INTRODUCTION

Part II of the Langlade County All-Hazard Mitigation Plan provides general geographical information on Langlade County including demographic and economic characteristics. The general development patterns of the county are described in terms of current land use and future development trends.

In addition to developing an understanding of the planning area, this chapter represents the beginning stages of assessing vulnerability by inventorying the numbers, types and values of existing buildings, infrastructure and critical facilities within each participating jurisdiction in the planning area. This overall summary of each jurisdiction's vulnerability to hazards describes the potential impact on the community.

Land use and development trends are analyzed to project the number and type of potential future buildings, infrastructure and critical facilities within each jurisdiction so that mitigation options can be considered in future land use decisions.

The resulting information is an important element of the planning process, since sound alternative mitigation strategies cannot be formulated and evaluated without an in-depth knowledge of the relevant conditions in the study area.

GENERAL GEOGRAPHY

Location

Langlade County is located in northern Wisconsin (See Map 1). The largest city and county seat is Antigo in the south-central portion of the county. The Village of White Lake is located in the eastern part of the county. There are also several unincorporated places dispersed around the county. The county is bounded on the north by Oneida and Forest Counties, on the east by Oconto County, on the south by Menominee, Shawano and Marathon Counties, and on the west by Lincoln County.

Langlade County lies approximately 81 miles northwest of Green Bay; 181 miles northwest of Milwaukee; and 170 miles north of Madison. Major metropolitan areas outside of Wisconsin are Chicago, 267 miles southeast; Minneapolis-St. Paul, 207 miles west; and Duluth, 229 miles northwest.

Map 1 Location

Civil Divisions

There are 19 municipalities (17 towns, one village and one city) in the Langlade County planning area. These units of government provide the basic structure of the decision making framework. The county has a total area of about 888 square miles, of which 1.9 percent is water. The area and proportion of the county within each civil division are presented in ***Table 1***.

Table 1 - Geographical Size by Municipality

	Area in square miles*			
Municipality	**Water area**	**Land area**	**Total area**	**Area as % of County***
Ackley town	0.35	70.63	70.98	8.0%
Ainsworth town	2.80	69.14	71.94	8.1%
Antigo town	0.04	31.03	31.08	3.5%
Elcho town	4.28	70.97	75.24	8.5%
Evergreen town	0.46	35.78	36.24	4.1%
Langlade town	1.00	71.42	72.42	8.2%
Neva town	0.45	37.29	37.74	4.3%
Norwood town	0.56	35.57	36.13	4.1%
Parrish town	0.41	36.18	36.58	4.1%
Peck town	0.18	37.04	37.22	4.2%
Polar town	0.37	35.55	35.92	4.0%
Price town	0.12	36.12	36.32	4.1%
Rolling town	0.05	35.91	35.96	4.1%
Summit town	0.02	36.40	36.43	4.1%
Upham town	3.61	70.31	73.92	8.3%
Vilas town	0.03	35.81	35.84	4.0%
Wolf River town	2.08	116.78	118.86	13.4%
White Lake village	0.29	2.18	2.47	0.3%
Antigo city	0.05	6.54	6.59	0.7%
Langlade County	17.24	870.64	887.88	100.0%

Source: U.S. Census and NCWRPC * Totals may not add due to rounding.

Topography

The landscape of Langlade County is primarily the result of glaciation. The relief is characterized by moraines, outwash plains, and a variety of other glacial features. The moraines are primarily gently sloping to very steep. The outwash plains are smooth and level. The Antigo Flats, a major outwash plain, in the south-central part of the county was an area not covered by ice during the most recent glaciation. Elevations range from about 1,070 feet above sea level in the southeast corner (Wolf River) to 1,903 feet above sea level in the Town of Langlade.

Climate

Langlade County has a continental climate characterized by cold, snowy winters, warm summer days and cool summer nights. The short frost-free period during the summer restricts suitable crops mainly to forage, small grain, and vegetables. Precipitation is fairly well distributed throughout the year, reaching a peak in summer. Snow covers the ground much of the time from late fall until early spring. For the last year the average annual precipitation of 29.35 inches and average annual snowfall of 53 inches. June was the wettest month 3.9 inches of rain and December was the month with the most snow of 15 inches. The prevailing wind is from the southwest. Average wind speed is highest in spring at 12 miles per hour.

DEMOGRAPHIC AND ECONOMIC PROFILE

Population and Households

The 2023 ACS 5-year population estimate reported a population base of 19,473 people. This represents a decrease of 2.6 percent or 504 residents from the 2010 Census reported population of 19,977 people. Langlade County has underperformed along with most of its neighbor counties versus the overall state average (refer to ***Table 2***). Within Langlade County itself, most of the individual municipalities lost population. Only seven towns: Ainsworth, Langlade, Norwood, Polar, Price, and Wolf River townships saw growth between 2010 and 2023 (refer to ***Table 3***).

Wisconsin Applied Population Lab reports indicate that this decline in population is part of a larger pattern of rural population loss across the Midwest. In Wisconsin, the northern counties were the most affected. One big factor was the experiencing more deaths than births in these areas. In addition, young people are tending to move out of more rural areas for multiple reasons including: job opportunities, educational opportunities, the excitement of city-life, and desire for diversity and cultural amenities.

Table 2 - Population of Adjacent Counties				
County	2010	2023	Change	% Change
Langlade	19,977	19,473	-504	-2.6
Forest	9,304	9,261	-43	-0.5
Oconto	37,660	39,329	1,669	4.2
Menominee	4,232	4,256	24	0.6
Shawano	41,949	40,927	-1,022	-2.5
Marathon	134,063	138,067	4,004	2.9
Lincoln	28,743	28,403	-340	-1.2
Oneida	35,998	38,007	2,009	5.3
Wisconsin	5,686,986	5,892,023	205,037	3.5

Source: U.S. Census Bureau, 2018-2023 American Community Survey 5-Year Estimates

Table 3 - Population and Households Size of Civil Divisions						
MINOR CIVIL DIVISION	2010 Population	2010 Households	2023 Population	2023 Households	2010 – 2023 % Change in Population	2010 – 2023 % Change in Households
Ackley town	524	211	501	180	-4.4	-14.7
Ainsworth town	469	222	616	304	31.3	36.9
Antigo town	1,412	580	1,364	569	-3.4	-1.9
Elcho town	1,233	579	1,199	565	-2.8	-2.4
Evergreen town	495	209	485	214	-2.0	2.4
Langlade town	473	223	516	227	9.1	1.8
Neva town	902	369	829	336	-8.1	-8.9
Norwood town	913	360	975	365	6.8	1.4
Parrish town	91	36	59	23	-35.2	-36.1
Peck town	349	144	303	119	-13.2	-17.4
Polar town	984	384	1,047	377	6.4	-1.8
Price town	228	94	347	104	52.2	10.6
Rolling town	1,504	576	1,344	489	-10.6	-15.1
Summit town	163	71	118	53	-27.6	-25.4
Upham town	676	320	592	303	-12.4	-5.3
Vilas town	233	93	171	71	-26.6	-23.7
Wolf River town	731	347	745	367	1.9	5.8
White Lake village	363	156	204	115	-43.8	-26.3
Antigo city	8,234	3,613	8,058	3,825	-2.1	5.9
Langlade Co. Total	**19,977**	**8,587**	**19,473**	**8,606**	-2.6	0.2

Source: U.S. Census Bureau, 2018-2023 American Community Survey 5-Year Estimates

Between 2010 and 2023, the most significant growth occurred in the Town of Price a 52.2% increase. The Town of Ainsworth was second with a 31.3% increase. Also notable was Town of Langlade with a 9.1% increase. Significant losses were experienced by the Village of White Lake down 43.8%, Town or Parrish down 35.2% and Town of Summit down 27.6%. The City of Antigo also exhibited a decline of about 2.1%.

Population concentrations and trends are important when prioritizing hazard mitigation strategies. Approximately 41% of the population is classified by the Census as urban and 59% is rural. The City of Antigo is the most densely populated and developed area in the county. Other areas of population concentrations are the Village of White Lake, and 17 unincorporated places including Bryant, Deerbrook, Elcho, Elmhurst, Elton, Holister, Kempster Langlade, Lily, Neva, Neva Corners, Parrish, Pearson, Phlox, Pickeral, Polar and Summit Lake. Map 2 (Land Use) shows areas of population concentrations in the county. Map 11 Tornado Vulnerability also shows development density throughout the county to help show areas of full and seasonal populations. Overall population density of the county is 22 persons per square mile which ranges from a high of 1,232 in the City of Antigo to a low of 2 in the Town of Parrish.

According to the US Census 2018-2023 American Community Survey 5-year estimates the median age of residents in Langlade County is 49.0. The combination of negative natural increase combined with the outflow of younger residents will likely continue the aging of the county population compared to the state as a whole.

Seasonal Population

In addition to the regular full-time resident population, the impact of seasonal population cannot be overlooked when planning for hazards. Although not as significant as in neighboring counties, 22% of Langlade's housing stock has been identified as seasonal/recreational. ***Table 4*** shows estimated seasonal residents by municipality. Determining when and for how long these seasonal residents will be in the county is problematic, but the numbers give some indication of what weekend or other peak period population levels might be. Seven of the nineteen municipalities can see their populations more than double with seasonal population. Towns of Elcho, Upham and Wolf River see the largest percentage increases in seasonal population.

Another component of the seasonal population includes short-term accommodations such as campgrounds or hotel-style lodging. The scope of this plan did not provide for a detailed inventory of accommodations; however, the Wisconsin DNR completed a general inventory as part of its statewide comprehensive outdoor recreation plan. That inventory identified 430 hotel/motel beds, 7 bed and breakfast beds and 42 other types of beds available around the county. The DNR also identified 546 campsites in various campgrounds across the county as well as educational/recreational camps with capacity for 1,752 individuals. The seasonal population can increase the total population of the count by more than 36% at peak times.

Table 4 - Estimated Seasonal Resident Population

Civil Division	2023 Seasonal Housing Units	Estimated Seasonal Population
Ackley town	41	114.0
Ainsworth town	224	454.7
Antigo town	67	160.8
Elcho town	838	1776.6
Evergreen town	49	111.2
Langlade town	170	380.8
Neva town	79	195.1
Norwood town	84	222.6
Parrish town	67	160.1
Peck town	51	130.1
Polar town	63	173.9
Price town	20	66.8
Rolling town	55	151.3
Summit town	95	211.9
Upham town	542	1056.9
Vilas town	55	132.6
Wolf River town	522	997.0
White Lake village	53	93.8
Antigo city	521	1073.3
Langlade County	2,647	5902.8

Source: U.S. Census 2018-2023 American Community Survey 5-Year Estimates and NCWRPC

Employment

In addition to seasonal swells in employment, the number of people working in a given locality fluctuates on a daily basis. The county is a net importer of labor. In other words, the county has more local jobs than residents who work in the county. About 56% of working residents travel to work outside the county, while about 44% of the county's workforce enters from other counties. The top five counties that Langlade County has inflow from are Marathon, Shawano, Oneida, Lincoln and Portage. The top five destination counties for Langlade commuters are Marathon, Brown, Oneida, Lincoln and Shawano.

There is a cluster of seasonal leisure and hospitality employment within the county, however, three employment sectors have the greatest impact on Langlade County's economy, comprising over 50% of the job base in the county or about 4,601 workers. The Manufacturing sector employs 19% of the workforce, the Education and Health Services sector employs 17% and the Retail Trade sector employs 15%. The importance of these sectors can be seen in the listing of the county's top employers. Table 5 identifies the top employers and their general location in the county.

Table 5 - Top Employers in Langlade County

Company	Product or Service	Size	Location
Aspirus Langlade Hospital	General Medical/ Surgical Hospitals	250-499	City of Antigo
Antigo School District	Elementary & Secondary Schools	250-499	City of Antigo
Amron	Fuses-Electric Mfg	100-249	City of Antigo
Antigo Neon	Sign Mfg	100-249	City of Antigo
Kretz Lumber Co Inc	Sawmill	100-249	City of Antigo
County of Langlade	Exec. & Legislative Offices - Gov't	100-249	Various locations
Pick'N Save	Supermarket	100-249	City of Antigo
Plaspack USA Inc	Textile Goods	100-249	City of Antigo
Robbins Sports Surfaces	Floors-Sports	100-249	Village of White Lake
Waukesha Bearing Corp	Bearings-Mfg	100-249	City of Antigo
Covantage Credit Union	Credit Union	100-249	City of Antigo

Source: Wisconsin DWD County Workforce Profile and NCWRPC

Manufacturing is the largest employment industry in the county and is represented by Amron and Antigo Neon in the City of Antigo. The Education and Health Care Centers sector is well represented on the top employers list with the number one spot in Langlade Hospital and the Antigo School District at number two, as well as Eastview Rehab Center. These are primarily located within the City of Antigo.

Amtech Corporation, Plaspack Inc., and Waukesha Bearings are the Counties' major manufacturing employers located in the City of Antigo Industrial Park on the north side of the city. Manufacturing has direct and indirect links to employment in natural resources, business services, transportation and wholesale trade.

Identifying locations of large employment is important when prioritizing hazard mitigation strategies. From the list of top employers, the City of Antigo is clearly the primary employment and service hub in the county.

LAND USE / COVER AND DEVELOPMENT PATTERNS

Land use is an important determinant in the potential impact a particular hazard may have, and in the actions which may be taken to mitigate that impact. An understanding of the amount, type, and spatial distribution of urban and rural land uses within the county is an important consideration in the development of a sound hazard mitigation plan.

The North Central Wisconsin Regional Planning Commission (NCWRPC) has categorized land use in Langlade County into general classifications using 2020 aerial photography to digitize a land use Geographic Information System (GIS) coverage. Map 2 shows the land use and development patterns in Langlade County. ***Table 6*** shows the acreage and percent of each classification. ***Map 8*** Areas of Vulnerability also shows development density throughout the county to help show areas of potential impact.

Agriculture and Forestry

The dominant land-use in Langlade County is forestry. Land area in the county is approximately 77 percent forested, with about 435,000 acres of woodland. Forest products are a significant element of the county's economy from saw logs to veneer, to cordwood and pulp, to Christmas trees and boughs, and even maple syrup. Agricultural land, which is mostly located on previously forested tracts that were cleared by early settlers, covers another 14.5 percent of the county's land area. Agriculture is also an important part of the county's economy. Langlade County is one

Wisconsin's leading producers of both potatoes and oats. Wheat, barley, snap beans and forage hay are also significant crops. Dairy and beef production continues to be significant but have been declining over time.

Map 2 Generalized Land Use

Commercial, Industrial and Institutional Development

Commercial, industrial and institutional development makes up only about 0.6 percent of the total area of the county. Commercial and industrial land uses are mostly located in the City of Antigo, but pockets are scattered around the county. Much of the industry is related to processing forest and agricultural products. There are three serviced industrial parks in Langlade County including a 146 acre site in the City of Antigo, a 20 acre site in the Town of Elcho and a 10 acre site in the Village of White Lake. A number of non-metallic mining sites, or quarries, are also included with industrial. Government and other institutional facilities are concentrated in the City of Antigo, however a variety of facilities are scattered throughout the county, such as rural schools, town halls and the Langlade County airport just east of Antigo.

