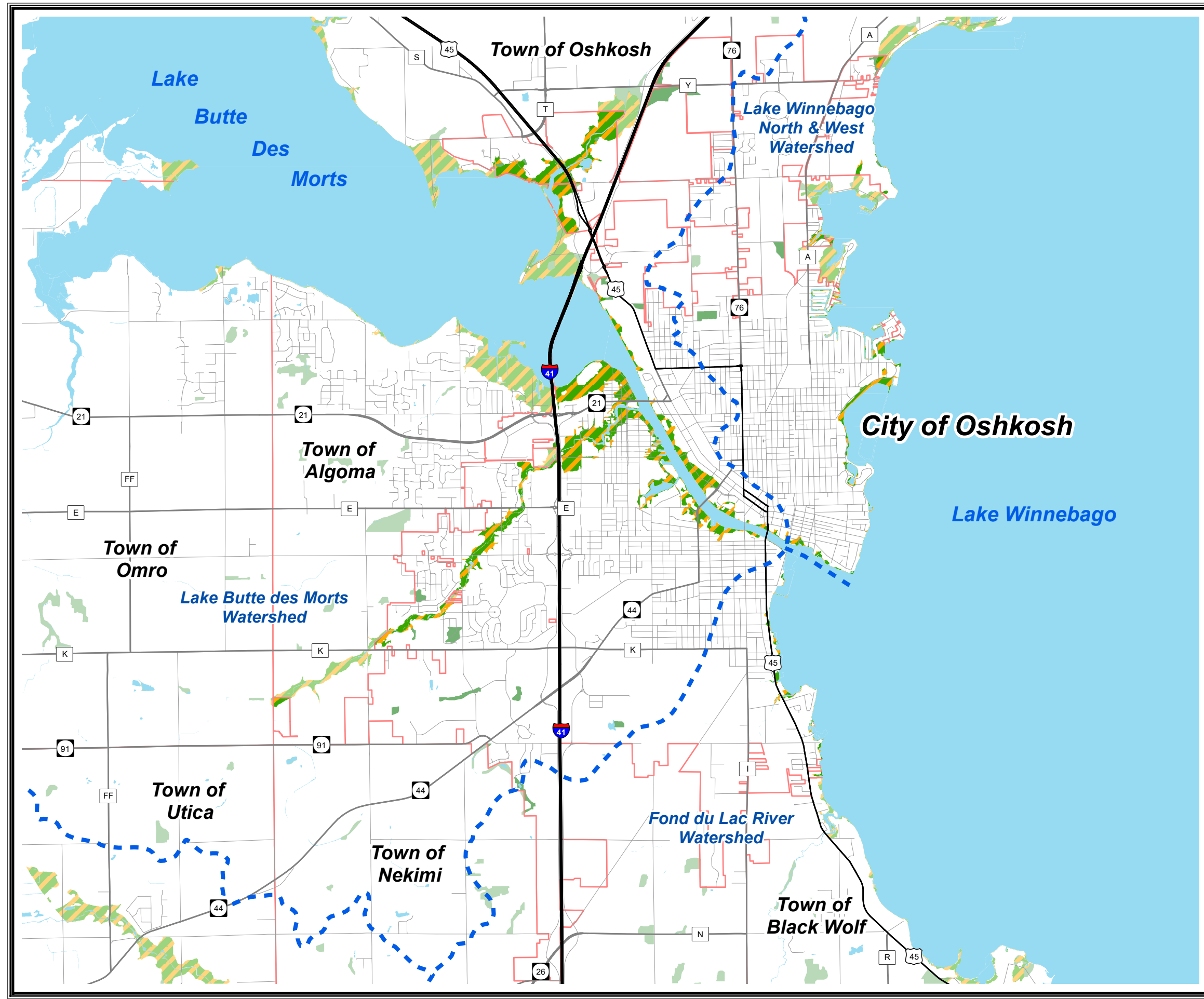
- Watershed Boundary
-  Floodplain & Wetland
-  Floodplain
-  Wetland

Source:
Base data provided by Winnebago County 2016.
Water resource data provided by WIS DNR 2016.

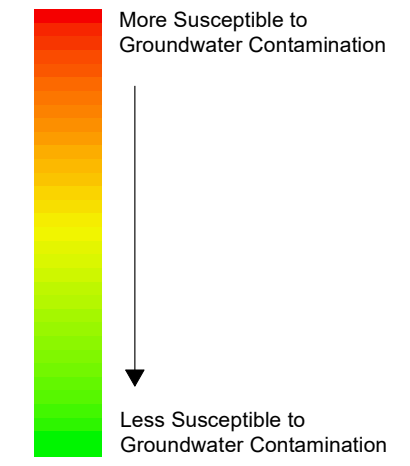


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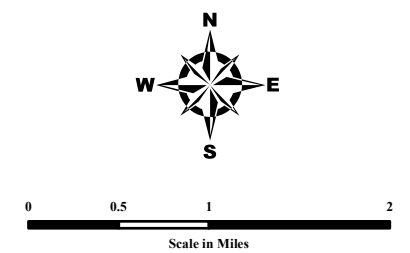
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Map 8-4: City of Oshkosh Comprehensive Plan Update Groundwater Contamination Potential



Source:
Base data provided by Winnebago County 2016.
Groundwater Contamination Potential provided by WIS DNR 2014.



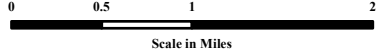
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Map 8-5: City of Oshkosh Comprehensive Plan Update Environmental - Conservation

- Planted Woodlands
- General Woodlands
- DNR Managed Lands

Source:
Base data provided by Winnebago County 2016.
Woodland data provided by ECWRPC 2016.
DNR data provided by WIS DNR 2015.



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