Residential Development

Residential development makes up approximately two percent of the total county land area. Residential concentrations are scattered throughout the county (see "Population and Households" above). Much of the rural development is related to recreational demand as various types of housing have clustered along streams and lakes.

There are a number of mobile home parks in the county. According to the U.S. Census, there were about 756 mobile homes in 2023. This is 6.2% of housing units for the County compared to 3.1 percent for the entire state. This is significant due to their vulnerability in natural hazards especially tornadoes. Map 8 (Areas of Vulnerability) includes areas of mobile home concentrations in the County.

Table 6 - Land Use in Langlade County

Description	Acres	Percent
Agriculture	82,233	14.5%
Commercial, Industrial, Institutional	3,255	0.6%
Open Lands	16,785	3.0%
Outdoor Recreation	849	0.1%
Residential	12,403	2.2%
Transportation	5,866	1.0%
Water	11,121	2.0%
Woodlands	435,310	76.7%
Total	567,822	100.0%

Source: NCWRPC 2020 Generalized Land Use

Surface Water

Langlade County is part of three major river basins partially containing fourteen watersheds. The Wolf River and Upper Wisconsin River basins each have six watersheds within the county, while the Upper Green Bay Basin has two.

The county has 843 lakes and 225 streams within the watersheds (see Map 3). Most of the lakes are spring or seepage lakes with some drainage or drained lakes. The majority of the lakes are small. Only 13 lakes are 100 acres or larger, but these account for about half of the surface area of lakes. White Lake is the largest spring lake. Sawyer Lake and the other spring lakes are landlocked. Upper Post Lake, an impoundment and drainage lake, is the largest in the county. The deepest lake is Jack Lake, which is up to 85 feet deep. All the streams, like the lakes, are important in the hydrological and ecological regime and are protected by shoreland zoning and physical protective measures.

Floodplains and wetlands are important subsidiary components to the surface water system, as described below.

Floodplains

The primary value of floodplains is their role in natural flood control. Flood plains represent areas where excess water can be accommodated whether through drainage by streams or storage by wetlands and other natural detention/retention areas. Specific areas that will be inundated will depend upon the amount of water, the distance and speed that water travels, and the topography of the area. If left clear of development, the areas shown on a map as floodplains should be able to handle the severest (regional) flood, i.e. those that have a probability of occurring once every one hundred years.

There is a value in preserving and protecting these natural flood control areas from encroachment. First, by preventing development in the floodplain, the cost of building dikes, levees, or other man-made flood control devices will be saved. Second, for each structure that is constructed in a flood-prone area, that area expands, potentially subjecting other structures originally built outside the delineated flood hazard area to the risk of flooding. Each new structure (or modification to existing) placed in the floodplain puts more life and property in danger.

Counties, cities, and villages are required to adopt reasonable and effective floodplain zoning ordinances. The requirement is found in section 87.30 of the Wisconsin Statutes and Chapter NR 116 of the Wisconsin Administrative Code. Floodplain zoning is designed to protect individuals, private property, and public investments from flood damage.

Floodplain zoning maps identify areas where major floods occur. Regulations prohibit development in the floodway, the most dangerous flood area. In other flood areas, the flood fringe, development that is built

above flood levels and otherwise flood-protected is allowed if it is in accordance with local ordinances. For regulatory purposes, a floodplain is generally defined as land where there is a one percent chance of flooding in any year (also known as the 100-year floodplain).

In order to participate in the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program, the county and the City of Antigo, have each completed a Flood Insurance Study and Flood Insurance Rate Maps (FIRMs) that encompass most of Langlade County, see Table 6a for a summary of NFIP status. The FIRMs delineate the "A" Zones including the floodway and flood fringe, those areas inundated by the 100-year flood within the county. The Village of White Lake had flood hazard areas identified within its boundaries but never participated in the program. Langlade County is not yet scheduled for map modernization at this time, so upgraded Digital Flood Insurance Rate Maps or DFIRMs are not yet available for the County.

Table 6a FEMA Community Status Book Report
Communities Participating in the National Flood Insurance Program
Wisconsin - Langlade County

Community	Initial FHBM	Initial FIRM	Current Map	Program Entry
Langlade County	05/14/82	09/28/90	09/28/90	09/28/90
City of Antigo	11/30/73	11/30/73	10/31/75	11/30/73
Village of White Lake	10/01/76	n/a	10/01/76	n/a

Source: FEMA, 2025

The NCWRPC digitized the existing county FIRMs for use in this plan. Although unofficial, this digital file indicates there are 25,495 acres of floodplain in Langlade County, or 4.5 percent of the land area. Map 4 shows these approximate floodplains. Floodplains in Langlade County are small and floods occur only during periods of exceptionally heavy rainfall. Currently, there are no repetitive loss structures, those with multiple flood insurance claims, in Langlade County.

The Biggert-Waters Flood Insurance Reform Act was signed into law in July, 2012. This act implemented significant reforms to the structure of flood insurance under the National Flood Insurance Program (NFIP). Then, on March 21, 2014, President Obama signed the Homeowner Flood Insurance Affordability Act of 2014 (HFIAA) into law amending the NFIP further. These new laws impact the various elements of the NFIP, including Insurance, Flood Mapping, Mitigation, and Floodplain management.

HFIAA repeals and modifies certain provisions of the Biggert-Waters Flood Insurance Reform Act, and makes additional program changes to other aspects of the program not covered by that Act. Many provisions of the Biggert-Waters Flood Insurance Reform Act remain and are still being implemented. The new law lowers the recent rate increases on some policies, prevents some future rate increases, and implements a surcharge on all policyholders. The Act also repeals certain rate increases that have already gone into effect and provides for refunds to those policyholders. Both of these laws are important to local floodplain managers and planners because rate structure increases may increase interest of policy holders that own floodprone properties in alternatives to mitigate both flood risk and flood insurance costs for those properties.

Wetlands

Wetlands perform many indispensable roles in the proper function of the hydrologic cycle and local ecological systems. In terms of hazard mitigation, they act as water storage mechanisms in times of high water. Like sponges, wetlands are able to absorb excess water and release it back into the watershed slowly, preventing flooding and minimizing flood damage. As more impermeable surfaces are developed, this excess capacity for water runoff storage becomes increasingly important.

The DNR has identified the location of wetlands on their digital wetland GIS database. According to this, Langlade County has 107,440 acres, or about 18.9 percent of its total area. Map 3 shows these wetland areas to be scattered throughout Langlade County. Wetlands are more extensive in the northwestern half of the county including the towns of Ackley, Vilas, Peck, Summit, Upham, Parrish, Elcho and Ainsworth.

Destruction of wetlands can occur through the use of fill material, which can destroy the hydrological function of the site and open the area to improper development. The Wisconsin Department of Natural Resources (DNR) has promulgated minimum standards for managing wetlands.

Map 3 Surface Water, Watersheds and Wetlands

Map 4 Floodplains and Dams

Open Lands/Outdoor Recreation

Recreational lands including parks and outdoor sports facilities total about 849 acres or 0.1 percent of the county land area. Other lands may have recreational aspects, particularly woodlands. Open space and other lands are a catch all for open undeveloped land not wooded or part of a farm such as grassland. The transportation category is primarily the roadway travel corridors for federal, state, county and local highways and roads. Sometimes overlooked, transportation land use can be significant. In Langlade County, surface transportation facilities consume about 5,866 acres of land or about 1.0 percent of total land area. Note that this is almost two times as much land area as is used for commercial, industrial and institutional uses in the county.

FUTURE GROWTH AND DEVELOPMENT IN LANGLADE COUNTY

According to the current Langlade County Comprehensive Plan completed in 2019, future land use reflects no major changes in land use over the next 20 years. Forestry will continue to be the major land use in the County, accounting for over 56% of the land area, followed by preservation areas and open space (much of which is wooded wetland) at about 20% and agriculture at about 16%.

Residential growth is planned to the east and west of the City of Antigo in the Towns of Ackley and Antigo. The northern fringe of the City is expected to be more mixed uses with commercial and industrial. Elsewhere, scattered, low-density development is found in many parts of the County. Outside the city and village, there is some concentration of residential development around many of the larger lakes in the northern part of the County.

The Comprehensive Plan projects overall residential land demand based on the addition of 225 units for year round residents. This does not account for seasonal housing making up about 20 percent of the housing stock. Assuming a county wide average of about 2 acres of land needed per unit, 23 acres per year on average is expected to be needed to accommodate anticipated housing unit growth by the year 2040.

Commercial and industrial development is subject to market forces and difficult to predict, however, the Comprehensive Plan projects future development of about 221 acres for commercial uses and about 179 acres for industrial uses over the next 20 years.

Therefore, between 2020 and 2040 based on projections presented in the County Comprehensive Plan, it is anticipated that approximately 250 acres will be needed every five-years to support residential, commercial and industrial development demands in Langlade County. Over the twenty-year period about 1,000 acres will be needed to meet overall development demands. However, the backlog of parcels currently available will buffer the amount of "new" acreage taken for development.

New infrastructure or public facilities will be somewhat minimal as budget constraints will continue to curtail local government ability to develop new facilities and result in a tendency to make do with existing infrastructure and delay expansion plans. [Insert notes on new / pending facilities]

The county's population is generally older with a median age of 49 years, versus statewide median age of 40.1 years. Over the next few decades, the population will become even older, aging much more quickly than the state as a whole. In fact, based on previous projections which under the new population trends are unlikely to change directions, the number of persons 65 and older will exceed the population under 25 by 2030. This will have implications affecting the demand for emergency services.

PUBLIC FACILITIES AND SERVICES

Transportation

The transportation system of Langlade County provides the basis for movement of goods and people into, within and out of the County. An efficient system is essential to the sound social and economic development of the county and region. The analysis of transportation routes is important in the possible event of a disaster (See ***Map 5***).

The principal highway serving Langlade is the north-south U.S. Highway 45 which bisects the county through the City of Antigo. State Highway 64 provides the main east-west route across the southern part of the county through both Antigo and the Village of White Lake. State Highways 17, 47, 52 and 55 also serve the county. These highways link the county with neighboring communities and are vital to the county's tourism and recreation-based economy.

Networks of county trunk highways collect traffic from rural land uses. These county highways serve an important role in linking the area's agricultural and timber resources to population centers and major highways. Local roads provide access to local development, farming and forest areas, as well as the county's lake areas.

The Wisconsin Department of Transportation maintains 13 bridges on U.S./State highways within the county. Langlade County itself owns another 26 bridges on various county highways. Local roads include forty bridges with ten in the City of Antigo and thirty in various towns.

Through the Aging and Disability Resource Center of Central Wisconsin, Langlade County coordinates transit services for the elderly and disabled in the county, both in the city and to rural towns. The service is also open to the general public including service to the Northcentral Technical College. Other transportation is coordinated on an as needed basis for groups such as children and veterans.

The Langlade County Municipal Airport, located just east of the City of Antigo, serves the area. The airport provides general aviation service for private airplanes and daily airfreight. The airport is classified as a Transport/Corporate airport. This category includes corporate jets, small passenger and cargo jets used in regional service and small airplanes used in commuter air service. These aircraft generally have a gross take-off weight of less than 60,000 pounds and wingspans of less than 118 feet with approach speeds below 141 knots. There are private landing strips located

in the Towns of Norwood and Upham, as well as a heliport at the Antigo hospital. The nearest commercial passenger service is located in Rhinelander or Wausau.

There are currently no active rail lines within Langlade County. The nearest access to freight rail would be the east-west line through Rhinelander or the north-south line through Wausau.

Utilities

Utility systems are important in hazard mitigation planning because of the dependence on water, wastewater treatment, gas service, electricity, and telecommunications. Because of this reliance and vulnerability to hazards, utility systems must be identified for this Plan, see Map 6.

The protection of the public water supply facilities from potential contamination from hazards such as flooding is a consideration for hazard mitigation planning. The City of Antigo, Village of White Lake and the Town of Elcho provide municipal water supplies for domestic and commercial use.

The protection of the wastewater facilities is an important consideration for hazard mitigation planning because of its potential to contaminate nearby waterbodies in the event of high water. Also of concern during periods of flooding is the threat of damage to infrastructure of associated facilities. Three municipal wastewater treatment facilities serve Langlade County: the City of Antigo, the Village of White Lake and the Town of Elcho.

The infrastructure of electric and telephone lines can be threatened in the events of high wind, ice storms, tornadoes, flooding, and fire. Wisconsin Public Service and Alliant Energy provide electric service throughout the county. Since 2001, an independent company, American Transmission Company LLC (ATC), has owned, maintained, and operated the major transmission facilities located in the State of Wisconsin, including Langlade County. The general locations of the major electrical transmission facilities, owned by ATC are shown on Map 6. Frontier is the primary provider of telephone service in the county.

Nationwide, cellular telephone systems account for about 80 percent of all 911 calls. Service coverage is based upon the handset receiving a direct line-of-sight signal from a system provider's antenna on a tower. See Map 6 for tower locations within the County. Limitations for receiving a signal include topography and the thickness & type of building materials. Signals generally cannot travel well in dense forest cover, over tall hills, or through

thick or multiple cement walls. There are remote areas of the County where there are gaps in cellular coverage or service is spotty.

The ANR pipeline is the main source of natural gas for Langlade County. A main line runs north-south between Lincoln and Marathon counties. A spur line serves the City of Antigo in Langlade County, branching off the main near the Lincoln-Marathon border. From this spur, City Gas Company provides residential and commercial gas service in Antigo and the surrounding area.

Emergency Services and Facilities

The type and location of public emergency services are an important consideration in hazard mitigation planning, because of the potential direct involvement of such facilities in certain hazard situations.

There are ten fire stations located within Langlade County, see ***Map 7*** for fire service areas. Certain areas of the county are served by fire departments stationed outside the county. These include the Towns of Parrish and Summit that are served by the Town of Russell Fire Department located in Lincoln County, and remote parts of the Town of Wolf River that receive service from the Doty Fire Department (Oconto County), Wabeno Fire Control (Forest County) or the Townsend Fire Department. The Pickerel Fire Department covers the Town of Ainsworth within Langlade County and part of the Town of Nashville in Forest County. The Town of Antigo Fire Department has two stations to cover the Towns of Antigo, Polar and Price. The City of Antigo Fire Department is the only force in the county that provides full-time, paid service, while the rest of the departments rely on volunteers for this service.

There are three EMS providers based in the County. City of Antigo EMS provides service to Antigo and most towns. Pickerel EMS serves the Towns of Ainsworth and Langlade. Troutland Rescue Squad is based in White Lake and serves the village and the Towns of Evergreen and Wolf River for rescue services but ambulance services are handled by City of Antigo. From outside the county, the Town of Parrish is served by Rhinelander EMS, and Town of Norwood is serviced by Birnamwood EMS.

The Langlade County Sheriff's Department provides service to all the towns and the village for law enforcement. The Sheriff's Department has eighteen officers, eight dispatchers and sixteen jail employees. The City of Antigo has its own police department. The main correctional facility within the county is the Langlade County Jail in Antigo.

Map 5 Transportation

Map 6 Utilities

To coordinate these services, Langlade County has created an *Emergency Operations Plan (EOP)*. This provides a general overview for county and municipal emergency response personnel during response to a number of disasters. This document serves to coordinate the County and local units of government during times of response and recovery. It also provides a link between the county and municipal plans.

Critical Community Facilities

In addition to emergency service facilities, other community facilities are also important in hazard mitigation planning. Government administration buildings serve as the headquarters that link to resources in helping solve potential problems. Hospitals are very important for knowing where to transport injured residents and as to how many people can be accommodated if a hazard occurs.

Aspirus Langlade Hospital in the City of Antigo is a 25-bed, 95,000 square feet two-story level 4 trama center facility affiliated with over 50 health care providers. There two clinics also in the city as well as one located in Elcho. There are three nursing homes within the City and a number of other facilities dedicated to the care and sheltering of the elderly and disabled around the county. Nursing homes are vulnerable, because of the high level of services required by the residents. The schools are facilities that are important, since hundreds of the county's children are there for most of the year. Map 7 shows the location of selected types of critical community facilities within Langlade County.

Map 7 Critical Community Facilities

INVENTORY & VALUE OF STRUCTURES/PROPERTY IN LANGLADE COUNTY

The value of the real estate and personal property in a community reflects the upper end of the potential for property damages in each community. The assessed value of each municipality represents the estimate of market value. **Table 7** lists each municipality's assessed values for real estate, personal property, and land. The term personal property includes: all goods, wares, merchandise, chattels and effects of any nature or description having any marketable value and not included in the term "real property."

Table 7	Tax Values by Municipality				
Municipality	**Improvement Value**	**Land Value**	**Personal Property**	**Total**	**% of Total**
Ackley town	$41,062,400	$15,138,800	$94,700	$56,296,900	2.9%
Ainsworth town	$78,652,700	$44,976,500	$977,500	$124,606,700	6.5%
Antigo town	$124,192,600	$27,418,200	$442,200	$152,673,300	7.9%
Elcho town	$202,565,800	$173,566,100	$7,176,000	$383,328,800	20.0%
Evergreen town	$33,920,900	$16,542,800	$81,600	$50,545,300	2.6%
Langlade town	$58,523,900	$26,968,600	$620,800	$86,113,300	4.5%
Neva town	$71,621,200	$24,546,700	$160,500	$96,333,000	5.0%
Norwood town	$79,012,200	$25,417,400	$360,400	$104,794,800	5.5%
Parrish town	$12,798,100	$7,305,500	$174,700	$20,278,300	1.1%
Peck town	$27,710,900	$15,150,100	$9,100	$42,870,100	2.2%
Polar town	$92,063,200	$27,299,200	$71,300	$119,486,700	6.2%
Price town	$21,171,600	$8,371,400	$173,500	$29,716,500	1.5%
Rolling town	$118,470,700	$25,584,800	$187,700	$146,094,700	7.6%
Summit town	$14,231,000	$13,755,900	$523,300	$28,510,200	1.5%
Upham town	$146,233,600	$116,144,600	$1,789,600	$264,167,800	13.7%
Vilas town	$22,881,200	$15,651,900	$326,400	$38,859,500	2.0%
Wolf River town	$115,877,500	$60,488,000	$233,400	$176,600,600	9.2%
White Lake village	$21,811,700	$4,768,500	$134,800	$27,062,100	1.4%
Antigo city	$414,032,100	$65,260,400	$8,916,300	$491,674,400	25.6%
Langlade County	$1,260,989,500	$644,326,500	$13,402,700	$1,921,276,500	100.0%

Langlade County Tax Roll 2024 & Dept. of Revenue

As stated above, the valuation of property in a community reflects the potential for property damages across the community. However, only taxable properties are included in this valuation. Tax exempt government properties are not included. With Langlade County owning many critical facilities that are needed in times of disaster, the potential for damages to these structures could be devastating for the county. In ***Table 8a***, the county owned critical facilities are listed with the general location they are in and the value of the facilities. Estimates for local government facilities are given in Table 8b - d.

Table 8a	Value of County Owned Properties	
Name	**Value***	**Location**
Airport	$4,229,706.80	Antigo town
Camp Lyle	$494,645.80	Elcho
Camp Susan	$692,952.70	Deerbrook
Courthouse	$7,686,537.10	Antigo city
Fairgrounds	$11,492,397.40	Antigo city
Health Services Center	$7,330,354.90	Antigo city
Highway Department	$8,836,842.30	Antigo city
Highway Department	$196,478.70	Lily
Jack Lake	$2,017,219.60	Deerbrook
Kettlebowl Ski Hill	$496,916.20	Price town
Other Misc. Property	$111,551.00	Various locations
Other Parks & Rec	$754,426.20	Various locations
Post Lake Dam Area	$493,882.40	Elcho
Resource Center	$1,620,026.10	Antigo city
Safety Building	$15,787,090.00	Antigo city
Sheriffs Storage	$569,175.20	Antigo city
Total	$62,810,202.40	**Above Locations**

*=Includes insured buildings, contents, and property in the open.
Source: Statement of Values State of Wisconsin Local Government Property Insurance Fund.

Langlade County Courthouse and Safety Building

Table 8b: Value of City Owned Properties	
Property	**Value***
Cemetery	$384,162.90
City Hall / Fire Dept.	$4,279,410.30
Landfill	$1,387,225.40
Library	$6,179,226.90
Library Branches**	$98,210.20
LIfe Beyond Wheat Bldg	$1,839,370.50
Lift Stations	$742,881.70
Parks & Recreation	$4,591,650.80
Police Department	$186,712.90
Public Works Shop	$3,811,923.50
Sewage Treatment Plant	$35,282,467.00
Water Works	$13,690,348.10
Well Locations	$863,406.50
Misc. Other Property	$1,058,607.00
Total	**$74,395,602.60**

*=Includes insured buildings, contents, and property in the open.
** = Locations: Elton, White Lake, Elcho.
Source: Statement of Values State of Wisconsin Local Government Property Insurance Fund – estimated by NCWRPC.

Table 8c: Value of Village Owned Property	
Property	**Value***
Municipal Bldg / Shop	$1,529,394.90
Fire Station	$619,776.30
Well Locations	$589,117.10
Ball Park	$274,638.10
Pavilion Lake Park	$662,549.80
Storage Garage	$67,180.30
Erdman Road Lagoon	$87,607.30
Water Tank	$456,767.30
Misc. Other Property	$802,777.80
Total	**$5,089,808.90**

*Includes insured buildings, contents, and property in the open.
Source: Statement of Values State of Wisconsin Local Government Property Insurance Fund.

Table 8d: Value of Town Owned Properties		
Town	**Property**	**Value***
Ackley town	Town Hall	$218,027
Ainsworth town	Town Hall	$218,027
Antigo town	Town Hall / Fire Dept.	$605,922
Elcho town	Town Hall & Misc. Facilities	$2,402,043.60
Evergreen town	Town Hall	$297,892
Langlade town	Town Hall / Fire Dept.	$605,922
Neva town	Town Hall & Storage Bldg	$158,906.00
	School Building	$33,831.60
Norwood town	Town Hall / Shop & Fire Dept.	$513,112.60
Parrish town	Town Hall	$218,027
Peck town	Town Hall	$218,027
Polar town	Town Hall	$218,027
Price town	Town Hall	$218,027
Rolling town	Town Hall/Concession Stand/Pavillion	$402,000
Summit town	Town Hall	$218,027
Upham town	Town Hall	$218,027
Vilas town	Town Hall	$218,027
Wolf River town	Town Hall	$218,027
*Includes insured buildings, contents, and property in the open. Source: NCWRPC Estimates.		

INTRODUCTION

Analyzing the hazards facing a community is an important step in the mitigation planning process. Before mitigation strategies can be determined, a risk assessment must be made. Part III of the Langlade County All-Hazards Mitigation Plan will focus on the following:

- Identification of all types of natural hazards that can affect Langlade County
- An analysis of each hazard identified as pertinent to Langlade County

The hazard analysis will consist of:

- Background information
- History of previous occurrences of hazard events
- An analysis of the County's vulnerability to future events
- An estimate of future probability and potential losses from the hazard

HAZARD IDENTIFICATION

The process of identifying those hazards that should be specifically addressed in the Langlade County All-Hazards Mitigation Plan was based on consideration of a number of factors. The process included a review of past hazard events to determine the probability of future occurrences and threat to human safety and property damage.

Worksheets from the Wisconsin Guide to All-Hazards Mitigation Planning were used by the Planning Taskforce to evaluate and rank the listing of possible hazards to help identify which hazards should be included in the Plan according to threat to human safety and possible damage to property. This hazard scoring exercise resulted in the selection of the following hazards listed in priority order:

1. Flooding / Dam Failure [NEEDS RANKING UPDATE]
2. Thunder Storm / Lightning / Hail
3. Tornado/ High Wind
4. Winter Storm / Extreme Cold
5. Forest Fire / Wildfire
6. Drought / Extreme Heat
7. Epidemic / Pandemic

Although fog can be an issue, it is not covered directly in this Plan due to a lack of ways to effectively mitigate it. Low magnitude earthquakes do occur occasionally in Wisconsin; however, none have exceeded a magnitude of 3.9, which would have vibrations similar to the passing of a semi-truck, therefore, earthquakes are not covered in this plan. Langlade County does not have avalanche, coastal hazard, hurricane, tsunami or volcano issues and conditions

for landslides, subsidence or expansive soil problems are not significant in the County.

This Plan Update focuses on natural hazards that have or could cause disasters that can be mitigated on a local level. Hazards that are considered "technological" or "manmade" include things like transportation incidents, structure fire, hazardous material incidents, civil disturbances, mass casualty events, war, criminal activity and terrorism (including active shooter, biological, chemical, explosive and nuclear attack). Current mitigation planning regulations do not require inclusion of technological or manmade hazards, so they are not dealt with directly in this Plan. This is in part to maintain the manageability of the mitigation planning activity and to reduce redundancies. Due to Homeland Security requirements, counties already plan and prepare for many of these types of events, so they are not included in this planning process to avoid duplication.

Some events that may under certain conditions be considered technological or manmade hazards in and of themselves such as supply disruption (including fuel shortage), power outage, computer failure, communications disruption, and municipal water contamination or water system failure are more commonly consequences of a hazard event, at least in central Wisconsin. As such, they are dealt with indirectly in this Plan as they relate to an addressed hazard. For example, heavy snow, high wind or tornadoes often result in power outages.

HAZARD ANALYSIS

The hazard analysis for each hazard included in this plan is broken down into four components, as follows:

1. Background on Hazard - The next step after identifying a hazard is to define the hazard and give some general background behind it. This can include occurrence of hazard within the county or state. This section may also give some indication of the risk to public health and safety and to personal and public property.

2. History of Hazards - Past experience of disasters is an indication of the potential for future disasters to which Langlade County would be vulnerable. A review of past occurrences for each identified hazard in Langlade County was completed.

Some disasters have had damage that exceeded the capabilities of local communities and state agencies. Federal assistance is then requested. Federal assistance may be offered through a variety of programs. Assistance may be directed to agricultural producers, individuals and families, businesses, or local

governments. There have been ten natural disasters in Langlade County, where a Presidential Declaration was requested since 1971 (5 received a Presidential Declaration). They include the following:

- 1971 Flooding
- 1971 Tornado
- **1973 Flooding – Presidential Disaster Declaration**
- 1975 Army Worm Infestation
- **1976 Drought – Presidential Emergency Declaration**
- **2002 Severe Storms/Flooding/ – Presidential Disaster Declaration**
- 2004 Flooding
- 2007 Tornado
- **2019 Thunderstorm Wind/ - Presidential Disaster Declaration**
- **2020 Covid-19 Pandemic- Presidential Disaster Declaration**

It should be noted that this significantly understates the number of events that have occurred in Langlade County. Almost every year there are significant weather events or disasters that cause millions of dollars in damage for which no Federal disaster assistance is requested. Major indicators of hazard severity are the deaths, injuries, and economic losses resulting from natural hazards and disasters.

The National Oceanic and Atmospheric Administration (NOAA) and National Climatic Data Center (NCDC) publish the National Weather Service (NWS) data describing recorded weather events and resulting deaths, injuries, and damages. From February 1, 1959, to December 31, 2024, NCDC reported 392 severe weather events for Langlade County. Over that 65 year period that is around 6 severe weather events per year.

Note, that this report focuses on the 10-year period from 2015 to 2024 for hazard analysis purposes. Other sources of data are used to supplement the NCDC data. These sources include Wisconsin Emergency Management, Wisconsin Department of Natural Resources, Langlade County Emergency Management and local news reports.

3. Vulnerability Assessment For Hazards - For each hazard identified, a summary of the impact that may be caused to the community is given. When possible, existing buildings, infrastructures, and critical facilities located in the hazard areas are identified. Critical facilities are community buildings that are especially important to the health and welfare of the population following hazard events. Examples of such facilities include hospitals, police & fire stations, town halls, and shelters.

Because this is a multi-jurisdictional plan, FEMA requires that the plan access each jurisdiction's risks where they vary from the risks facing the entire planning area. This section of the plan will identify variations in vulnerability for specific municipalities where they occur.

4. Future Probability and Potential Dollar Losses for Hazard - The historic data and vulnerability assessment for each hazard is used to project the potential future probability of that hazard occurring in the county, and the potential damages in dollars that might be reasonably expected. This section sets a benchmark for mitigation for each hazard.

HAZARD ANALYSIS: TORNADOS/HIGH WIND

Background on Tornado/High Wind Hazard:
A tornado is a relatively short-lived storm composed of an intense rotating column of air, extending from a thunderstorm cloud system. It is nearly always visible as a funnel, although its lower end does not necessarily touch the ground. Average winds in a tornado, although never accurately measured, are between 100 and 200 miles per hour, but some tornados may have winds in excess of 300 miles per hour.

A tornado path averages four miles, but may reach up to 300 miles in length. Widths average 300 to 400 yards, but severe tornados have cut swaths a mile or more in width, or have formed groups of two or three funnels traveling together. On average, tornados move between 25 and 45 miles per hour, but speeds over land of up to 70 miles per hour have been recorded. Tornados rarely last more than a few minutes in one location or 15 to 20 minutes in a ten-mile area.

Tornados are classified into six intensity categories, EF0-EF5, see Table 9. This scale is an updated or "enhanced" version of the Fujita Tornado Scale (or "F Scale"). The scale estimates wind speeds within tornados based upon the damage done to buildings and structures. It is used by the National Weather Service in investigating tornados and by engineers in correlating building design standards against anticipated damage caused by different wind speeds.

Wisconsin lies along the northern edge of the nation's maximum frequency belt for tornados, known as "Tornado Alley". Tornado Alley extends northeast from Oklahoma into Iowa and then across to Michigan and Ohio. Winter, spring and fall tornados are more likely to occur in southern Wisconsin than in northern counties. Tornados have occurred in Wisconsin every month except February.

High wind events, although technically not tornados, are included here due to the similarity of damages. Measured wind speeds are typically in the range of a

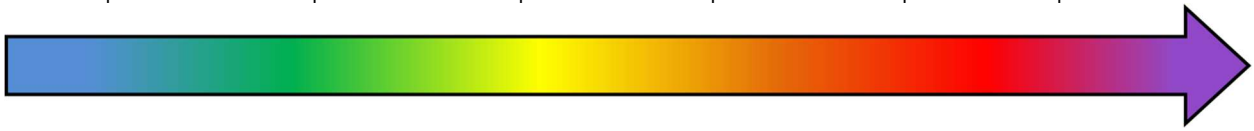
EF0 tornado and may even approach EF1 speeds. High or strong wind events can be associated with tornadic episodes, thunderstorms or even winter storms. The effects are often widespread, impacting areas hundreds of miles from the actual areas of thunderstorms or snow. Trees, signs and power poles are the most commonly affected by high wind events, but significant damage and bodily injury or death can occur.

Table 9
Tornado Wind and Damage Scale

Tornado Scale	Wind Speeds	Damage
EF0	65 to 85 MPH	Some damage to chimneys, TV antennas, roof shingles, trees, and windows.
EF1	86 to 110 MPH	Automobiles overturned, carports destroyed, trees uprooted
EF2	111 to 135 MPH	Roofs blown off homes, sheds and outbuildings demolished, mobile homes overturned.
EF3	136 to 165 MPH	Exterior walls and roofs blown off homes. Metal buildings collapsed or are severely damaged. Forests and farmland flattened.
EF4	166 to 200 MPH	Few walls, if any, standing in well-built homes. Large steel and concrete missiles thrown far distances.
EF5	OVER 200 MPH	Homes leveled with all debris removed. Schools, motels, and other larger structures have considerable damage with exterior walls and roofs gone. Top stories demolished

Source: National Weather Service

EF0	**EF1**	**EF2**	**EF3**	**EF4**	**EF5**
Weak	**Moderate**	**Significant**	**Severe**	**Extreme**	**Catastrophic**
65-85 mph	86-100 mph	111-135 mph	136-165 mph	166-200 mph	200+ mph



History of Tornados/High Wind in Langlade County:
Langlade County has had 8 reported tornados from 1959 to 2024, with none occurring within the study period between 2015 and 2024, see Table 10. The most recent tornadic event occurred on July 22, 2013. The storms produced a funnel cloud, isolated wind damage, and large hail as they moved across northeast Wisconsin. A funnel cloud was spotted west of Deerbrook (Langlade Co.), and thunderstorms winds downed trees near Keshena (Menominee Co.) and Oconto Falls (Oconto Co.). Golf ball size hail fell near Summit Lake (Langlade Co.), and quarter size hail fell near Abrams (Oconto Co.) and Byrant (Langlade Co.).

On July 9, 2013, A tornado formed near the Lincoln/Langlade County line and moved east shortly after 3:30 PM CDT. The tornado track was not continuous and damage was restricted to trees, tree limbs and power lines. The average path width was 75 yards.

On April 10, 2011 an EF1 tornado formed about five miles south of Parrish at 6:50 pm CDT and moved just east of north for a little over five miles. The tornado affected about 1600 acres of hardwood and softwood trees. It was estimated that over one million trees were snapped, uprooted, or suffered serious damage. The loss to timber alone is estimated at over one million dollars. One cabin was destroyed by fallen trees. The tornado was seen by a storm chaser at 6:55 pm CDT. The average width of the tornado was 250 yards.

On June 7, 2007, a powerful EF3 tornado with winds estimated at 150 to 160 mph caused significant damage in the White Lake area. The Bear Paw Outdoor Adventure Resort was severely damaged with every building (10) destroyed or damaged, including the three-story inn which pushed over by the high winds. One employee sustained minor injuries. Fortunately, there were only 9 people on site during the tornado; hundreds of visitors were due to arrive the next day. In addition, hundreds of acres of trees were flattened and 9 homes were damaged. Damages were estimated at approximately $2.2 million. This tornado persisted for an extended amount of time crossing several counties and was one of a 5-tornado outbreak that resulted in over $60 million in total damages and 4 injured. Presidential disaster declaration was applied for but not awarded.

A reported funnel cloud in 1994 formed over White Lake, but did not touch down until reaching Marathon County. Thunderstorm winds associated with this funnel cloud damaged trees and power lines. Another funnel cloud was reported in 2013 in Deerbrook. On April 27, 1984, a F2 tornado touched down for 8 miles causing $2.5 million in damages and injuring one person. Three barns, several cattle and two houses were destroyed, along with extensive tracts of timber. Two tornados actually occurred on the same day in 1976 within less than an hour as two separate F1 tornados. No one was injured in these events and property damage was relatively light at about $6,000. In September of 1971, the County

experienced a powerful F3 tornado that cut a 30-mile long 200-yard wide path injuring 1 and causing $250,000 in damages. Request for Presidential disaster declaration was not approved. Little information is available on the 1959 tornado.

Table 10 Reported Tornados in Langlade County

DATE	TIME	LOCATION	LENGTH (miles)	WIDTH (yards)	DEATHS	INJURIES	EF-SCALE
7/22/2013	4:44 PM	Deerbrook	N/A	N/A	0	0	*
7/9/2013	2:32 PM	Parrish	9.52	100	0	0	EF0
4/10/2011	5:50 PM	Parrish	5.3	400	0	0	EF1
6/7/2007	3:48 PM	V. White Lake	7.4	1,000	0	1	EF3
7/8/1994	2:50 PM	V. White Lake	N/A	N/A	0	0	*
4/27/1984	2:50 PM	Ackley, Vilas, Peck	7.5	75	0	1	EF2
6/13/1976	9:00 AM	Ackley, Peck, Neva	4.7	33	0	0	EF1
6/13/1976	8:10 AM	Rolling, Norwood, Polar, Evergreen	17.2	50	0	0	EF1
9/28/1971	4:10 PM	Rolling, Antigo, C. Antigo, Polar, Evergreen, V. White Lake, Wolf River	29.5	200	0	1	EF3
5/4/1959	11:45 AM	Neva	1	100	0	0	EF0

Source: National Climatic Data Center
** Funnel Cloud*

The National Climatic Data Center database shows 4 high or strong wind events from 2015 to 2024.

The latest high wind event happened on December 16, 2021, when a strong storm system tracked across the central Plains and through the Upper Mississippi Valley, sweeping a cold front through the region during the late evening hours of Friday (12/15) and early morning hours of Saturday (12/16). High winds downed trees and power lines in Langlade County. Peak winds of 53 mph were measured at the Antigo airport with sustained winds over 40 mph for over an hour.

On June 10, 2019, when a line of showers and strong winds downed several trees around Antigo. Winds were estimated near 55 mph.

On July 19, 2019 a line of severe thunderstorms moved across much of central, north central, and eastern Wisconsin during the evening hours. Widespread tree and power line damage was reported from central Wisconsin into the Fox Valley and lake shore. WPS reported over 50,000 outages at the height of the storm. The worst damage was associated with a macro-burst, a large downburst of straight-line winds that affected a large swath from Pelican Lake in Oneida County, southeast through Langlade and Oconto counties. Hundreds of thousands of trees were snapped or uprooted, resulting in damage to dozens of homes and

cottages. The damage path was about 60 miles long and up to 10 miles wide at times. Winds were likely near 100 mph in the hardest hit areas near Lily in northeast Langlade County and near the Langlade-Oconto County line southwest of Boot Lake.

On March 7, 2017 a strong low pressure system moved in creating a wind gust measured at 68 mph near Antigo.

Tornado / High Wind Vulnerability Assessment:

Though Langlade County is mostly a rural county, there are concentrations of population scattered throughout. Subdivisions, rural unincorporated communities, the City of Antigo and Village of White Lake can be regarded as more vulnerable because tornados pose more of a threat to human safety and property damage in more concentrated areas, see Map 8.

Mobile homes are of significant concern in assessing the hazard risks from tornados. In general, it is much easier for a tornado to damage and destroy a mobile home than a site-built home. Mobile homes comprise 6.2 percent of Langlade County's housing units. Research by NWS shows that a total of 72 percent of all tornado-related fatalities are in homes and 54 percent of those are fatalities are in mobile homes. When you are in a mobile home, you are 15 to 20 times more likely to be killed in comparison to when you are in a permanent home.

The 2023 American Community Survey estimated 756 mobile homes in Langlade County. While mobile homes are scattered throughout the county, many are in mobile home parks. Map 8 also displays the location of the mobile home parks with approximate number of units in the density calculations to create Map 8.

In addition to mobile homes, campground patrons are vulnerable to tornados because there usually is little shelter provided. Camp Susan 4-H Camp is a summer, youth camp that holds day programs for area youth. Dormitories are located on-site for extended stays. Emergency shelter is built into these facilities. There are a number of other public and private recreational campgrounds as well as Boy/Girl Scout camps around the County. Refer to Map 8.

The following is a list of things that may be affected by a tornado. Much of this list can be referenced in Part II.

- Community facilities – hospitals, schools
- Public Service – police and fire departments
- Utilities – power lines, telephone lines, radio communication
- Transportation – debris clean-up

- Residential – nursing homes, garages, trees and limbs, siding, & windows
- Businesses – signs, windows, siding, & billboards
- Agricultural – buildings, crops, & livestock

Insert Map 8 Areas of Tornado Vulnerability

Based on review of the historic events of tornados and high wind, there are no specific areas in the county that have unusual risk of occurrence. The events are a countywide concern. In mitigation planning meetings for this Plan, both the City and Village noted that tornado was their top priority hazard concern. General vulnerability by geographic area (local unit of government) is identified in Map 8.

Future Probability and Potential Dollar Losses – Tornados / High Wind:
Based on the historic data presented here (frequency of past events), between 2015 and 2024 Langlade County did not experience a tornado. However, over the last 20 years, there have been 3 tornadoes, or about 1 every 7 years. The historic pattern between 1959 and 2024 (65 years) a total of eight tornados have been reported. Over the past 10 years, tornado frequency has declined compared to the previous decade, which saw three tornado events. So, Langlade County can likely expect a tornado about once every 10 years on average. This equates to a probability of 0.14 or about a 14 percent chance in a given year. There is not enough data to indicate the probability of tornados of a specific magnitude.

High wind events are more common in Langlade County with 4 occurring in the last 10 year period from 2015 to 2024. Thus, the County can expect .4 high wind events per year. In other words, the probability to have a high wind event is 40 percent chance in a given year.

Historic data is again used to estimate potential future dollar losses due to a tornado. Estimated damages resulting from various tornados in Langlade County range from $0 to $2.5 million. On average, Langlade County might expect damage of $756,250 per tornado; however, three of the historic tornados resulted in damages of $1 million or more. High wind damages are typically spread over a wide area making it difficult to single out a specific county. Damage estimates range between $0 and $14.3 million per incident.

HAZARD ANALYSIS: WINTER STORMS / EXTREME COLD

Background on Winter Storms/Extreme Cold Hazard:
A variety of weather phenomena and conditions can occur during winter storms. For clarification, below are National Weather Service approved descriptions of winter storm elements:

Heavy snowfall – the accumulation of six or more inches of snow in a 12-hour period, or eight or more inches in a 24-hour period.

Blizzard – the occurrence of sustained wind speeds in excess of 35 miles per hour accompanied by heavy snowfall or large amounts of blowing or drifting snow.

Ice Storm – an occurrence where rain falls from warmer upper layers of the atmosphere to the colder ground, freezing upon contact with the ground and exposed objects near the ground.

Freezing drizzle/freezing rain – the effect of drizzle or rain freezing upon impact on objects that have a temperature of 32 degrees Fahrenheit or below.

Sleet – solid grains or pellets of ice formed by the freezing of raindrops or the refreezing of largely melted snowflakes. This ice does not cling to surfaces.

Wind chill – an apparent temperature that describes the combined effect of wind and low air temperatures on exposed skin.

Winter storms can vary in size and strength and include heavy snowfall, blizzards, ice storms, freezing drizzle/freezing rain, sleet, wind chill, and blowing and drifting snow conditions. Extremely cold temperatures accompanied by strong winds can result in wind chills that cause bodily injury such as frostbite and death.

True blizzards are rare in Wisconsin. They are more likely to occur in the northwestern part of the state than in south-central Wisconsin, even though heavy snowfalls are more frequent in the southeast. However, blizzard-like conditions often exist during heavy snowstorms when gusty winds cause the severe blowing and drifting of snow. Heavy snow and ice storms have been part of nearly every winter in Langlade County.

Dangerously cold conditions can be the result of the combination of cold temperatures and high winds. The combination of cold temperatures and high wind creates a perceived temperature known as "wind chill". Wind chill is the apparent temperature that describes the combined effect of wind and air temperatures on exposed skin. When wind blows across the skin, it removes the insulating layer of warm air adjacent to the skin. When all factors are the same, the faster the wind blows the greater the heat loss, which results in a colder feeling. As winds increase, heat is carried away from the body at a faster rate, driving down both the skin temperature and eventually the internal body temperature.

The National Weather Service issues wind chill advisories when wind chill readings of -20 to -34 degrees are expected. Wind chill warnings are issued when wind chill values are expected at or below -35 degrees. Extreme cold events are most likely during the months of January and February.

History of Winter Storms/Extreme Cold in Langlade County:
The NCDC has reported 34 major winter storm events for Langlade County since 2015. These storms typically contain some form of heavy snow, blowing snow, ice, freezing rain or drizzle, or glaze. Below are some highlight events over the last 10 years.

Most recently on April 4, 2024, A rapidly intensifying area of low pressure moving across Illinois to southern Lake Michigan on the afternoon of April 2 brought copious amounts of rain and heavy wet snow, damaging winds, and thunderstorms. The storm left over 100,000 people across the state without power during the height of the storm. The highest snowfall totals across Langlade County included 6.5 inches in Antigo, 6.3 inches in White Lake, and 6 inches in Summit Lake. Winds gusted to 30 to 40 mph at times Tuesday afternoon (4/2) into Wednesday morning (4/3).

On December 10, 2021, a surface low tracked northeast from the central Plains through the western Great Lakes region late Friday night (12/10) into Saturday morning (12/11), bringing 8 to 14 inches of snow to northern Wisconsin and portions of central and northeast Wisconsin. Gusty winds of 30 to 40 mph led to blowing and drifting of snow and power outages across portions of northern Wisconsin with over 14,000 customers reported without power. The highest snowfall totals across Langlade County included 10.0 inches in Summit Lake, 9.0 inches in Post Lake, 8.6 inches in White Lake, and 7.5 inches in Antigo.

On April 4, 2019 a strong low pressure system over the Plains moved across northwest Wisconsin on its way to Quebec. The system brought heavy snow, freezing rain, and gusty winds to central and northern Wisconsin. Thunderstorms and some sleet were also reported in parts of central Wisconsin. The highest measured snowfall totals in Langlade County were 12.5 inches near White Lake, and 12.0 inches in Antigo. The 12.0 inches of snow in Antigo breaks the previous snowfall record for April 11th of 4.0 inches that was set in 2007.

On February 29, 2012 a low pressure system out of Colorado produced a broad area of heavy snow over Minnesota and Wisconsin. This system deposited 18 to 20+ inches of snow between Rhinelander and Crandon, including parts of Langlade County.

Between December 11 and 12 of 2010, a strong winter storm developed as low pressure moved from Wyoming to Lake Michigan causing numerous cancellations and rescheduling. The pressure difference between an arctic high over southern Canada and the low pressure storm system generated strong winds resulting in severe blowing snow and blizzard conditions across the State. Fourteen inches of snow fell in western Langlade County with winds gusting up to 46 mph recorded near Antigo. The Governor declared a state of emergency in

all 72 counties and the state's Emergency Operations Center was activated. The State Patrol advised against traveling as it was difficult to keep the blowing and drifting snow off the highways. There were numerous slide-offs and accidents across the state. Frigid temperatures followed the storm with actual air temps dropping to -23 degrees in some areas.

From the NCDC, four extreme cold temperature events have affected Langlade County from 2015 to 2024. Most recently, on January 10, 2022, a surge of arctic air allowed temperature to fall to -15 to -20 degrees during the morning of January 10th. The combination of the bitter cold and gusty northwesterly winds created wind chills of -35 to -41 degrees.

Winter Storms/Extreme Cold Vulnerability Assessment:
Winter storms and extreme cold present serious threats to the health and safety of affected citizens and can result in significant damage to property. Heavy snow or accumulated ice can cause the structural collapse of buildings, down power lines, motor vehicle accidents, or isolate people from assistance or services. Extreme cold includes the risk of frostbite and hypothermia.

The following is a list of things that may be adversely affected by a winter storm or extreme cold. Much of these community assets can be referenced in Part II.

- Infrastructure – operation of emergency services, operation of public facilities and schools
- Utilities – down power and telephone lines
- Transportation – automobile accidents, roadway plowing, salting/sanding
- Residential – roofs
- Businesses –commerce
- Agricultural – livestock

Based on review of the historic events of winter storms and extreme cold, there are no specific areas in the county that has an unusually high risk. The risk for winter storms and extreme cold is relatively uniform and a county-wide concern. In their mitigation planning meeting, the City of Antigo identified the potential risk of power outage associated with a major winter/ice storm as a significant concern with regard to the issue of availability of adequate warming shelter space.

Future Probability and Potential Dollar Losses – Winter Storms/Extreme Cold:
Based on historical frequency, Langlade County can expect 3.4 major winter storms per year on average. In other words the probability is 1.0 or a 100% chance of multiple storms in a given year.

For extreme cold temperatures, based on historical frequency, Langlade County can expect an occurrence about every 3 years. Although, extreme cold temperatures may also accompany winter storms, so a probability of 100% chance in a given year cannot be ruled out.

Estimating potential future losses for winter storms is difficult. Damages and losses are typically widespread. Auto accidents and additional snow removal time are typical impacts of winter storms, and such claims are not aggregated or tracked for monetary damage. Winter storms do have the potential to be extremely destructive, particularly in the case of ice storms. Potential future losses per incident might range from $5,000 to $2 million based on experiences from other counties.

HAZARD ANALYSIS: DROUGHT/EXTREME HEAT

Background on Drought/Extreme Heat Hazard:
A drought is an extended period of unusually dry weather, which may be accompanied by extreme heat (temperatures which are 10 or more degrees above the normal high temperature for the period). There are basically two types of drought in Wisconsin: agricultural and hydrologic. Agricultural drought is a dry period of sufficient length and intensity that markedly reduces crop yields. Hydrologic drought is a dry period of sufficient length and intensity to affect lake and stream levels and the height of the groundwater table. These two types of drought may, but do not necessarily, occur at the same time.

Droughts, both agricultural and hydrologic, are relatively common in the state. Small droughts of shortened duration have occurred at an interval of about every ten years since the 1930's.

Extended periods of warm, humid weather can create significant risks for people, particularly the elderly who may lack air conditioning or proper insulation or ventilation in their homes. Animals are also at risk during extended periods of heat and humidity. The National Weather Service issues a Heat Advisory when the Heat Index ranges from 105 to 114 degrees daytime and remains at or above 80 degrees at night, during a 24-hour period. The heat index combines the effects of heat and humidity to better reflect the risk of warm weather to people and animals. When heat and humidity combine to reduce the amount of evaporation of sweat from the body, outdoor activity becomes dangerous even for those in good shape. The index measures the apparent temperature in the shade. People exposed to the sun would experience an even higher apparent temperature. A heat index of 105 is considered dangerous and prolonged exposure can result in heat stroke, exhaustion and cramps. People should be reminded to use extreme caution when the heat index is between 95 and 105. A

heat index of 95 occurs when the temperature is 90 degrees and the relative humidity is 50 percent.

History of Drought/Extreme Heat in Langlade County:
Much of Langlade County experienced persistent drought conditions from spring 2023 through early 2024. The drought began in May and June 2023 with below-normal rainfall, leading to Abnormally Dry (D0) and Moderate Drought (D1) classifications. Conditions worsened by August, with Severe Drought (D2) across the northwest and Extreme Drought (D3) emerging by fall. The western two-thirds of the county remained in Severe Drought, while the eastern third stayed in Moderate Drought.

Drought conditions persisted into the winter, with precipitation continuing to fall below normal. By early 2024, the northwest third of the county remained in Severe Drought (D2), while the rest was classified as either Moderate Drought (D1) or Abnormally Dry (D0). February was notably mild and dry, resulting in a low snowpack. Although a late March winter storm brought 1 to 2.5 inches of precipitation, it followed several months of well below normal rainfall.

Drought conditions returned in September 2024, when conditions turned drier than normal during the latter half of September, resulting in severe Drought (D2) conditions across the northeast half of the county, and Moderate Drought (D1) conditions over the southwest half of the county at the beginning of October. Drought that developed in September continued across northern Wisconsin into November. Above normal precipitation from October 29th through November 7th brought an end to the Severe Drought (D2) across the county.

An extended period of drought conditions is recorded going back to 2005 for Langlade County and much of Wisconsin but, eased a bit in 2011. Periods of below normal precipitation led to ongoing moisture deficits despite periodic storm events creating breaks in the dry pattern. In 2009 reports from County Agricultural Agents across northern Wisconsin indicated that crops were drought stressed and would have been in worse shape if temps had not been cooler than normal. The report from Langlade County indicated a 20 to 25 % loss of the corn and soybean crop through July of 2009. During this period, the Governor declared a state of emergency to get assistance to the state's agricultural sectors. The extended dry conditions posed serious challenges for farmers from drought stressed crops to issues providing feed for livestock.

NCDC reports indicate drought periods from September to October 2005, August through October 2007, September 2008 through April 2009, July through October 2009 and from May through June 2010. No drought events were recorded by NCDC since 2010 in Langlade County.

The drought of 1976-1977, affected an area stretching from north to south across the state. Stream flow measuring stations recorded recurrence intervals from 10 to 30 years. Numerous private and municipal wells went dry due to the lowered groundwater tables and agricultural losses during this drought were set at $624 million. Langlade County was one of 64 counties that were declared federal drought areas and deemed eligible for assistance under the Disaster Relief Act. Federal monies totaled only 19% of losses attributed to the drought.

Langlade County also experienced the drought of 1987-1988 and a dry spell in 1999.

Looking back to the 1990's, the county has experienced three notable heat events. The first of these was recorded in July 1995 when a heat wave came across Wisconsin for three days. Temperatures across the state reached highs of 100 to 109 degrees. During this heat wave, 141 lives were claimed with 70 directly related and 71 in-directly related in the state of Wisconsin. Most deaths occurred in the major urban centers.

A heat wave was recorded on July 23, 1999 when over a week of extreme temperatures and humid weather swept across the state. In some places it was so hot that concrete roads began to buckle. There was widespread heat related illness, and three deaths resulted outside Langlade County. More recently, on July 31, 2006 temperatures near 100 and dew points in the lower 70s led to heat indexes near 110 degrees. No extreme heat waves have been recorded by NCDC from 2014 to 2024.

Drought/Extreme Heat Vulnerability Assessment:
Droughts can have a dramatic effect on Langlade County. The County has 83,000 acres of farmland. With agriculture being a critical sector of the County's economy, droughts have disastrous effects. Even small droughts of limited duration can significantly reduce crop growth and yields, adversely affecting farm income. More substantial events can decimate croplands and result in total loss, hurting the local economy.

Irrigation can negatively impact the environment by drawing water that naturally goes to aquifers and surface water. Drought can exacerbate the problem when high withdrawal rates versus little precipitation deplete water bodies and aquifer supplies, thereby decreasing drinking water supplies, drying streams, and hindering aquatic and terrestrial wildlife. During severe droughts, some wells - mainly private wells - will go dry.

Droughts can trigger other natural and man-made hazards as well. They greatly increase the risk of forest fires and wildfires because of extreme dryness. In

addition, the loss of vegetation in the absence of sufficient water can result in flooding, even from average rainfall, following drought conditions.

The following is a list of things that may be adversely affected by a drought. Much of these community assets can be referenced in Part II.

- Infrastructure – municipal water supplies
- Surface water –groundwater reserves, recreation, and wildlife
- Forests
- Agricultural – crops, livestock

The areas most susceptible to drought conditions would be agricultural communities. Agricultural land is scattered throughout the south and southeast parts of the County. The primary towns include Ackley, Antigo, Neva, Norwood, Peck, Polar, Price, Rolling and Vilas, but several other towns also contain varying amounts of agricultural land.

According to the Wisconsin Emergency Management, excessive heat has become the most deadly hazard in Wisconsin in recent times. Extreme heat can happen anywhere within Langlade County affecting everyone, however the elderly and young are the ones with the highest risk of getting heat related injuries, which can lead to death. Ways to prevent injuries include wearing light-colored clothing, drink plenty of water, slow down, and do not stay in the sun for too long.

Future Probability and Potential Dollar Losses – Drought/Extreme Heat:
Based on the historic data presented here (frequency of past events), Langlade County can expect a drought every five years on average, which is a probability of 0.2 or a 20 percent chance in a given year. Significant severe drought is somewhat less common, affecting Wisconsin once about every 15 years.

Drought is another hazard lacking good loss figures at the county level. However, a look at aggregate data for the last two major droughts can give some indication of potential impact. The last two major droughts in Wisconsin resulted in losses of $9.6 million (1976-77) to $18 million (1987-88) per county on average.

Normally, northern Wisconsin is known for its cold winters, however, extreme heat waves will affect Langlade County in the future. Langlade County can expect a heat wave once about every 5 years or a 20 percent chance in a given year based on the historic data presented.

HAZARD ANALYSIS: FLOODING/DAM FAILURE

Background on Flooding/Dam Failure Hazard:
There are a variety of classifications for flooding including coastal, dam failure, flash, lake, riverine, stormwater and urban/small stream. Langlade County has the potential for all these types except coastal. The following descriptions of the types of flooding are compiled from various FEMA and other notable hazard planning sources:

Coastal – Different from other types of flooding which relate to movement of water through a watershed, coastal flooding is due to the effect of severe storm systems on tides resulting in a storm surge. Primarily known as an ocean-based event, the Great Lakes coastal areas can also be affected.

Dam Failure – More of a technology related hazard than a natural hazard, various factors can result in the failure of the structural technology that is a dam, thus causing flooding of areas downstream of the dam often similar in effect to flash flooding.

Flash – Involves a rapid rise in water level moving at high velocity with large amounts of debris which can lead to damage including tearing out of trees, undermining buildings and bridges, and scouring new channels. Dam failure, ice jams and obstruction of the waterway can also lead to flash flooding. Urban /built-up areas are increasingly subject to flash flooding due to removal of vegetation, covering of ground with impermeable surfaces and construction of drainage systems.

Lake – Prolonged wet weather patterns can induce water-level rises that threaten lakeshore areas.

Riverine – Also known as overbank flooding, this is the most common type of flooding event. The amount of flooding is a function of the size and topography of the watershed, the regional climate, soil and land use characteristics. In steep valleys, flooding is usually rapid and deep, but of short duration, while flooding in flat areas is typically slow, relatively shallow, and may last for long periods.

The cause of flooding in rivers is typically prolonged periods of rainfall from weather systems covering large areas. These systems may saturate the ground and overload the streams and reservoirs in the smaller sub-basins that drain into larger rivers. Annual spring floods are typically due to the melting of snowpack.

Stormwater – Water from a storm event that exceeds the capacity of local drainage systems, either man-made or natural, can result in flooding. Inadequate storm sewers and drainage systems are often the primary factor resulting in this type of flooding.

Urban and Small Stream – Locally heavy rainfall can lead to flooding in smaller rivers and streams. Streams through urban or built-up areas are more susceptible due to increased surface runoff and constricted stream channels.

Flooding problems in Langlade County tend to occur in the spring when melting snow adds to normal runoff and, in summer or early fall, after intense rainfalls. Flooding occurs in the spring due to snowmelt and frozen soil. This build up continues until the river or stream overflows its banks, for as long as a week or two and then slowly recedes inch by inch. The timing and location of this type of flooding is fairly predictable and allows ample time for evacuation of people and protection of property.

Flooding is a significant hazard in Langlade County, particularly because the Springbrook runs right through the middle of the county's principle city. As described in Part II, there are approximately 225 rivers and streams in Langlade County within 14 main watersheds and 3 major river basins.

Dam Name	Stream Name	Dam Size	Hazard Rating	Last EAP Date	Ownership
Upper Trappe River Flowage	Trappe River	Large	Low	2022	State Agency
Phlox	RED RIVER	Large	Significant	2016	Town
Gleason	SKUNK CREEK	Large	Low	2009	State Agency
Spider Creek	Spider Creek	Large	Low	2022	State Agency
Upper Post Lake	Wolf River	Large	Low	2021	Private
Skinner	Spring Brook	Large	High	2020	County
Skunk Creek	Skunk Creek	Large	Low		County
Oxbo Flowage	OXBO CREEK	Large	Low	2022	State Agency
Mitchell	RED RIVER	Unknown	Low		Private
Gardner	Wolf River	Unknown	Low		Missing
Lower Post Lake	Wolf River	Unknown	Low		Missing
Glen Acre Springs	Pollock Creek	Unknown	Low		Private
Kelly	Mayking Creek	Unknown	Low		Missing
Langlade County Flowage	TR TRAPPE RIVER	Large	Low	2022	State Agency
Parrish	Prairie River	Unknown	Low		Missing
Crystal Springs Fish Hatchery	TR EAST BRANCH EAU CLAIRE	Unknown	Low		State Agency
Middle Trappe River Flowage	Trappe River	Large	Low	2022	State Agency
Upper Wicke	Skunk Creek	Large	Low	2009	State Agency
Pot Flowage	TR TRAPPE RIVER	Large	Low	2022	State Agency
Heineman	West Branch Eau Claire River	Unknown	Low		Missing
Langlade Co. Forest Flowage 1	East Branch Eau Claire River	Large	Low		State Agency
Lower Tower	Unnamed	Large	Low	2009	State Agency
Crystal Springs Fish Hatchery	Unnamed	Small	Significant		State Agency
Faust	Spring Brook	Large	Low	2020	City
Pickerel Lake	Pickerel Creek	Small	Low		Town
White Lake	WHITE LAKE OUTLET	Small	Low		Village
Langlade Co.Forest Flowage 3	East Branch Eau Claire River	Small	Low		State Agency
Deepwoods Lake	EAST BRANCH EAU CLAIRE	Small	Low		Town
Sheldons	EAST BRANCH LILY	Small	Low		Private
Fish	POLLOCK CREEK	Small	Low		Private
McGee Lake	OUTLET OF MCGEE LAKE	Small	Low		State Agency

Langlade Co.Forest Flowage 2	E. BR. EAU CLAIRE RIVER	Small	Low		State Agency
Second Avenue	Spring Brook	Large	Low		City
Stevens Creek	STEVENS CREEK	Small	Low		Private
Lower Trappe River Flowage	Trappe River	Small	Low	2022	State Agency
Bay Lakes Council Boy Scouts	Wolf River	Small	Low		Private
Deerbrook	East Branch Eau Claire River	Unknown	Low		Missing
Deerbrook	East Branch Eau Claire River	Unknown	Low		Missing
Halama	RABE CREEK	Small	Low		Private
Silver Moon Springs	Elton Creek	Small	Low		Private
Upper Antigo	Spring Brook	Small	Low		City
Ormsby	West Branch Eau Claire River	Large	Low	2003	Private
Lower Antigo	Spring Brook	Small	Low		City
Greater Bass Lake	OUTLET	Unknown	Low		Private
Hanke	LILY	Unknown	Low		Private
Mikkelson	Drew Creek	Unknown	Low		Private
Making	Mayking Creek	Unknown	Low		Private
Langlade Fish Hatchery	DALTON CREEK	Unknown	Low		State Agency
North Grade	Little Oxbo Creek	Unknown	Low		State Agency
Neva	East Branch Eau Claire River	Unknown	Low		Town
Sawyer Lake	Ninemile Creek	Unknown	Low		Missing
Maskenosha (Enterprise)	ENTERPRISE CREEK	Unknown	Low		Missing
County Line	TR-TRAPPE RIVER	Unknown	Low		State Agency
Upper Winky Flowage		Unknown	Low		State Agency
East Oxbow	Oxbo Creek	Unknown	Low		State Agency
Black Oak Lake		Unknown	Low		Town
Tower Seep	Unnamed	Unknown	Low		State Agency
Lower Wicke	TR-SKUNK CREEK	Unknown	Low		State Agency
Oxbow #3		Unknown	Low		State Agency
Winky		Unknown	Low		State Agency
Unknown		Unknown	Low		State Agency
Lilly	Wolf River	Unknown	Low		Missing

Source: WisDNR on-line database & NCWRPC, 2025

These floodplains are narrow along tributaries and lakes, but extensive throughout the county. Floodplains are described in Part II and shown on Map 4. The North Central Wisconsin Regional Planning Commission digitized these floodplains from FEMA Flood Insurance Rate Maps (FIRMs). While not official, these digital floodplains are useful planning tools.

There are 62 dams in Langlade County (see Map 4/Table 11), but most do not pose a significant hazard if they were to fail. According to the DNR, Langlade County has 17 large dams, 16 small dams and the other 29 were unknown. The Wisconsin DNR regulates all dams on waterways to some degree; however, the small dams are not stringently regulated for safety purposes. Only one dam, Skinner, has a high hazard rating which indicates that a failure would most likely result in loss of life and significant property damage.

A dam can fail for a number of reasons such as excessive rainfall or melting snow. It can also be the result of poor construction or maintenance, flood damage, weakening caused by burrowing animals or vegetation, surface erosion, vandalism or a combination of these factors. Dam failures can happen with little warning resulting in the loss of life and significant property damage in an extensive area downstream of the dam.

History of Flooding/Dam Failure in Langlade County:
Flooding was a principal cause of damage in four of ten Presidential Disaster Declaration requests in Langlade County since 1971.

The most recent event occurred on July 26, 2020, when thunderstorms dumped 4 to 8 inches of rain over Langlade County during the morning hours. This caused several roads to be closed due to flash flooding as well as culverts becoming full or washed out across much of Langlade County. Several roads and culverts were damaged as a result of the flooding with several towns declaring disasters. An estimated $318,500 worth of damage was reported from this event.

Flooding in Antigo, 2004

One of the worst flood events experienced by Langlade County was the flooding of 2004. News reports identified this flooding in the City of Antigo as the worst flooding in four decades. Rapid snowmelt and a heavy weekend rainfall caused the Springbrook (Skinner) Dam to overflow. The Governor declared a state of emergency in Langlade County and sent in the

National Guard. About 99 homes and 39 businesses were evacuated and schools were closed. Parts of US Highway 45 were flooded and closed. The local street network was extensively damaged including several bridges. Overall damages exceeded $1 million, however; a Presidential Disaster Declaration was not awarded.

In 1971, Langlade was one of 24 counties included in a request for Presidential declaration for flooding. That request was denied. Then in 1973, significant flooding affected a total of 35 counties, including Langlade, and a request for Presidential Disaster Declaration was awarded. One person drowned. Total private and public damage losses were set at $24 million across the 35 counties. Again in 2002 a combination of severe storms and flooding included Langlade and 19 other counties in a Presidential Disaster Declaration.

In addition to the 2004 flood, NCDC data shows flood events in Langlade County in 1999 and 2000. In 1999, urban and small stream flooding affected Antigo on July 8 and again on July 16. Over topping of Spring Brook Dam was a major factor. Streets were flooded and homes experienced basement flooding. In July of 2000, Antigo had significant flooding and Deerbrook experienced urban and small stream flooding. Surrounding rural areas experienced some crop damage.

Additional information from the County shows that flood damage has been recorded in Antigo in 1961, 1965, 1967 and 1988. These events were all a result of rapid snowmelt and heavy rain exceeding Springbrook Dam's storage capacity and overtopping.

Flooding/Dam Failure Vulnerability Assessment:
Flood events in the county have caused substantial property and infrastructure damage in the past and have the potential to cause future damage, since a significant number of structures still exist in the floodplain. Looking at past events, the following have been significantly impacted by flooding:

- Infrastructure – flooded public facilities, and schools
- Utilities - down electric lines/poles/transformers, telephone lines, and radio communication
- Roadways – washouts, inundated roadways, debris clean-up
- Residential structures – flooded basements, damaged septic systems
- Businesses – loss of commerce
- Agriculture - inundated cropland

To assess the vulnerability of Langlade County to flooding hazards, basic inventory data in Part II must be analyzed. For this purpose, consideration should be given to structures (specifically critical facilities), infrastructure, and cropland.

One of the first reports to reference in assessing vulnerability to structures during flooding is the Wisconsin Repetitive Loss Report. This Report provides the status of repetitive loss structures by community. FEMA, through the Federal Insurance Administration, describes a repetitive loss structure as "when more than one flood insurance claim of at least $1,000 is made within a ten-year period." The information is used as a floodplain management tool and to supplement information provided by communities for flood mitigation grants administered by WEM. According to the report, there are no repetitive loss structures in Langlade County. Since no structures are listed in the Repetitive Loss Report, structures within floodplains were analyzed. The floodplain boundaries within Langlade County are shown on Map 4.

Insert Map 9 Flood Vulnerability

Table 12 shows the number of structures in each municipality identified as "vulnerable to flooding" according to proximity to floodplains. There were a total of 578 structures identified in the designated floodplain boundaries, see Map 12.

Methodology – Structures within Floodplains:

1. *NCWRPC digitized (electronically traced) the individual FEMA FIRM floodplain maps into a GIS coverage for the County.*
2. *A building point cover was digitized from current aerial photos.*
3. *The floodplain coverage was then combined with the building point coverage and County parcel data to identify those parcels within the floodplain boundary.*
4. *Total parcels within the floodplain were then tabulated by municipality.*
5. *Land records data for those parcels was used to tabulate the total value for the identified vulnerable properties.*

Table 12
Approximate Values of Structures in Floodplains in Langlade County

Municipality	Number Parcels	Improved Value	Average Improved Value
Ackley town	25	$2,619,461	$104,778.43
Ainsworth town	72	$6,587,077	$91,487.17
Antigo town	39	$4,909,591	$125,886.94
Elcho town	91	$9,257,128	$101,726.69
Evergreen town	9	$926,276	$102,919.58
Langlade town	31	$3,021,368	$97,463.48
Neva town	17	$1,996,641	$117,449.45
Norwood town	25	$3,075,949	$123,037.96
Parrish town	1	$93,115	$93,114.77
Peck town	12	$1,395,095	$116,257.92
Polar town	4	$521,694	$130,423.57
Price town	0	$0	
Rolling town	5	$686,535	$137,306.92
Summit town	3	$248,976	$82,991.89
Upham town	3	$540,238	$180,079.18
Vilas town	3	$314,285	$104,761.81
Wolf River town	35	$3,447,564	$98,501.83
White Lake Village	21	$2,142,704	$102,033.54
Antigo city	182	$19,011,457	$104,458.56
Langlade County	578	$65,347,091	$113,057.25

Source: NCWRPC & Langlade County Tax Pacels

In addition to structural damage from flooding, there may also be significant damages to public roadways, particularly to roadway surfaces, culverts and bridges. Floods may inundate roadways in the county for varying periods. Such interruptions in the county transportation network may cause travel delays through detours.

The agriculture industry is one sector that faces substantial losses during floods. Cool, rainy/wet, cloudy weather in the spring and summer can create a general condition of high water and saturated soils throughout the county.

Flood conditions can leave farmers with these economic obstacles:

- Delayed planting (reduced growing season)
- Seed and agricultural chemicals washing out of fields
- Rotting crops due to excess moisture
- Areas where planted crops are left in the fields due to excessive moisture
- Crops not reaching full maturity or stunted growth
- Requirements by farmers to expend higher amounts of money on additional soil amendments
- Lower quality (nutritional value) of harvestable crops as a feed source.

Reductions in yields can result in loss of revenues from cash crops and increased expenses for purchasing needed livestock feed from outside sources. Additionally, reductions in crop quality result in lower prices received for cash crops and increased amounts spent for nutritional supplements to animal feed, which often need to be added even in much of the purchased feed.

Economic losses to farmers can generate a ripple effect to the local community as well. Reduction in farm income curtails farmers' ability to purchase new equipment and make other improvements. Farmers have less money to spend at farm dealers, farm supplies, building/hardware suppliers, fertilizer, feed and seed dealers, and other agribusiness and retail establishments. The State will have reduced tax revenues. Farmers increase their debt load and have less money to save and invest.

The forest products industry is affected similarly to agriculture. Forestlands become too wet for logging operations and many water logged tree plantations suffer high mortality rates. Mill inventories become very low, resulting in increased prices for consumers.

Considering both the agricultural and forestry sectors, virtually the entire county faces significant risk due to flooding, however; the areas most considered to have a higher risk for impact from flooding include those communities with structures in floodplains as shown in Map 9.

Future Probability and Potential Dollar Losses – Flooding/Dam Failure:
The NCDC data shows that Langlade County had two floods 2015-2024, however, this data does not include the 1973, 2002, and 2004 flooding, which received Presidential Disaster Declaration, nor the 1961, 1965, 1967, 1971 or 1988 flooding. Based on this combination of historic data (frequency of past events), Langlade County can expect a significant flood event about every five years on average. This equates to a probability of 0.20, or about a 20 percent chance in a given year.

Historic data is again used to estimate potential future dollar losses from flooding. Based on the past flood events for which we have loss figures, Langlade County can anticipate property and crop losses of approximately $1 million, on average, between the public and private sector for each significant flood occurrence. Over the next ten-year period, flood losses in Langlade County could exceed $2.3 million.

Potential losses for structures by jurisdiction are reflected in Table 12. While structures outside mapped floodplains may also be lost or damaged in a flood, structures within flood plains represent the greatest risk for flood damages.

HAZARD ANALYSIS: SEVERE THUNDERSTORMS/LIGHTNING/HAIL

Background on Severe Thunderstorm Hazard:
The National Weather Service definition of a *severe thunderstorm* is a thunderstorm event that produces any of the following: downbursts with winds of 58 miles per hour or greater (often with gusts of 74 miles per hour or greater), hail 1 inch in diameter or greater, or a tornado. Hail and lightning will be addressed in this section; however, tornadoes are discussed as a separate hazard due to their potential level of severity.

Lightning results from discharge of energy between positive and negative areas separated by rising and falling air within a thunderstorm. This discharge heats the surrounding air to 50,000 degrees. Hail results as the warm rising air cools, forming ice crystals which are held by the updrafts until accumulating enough weight to fall. The hail size depends on strength of the updrafts keeping it up.

Thunderstorm frequency is measured in terms of incidence of thunderstorm days or days on which thunderstorms are observed. Wisconsin averages between 30 and 50 thunderstorm days per year depending on location. A given county may experience ten or more thunderstorm days per year. The southwestern area of the state normally has more thunderstorms than the rest of the state.

History of Severe Thunderstorms in Langlade County:
The NCDC has reported 45 severe storm events for Langlade County since 2015. These storms typically contain some form of heavy rain and strong winds and often lightning or hail. Back in 2002, a combination of severe storms and flooding resulted in a Presidential Disaster Declaration for Langlade and 19 other counties.

The latest severe storm happened on July 30, 2024, when thunderstorms developed along an outflow boundary during the late afternoon and early evening hours on Tuesday (7/30). The strongest storms produced large hail around a quarter size near Parrish.

On July 19, 2019, a line of severe thunderstorms moved across much of central, north central, and eastern Wisconsin. Winds were likely near 100 mph in the hardest hit areas near Lily in northeast Langlade County and near the Langlade-Oconto County line southwest of Boot Lake. Thunderstorm winds snapped and uprooted tens of thousands of trees across northern Langlade County. One hundred thirty-five structures in the county sustained damage. The hardest hit area was near Lily. Over $350,000 in property damage was reported.

In June, August, September, and October of 2018, storms downed trees and power lines in White Lake, Phlox, and Antigo areas.

On May of 2012, thunderstorms developed in unstable air as cold fronts passed through northern Wisconsin. The storms produced heavy rains, golf balls sized hail (5-20-12) and numerous trees and power lines blown down around Antigo, destroyed a bandstand in Neva, and near Summit Lake (5-24-12) downed trees and produced a funnel cloud in Marathon County.

On July 30, 2011, a bow echo squall line passed through northeast Wisconsin blowing down trees and knocking out power to 36,000 customers. Downed trees damaged the Bass Lake Country Club and Golf Course. Strong winds lifted a paddle boat out of Summit Lake and depositing up a hill. On June 10, 2005 a thunderstorm knocked a tree onto a house in Pickerel. On July 31, 2003, thunderstorm downed trees and power lines in eastern Langlade County.

Severe Thunderstorm Vulnerability Assessment:
The National Weather Service can forecast and track a line of thunderstorms that may be likely to produce severe high winds, hail, and lightening, but where these related hazards strike and how powerful they might be remains unpredictable. The distribution of thunderstorms and related hazard events have been widely scattered throughout the County.

Many thunderstorm events (without tornadoes) have caused substantial property and infrastructure damage, and have the potential to cause future damage. In order to assess the vulnerability of the Langlade County area to thunderstorms and related storm hazards, review of the past events indicate significant impacts to:

- Infrastructure – hospitals, schools, street signs, police and fire departments
- Utilities – electric lines/poles/transformers, telephone lines, radio communication
- Transportation – debris clean-up
- Residential – mobile homes, garages, trees and limbs, siding, & windows

- Businesses – signs, windows, siding, & billboards
- Agricultural – buildings, crops, & livestock
- Vehicles – campers, boats, windshields, body, & paint

Based on review of the historic patterns of thunderstorms associated with high wind, hail, or lightning, there are no specific municipalities that have unusual risks. The events are relatively uniform and a countywide concern.

Future Probability and Potential Dollar Losses – Severe Thunderstorms:
Based on historical frequency, Langlade County can expect 4.5 thunderstorm events per year on average. In other words, the probability is 1.0 or a 100% chance of multiple storms in a given year. The probability of a thunderstorm with damaging hail (0.75 inch diameter or greater) in Langlade County is also at 1.0 or 100% chance with about 1.3 incidents in a given year. There is not enough date available regarding lightning events to indicate probability.

According to the NCDC, historic thunderstorm events with associated high wind and reported damages ranged from $1,000 to $350,000 in property damage per incident, and $5,000 in reported crop damage. Historic thunderstorm events with associated hail that reported property damage averaged $1,000. Historic thunderstorm events with associated lightening that reported property damage averaged $25,000. Losses in Langlade County associated with severe thunderstorms could approach $1,200,000 over the next ten-year period.

HAZARD ANALYSIS: FOREST FIRES/WILDFIRES

Background on Forest Fires/ Wildfires Hazard:
A forest fire is an uncontrolled fire occurring in a forest or in woodlands outside the limits of incorporated villages or cities. A wildfire is any instance of uncontrolled burning in brush, marshes, grasslands or field lands. For the purpose of this analysis, both of these kinds of fires are being considered together.

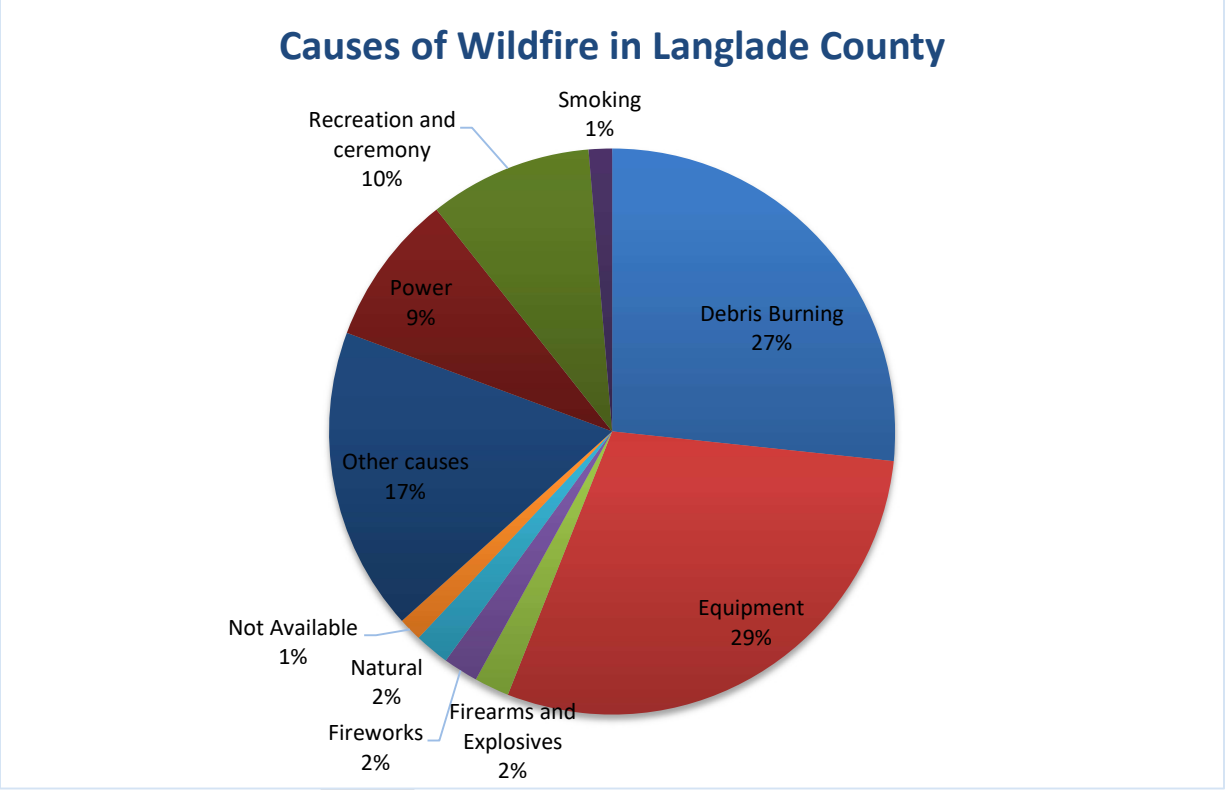
Forest fires and wildfires can occur at any time whenever the ground is not completely snow covered. The season length and peak months may vary appreciably from year to year. Land use, vegetation, amount of combustible materials present and weather conditions such as wind, low humidity and lack of precipitation are the chief factors for fire season length.

History of Forest Fires/Wildfires in Langlade County:
The Wisconsin DNR maintains a database of forest fires for Langlade County. From 2015 to 2024 there have been about 15 fires annually. However, there is significant annual variability ranging from 5 fires in 2014 and 2016 to 21 in 2018 and 2022. The

typical fire in Langlade County burns around 1.7 acres. The largest recorded wildfire burned 65 acres in 2021.

Despite being in a period of drought between 2023-2024, it does not appear to have had an influence on wildfire activity in the County.

Insert Map 10 Wildfire Vulnerability



The chart above breaks down the causes of wildfire within Langlade County as classified by the Wisconsin DNR. The principle cause of wildfire in the County which resulted in 29% of wildfires within the County was caused by equipment which includes vehicle, motor and other machinery related causes except railroad. Debris burning came in second with 27%. Other causes were 17% which includes causes such as arson or railroads. Recreation and ceremony which includes fireworks, causes 10% of wildfires.

Forest Fires/Wildfires Vulnerability Assessment:
Langlade County has 439,243 acres of forestland scattered throughout the County, or 77 percent of the land area. The potential for property damage from fire increases each year as more recreational and retirement homes are developed on wooded land.

The trend toward introducing more human development into fire prone areas has brought about the term wildland urban interface or WUI. The WUI identifies areas where structures and human developments meet or intermingle with undeveloped wildlands. It is within these areas where wildfire poses the greatest risk to human lives and property.

Rural buildings may be more vulnerable because of lack of access. Access to buildings off main roads is often via long and narrow driveways with minimal vertical clearance and no turn around areas large enough for emergency vehicles making it difficult to combat fires. These buildings also may not have much of a defensible space because of little area between the structures themselves and highly flammable vegetation.

Campgrounds are also a concern because campfires cause 7 percent of fires. Langlade County has 4 public (plus Camp Susan) and 13 private campgrounds with a total of more than 550 campsites (see Map 8).

Some towns may be identified as more vulnerable than others based on the DNR data. Six of the 19 total municipalities in the County had 10 or more_wildfires between 2015 and 2024: Ainsworth (15), Elcho (25), Norwood (11), Polar (12), Upham (11), and Wolf River (22). Elcho and Wolf River standout with 25 and 22, respectively.

Future Probability and Potential Dollar Losses – Forest Fires/Wildfires:
Forest and wildfires are relatively common occurrences in Langlade County. Over the period analyzed here, there has been an average of 15 fires per year in the County. In other words, the probability is 1.0 or 100% chance of wildfire each year.

Because of the relatively small impact of typical individual fires in the County, loss data is not tracked. This makes it difficult to develop an estimate of potential future dollar losses. However, with 15 fires per year, the County should expect some fires to "get out of hand" with the potential to exceed the $1.4 million in damages of the Cottonville Fire that occurred in Southern Wisconsin

Cottonville Fire, 2005

HAZARD ANALYSIS: EPIDEMIC / PANDEMIC

Background On Epidemic / Pandemic Hazard

Communicable diseases, sometimes called infectious diseases, are illnesses caused by organisms such as bacteria, viruses, fungi and parasites. Sometimes the illness is not due to the organism itself, but rather a toxin that the organism produces after it has been introduced into a human host. Communicable diseases may be transmitted (spread) either by: one infected person to another, from an animal to a human, or from some inanimate object (doorknobs, table tops, etc.) to an individual. Some communicable diseases can be spread in more than one way.

Pandemic Influenza is a global disease outbreak. An outbreak occurs when a new influenza virus emerges for which people have little or no immunity, and for which there is no vaccine. The disease spreads easily from person to person, causes serious illness or death, and can sweep across the county and around the world in a very short time frame.

History of Epidemic / Pandemic in Langlade County

COVID-19 is a disease caused by a new virus strain that began spreading in people in December 2019. On March 11, 2020, the COVID-19 outbreak was characterized as a pandemic by the World Health Organization. Then on April 4, 2020, a Presidential Disaster Declaration was signed for the pandemic in the United States. Over the next three years, the pandemic was dynamic and

constantly changing with cases surging in waves coinciding with new variants of the virus. However, On May 11, 2023, the federal government ended the Public Health Emergency in the U.S. as much of the population had returned to life as normal. A low level of COVID-19 virus activity remained in the community, and there were still concerns about surges or new variants. As of the end of the public health emergency, the U.S. Center for Disease Control has reported that there have been approximately 103,910,034 cases of COVID-19 in the United States alone with a death toll now exceeding 1 million at 1,135,343.

Virus pandemics are naturally occurring events. Global outbreaks have occurred four times in the last century, in 1918, 1957, 1968 and 2009. The greatest loss occurred in 1918 when the Spanish Flu (H1N1) killed an estimated 20-40 million people worldwide between 1918 and 1919. The mortality rate in the United States was 550,000. The Asian Flu (H2N2) occurred from 1957 to 1958 with a mortality rate of 70,000 in the United States. The Hong Kong Flu (H3N2) occurred from 1968 to 1969 with a mortality rate of 34,000 in the United States.

2009 saw the rise of a new variant of the H1N1 virus, popularly referred to as the Swine Flu. Lab confirmed deaths from Swine Flu total about 14,000 worldwide with 3,400 deaths in the United States. However, most experts now agree that the actual death toll attributable to the 2009 Swine Flu is 10 to 15 times the confirmed number. Spread of H1N1 flu occurs in the same way that seasonal flu spreads. Flu viruses are spread mainly from person to person through close range coughing or sneezing by people with influenza. As a result of preparation and mitigation strategies such as vaccinations and public education, the threat of a full blown H1N1 pandemic in the U.S. has receded. The possibility for a pandemic, though, still exists.

A previous pandemic flu threat that still looms is the avian flu. Birds can contract avian flu and pass it along to humans. Some strains of the avian flu are more virulent than others. Public health experts continue to be alert to the risk of a possible re-emergence of an epidemic of avian among people primarily in Asia in 2003. People who had been very close contact with infected birds (for example, people who lived with chickens in their houses) contracted a virulent form of avian flu and there was a high death rate from this disease. Thus far, the avian flu virus has not mutated and has not demonstrated easy transmission from person to person. However, were the virus to mutate in a highly virulent form and become easily transmissible from person to person, there would be significant potential for a pandemic that could disrupt all aspects of society and severely affect the economy.

The Langlade County Health Department tracks communicable disease through a channel of communications at the local, state and regional levels between public health, private physicians, hospitals, and labs. This communication

channel allows for prompt investigation of possible outbreaks and unusual situations, and to implement control measures to minimize further transmission of disease to others.

In Langlade County, there have been 6,790 total cases of COVID -19 resulting in 109 deaths as of the end of the public health emergency in May of 2023. For Wisconsin, total cases reached 2,014,524 with 16,485 deaths. By comparison, there were 13,511 confirmed or probable cases of the 2009 H1N1 from April 2009 to March 2010 with 1,320 hospitalized and 55 deaths for Wisconsin.

The next epidemic / pandemic situation may not be a "flu" but could be a developing "super bug" such as antibiotic resistant MRSA or some as yet unknown bacteria or virus.

Epidemic / Pandemic Vulnerability Assessment

Most communicable diseases are dealt with through traditional health department activities. The complexity and magnitude of a Pandemic Influenza outbreak would tax the normal capabilities of the medical service community and the Emergency Management Department would assist in all activities surrounding an event of this severity.

The possibility of a communicable disease epidemic or pandemic outbreak is equal across the County, but the ability to predict where and when an event will occur is very difficult. As COVID-19 has demonstrated, even an isolated little county in central Wisconsin cannot avoid the impacts of a global pandemic. Although Langlade County's overall case rate was slightly higher than the state average (35,385 per 100,000 versus 34,599), the COVID death rate in the County was double the state rate (568 per 100,000 versus 283).

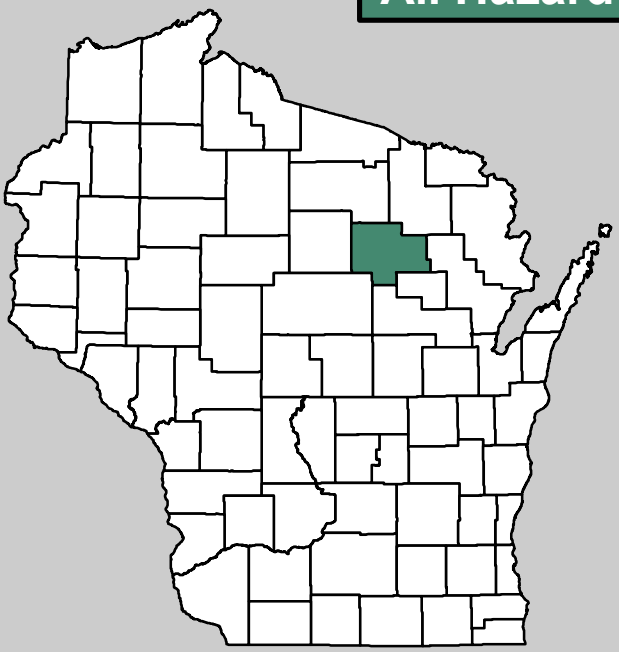
Future Probability and Potential Dollar Losses – Epidemic / Pandemic

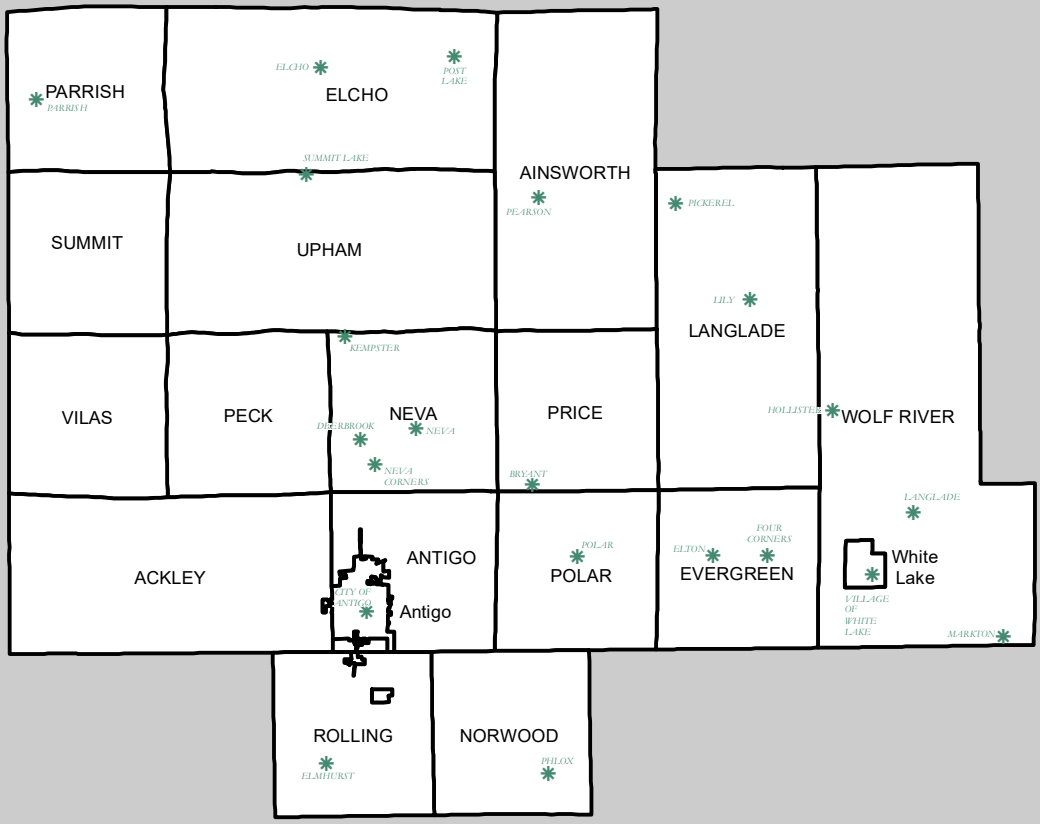
Post COVID-19 the future probability of a communicable disease / pandemic outbreak is difficult to determine. The probability would appear low, but the threat exists, and the impact of a widespread event is very severe as displayed by the effects of COVID-19. Significant economic disruption can occur due to loss of employee work time and costs of treating or preventing spread of the pathogen.

The probability of an outbreak might be calculated across a hundred year period. Based on the four major events identified here, the likelihood of an event occurring in any given year would be 4%.

Langlade County, Wisconsin — Location — DRAFT — Map 1

All Hazard Mitigation Plan





0 1.75 3.5 7 10.5 14 Miles

Source: NCWRPC, Langlade County, WIDNR

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and sata used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

Prepared By:
North Central Wisconsin Regional Planning Commission
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 staff@ncwrpc.org - www.ncwrpc.org

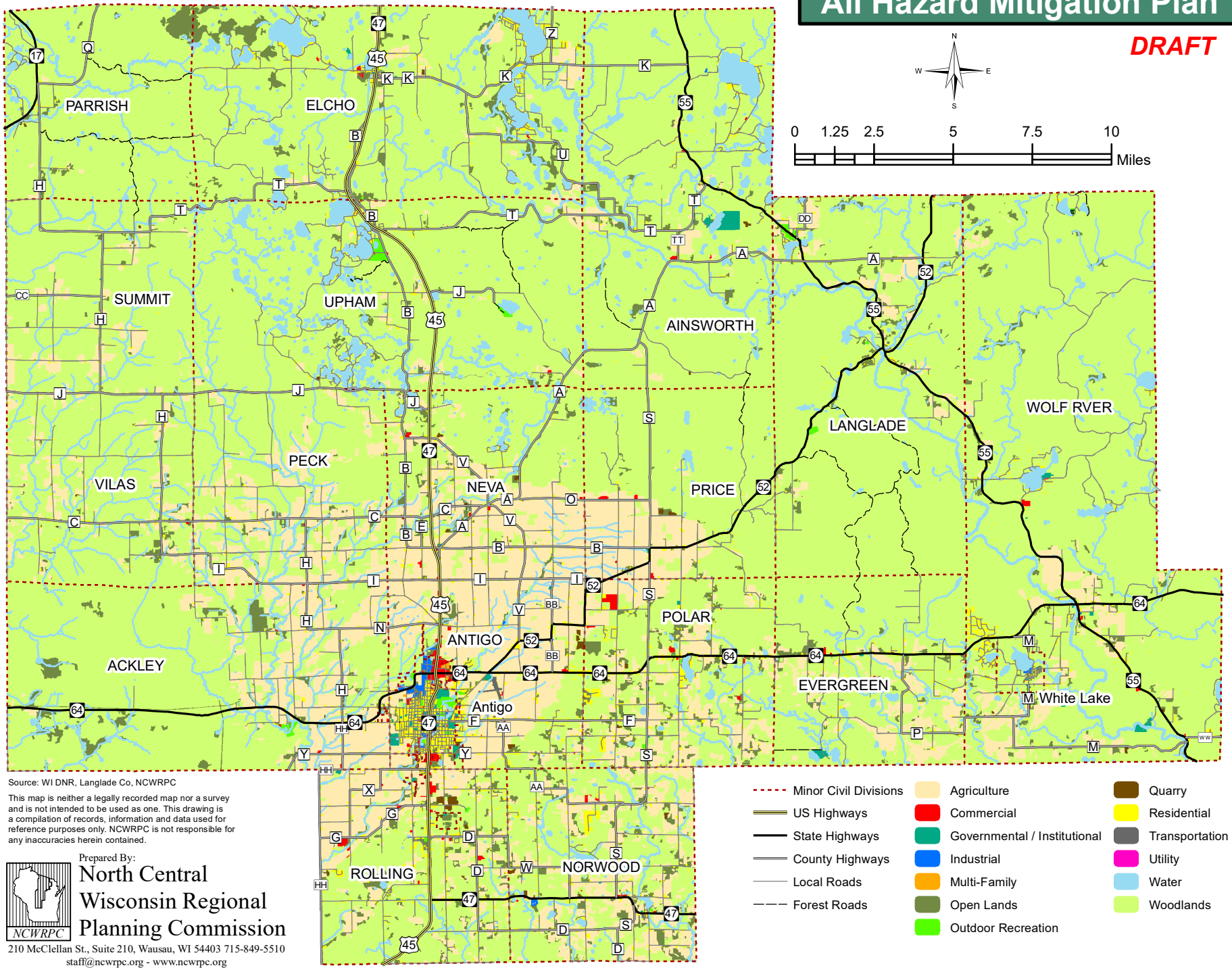
All Hazard Mitigation Plan

DRAFT

Langlade County, Wisconsin

Generalized Land Use Map

Map 2



Source: WI DNR, Langlade Co, NCWRPC

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

- Minor Civil Divisions
- US Highways
- State Highways
- County Highways
- Local Roads
- Forest Roads
- Agriculture
- Commercial
- Governmental / Institutional
- Industrial
- Multi-Family
- Open Lands
- Outdoor Recreation
- Quarry
- Residential
- Transportation
- Utility
- Water
- Woodlands

Prepared By:
North Central Wisconsin Regional Planning Commission
210 McClellan St., Suite 210, Wausau, WI 54403 715-849-5510
staff@ncwrpc.org - www.ncwrpc.org

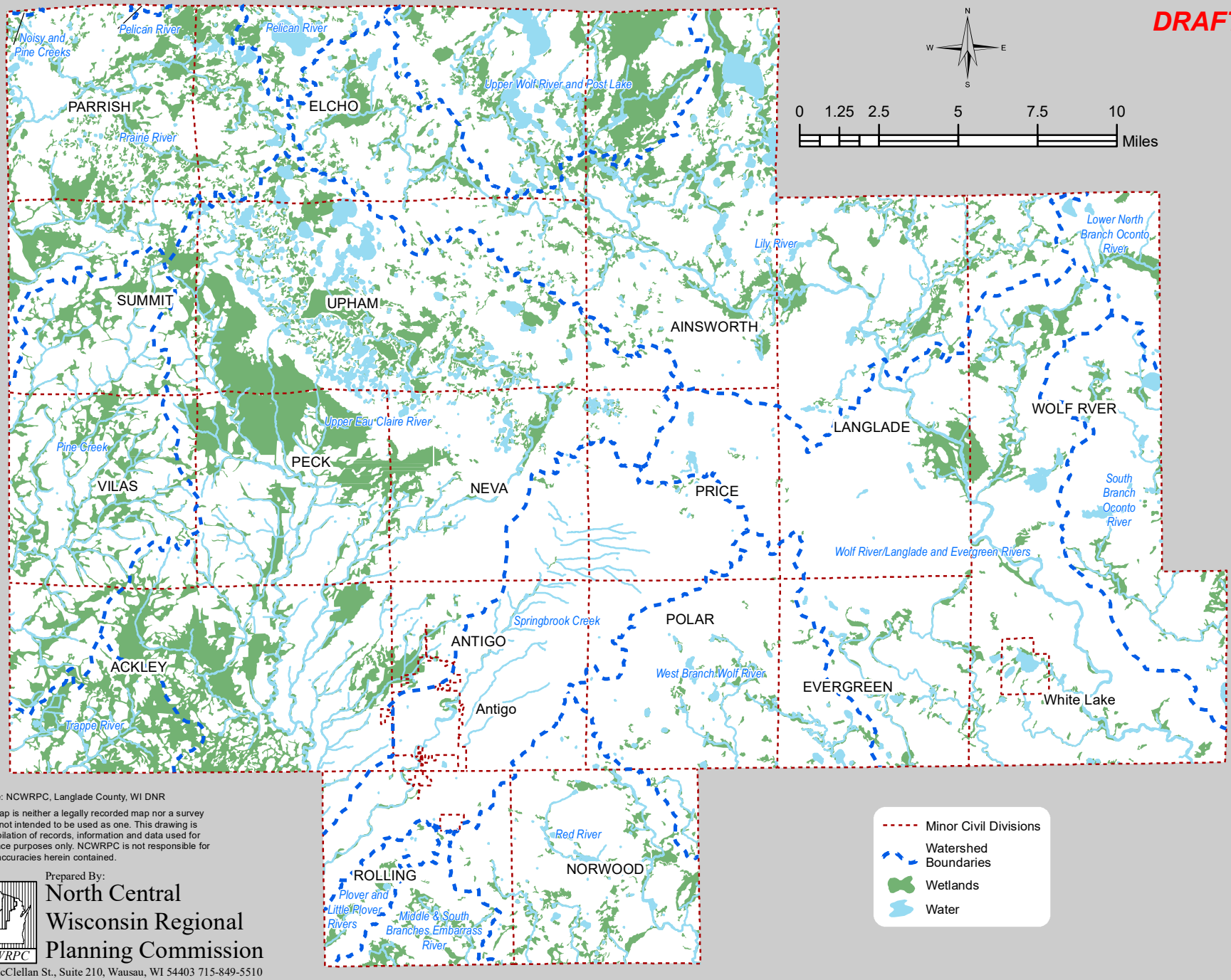
All Hazard Mitigation Plan

DRAFT

Langlade County, Wisconsin

Surface Water & Watersheds

Map 3



Source: NCWRPC, Langlade County, WI DNR

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

Prepared By:

North Central Wisconsin Regional Planning Commission

NCWRPC

210 McClellan St., Suite 210, Wausau, WI 54403 715-849-5510

staff@ncwrpc.org - www.ncwrpc.org

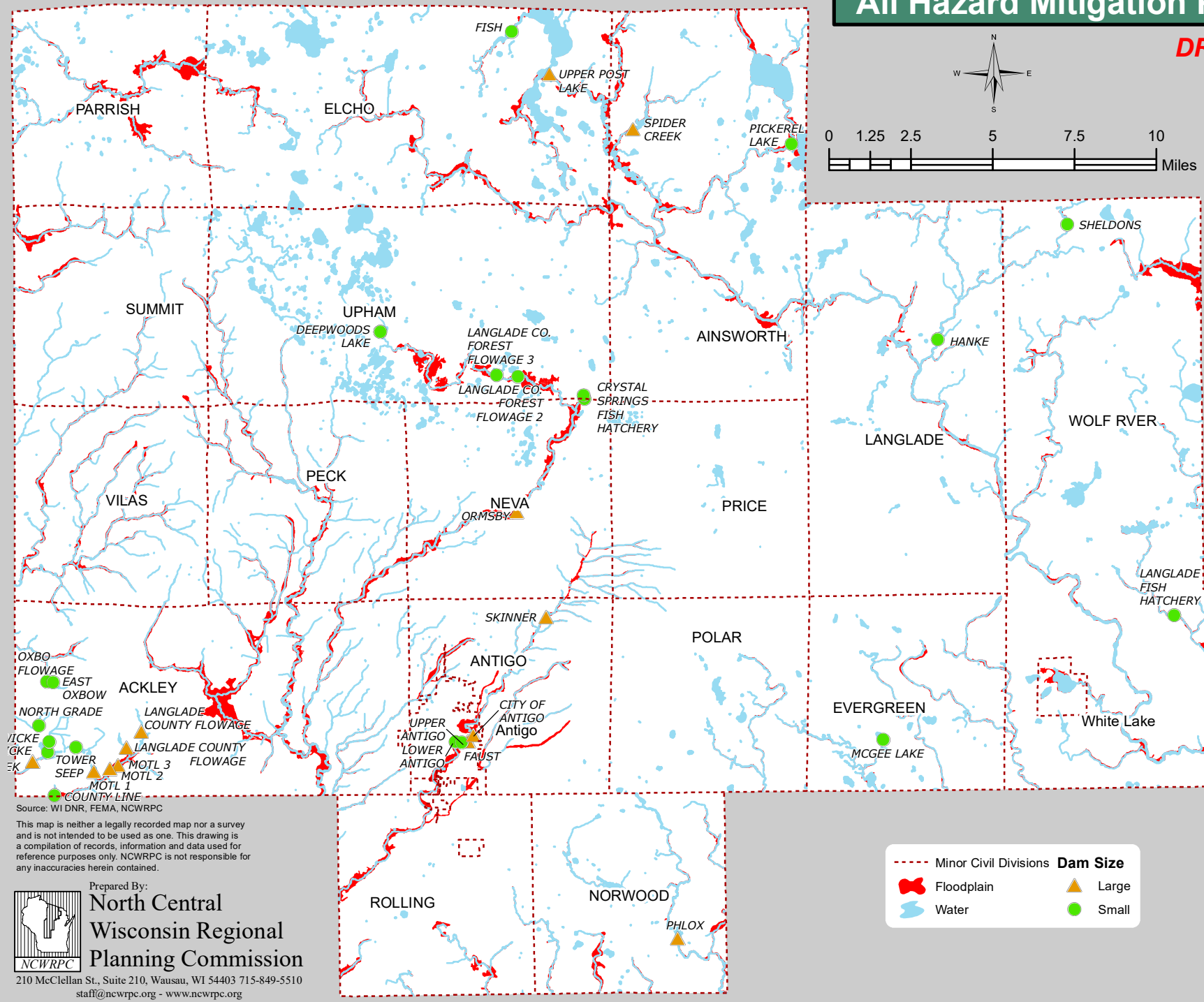
All Hazard Mitigation Plan

DRAFT

Langlade County, Wisconsin

Floodplains & Dams

Map 4

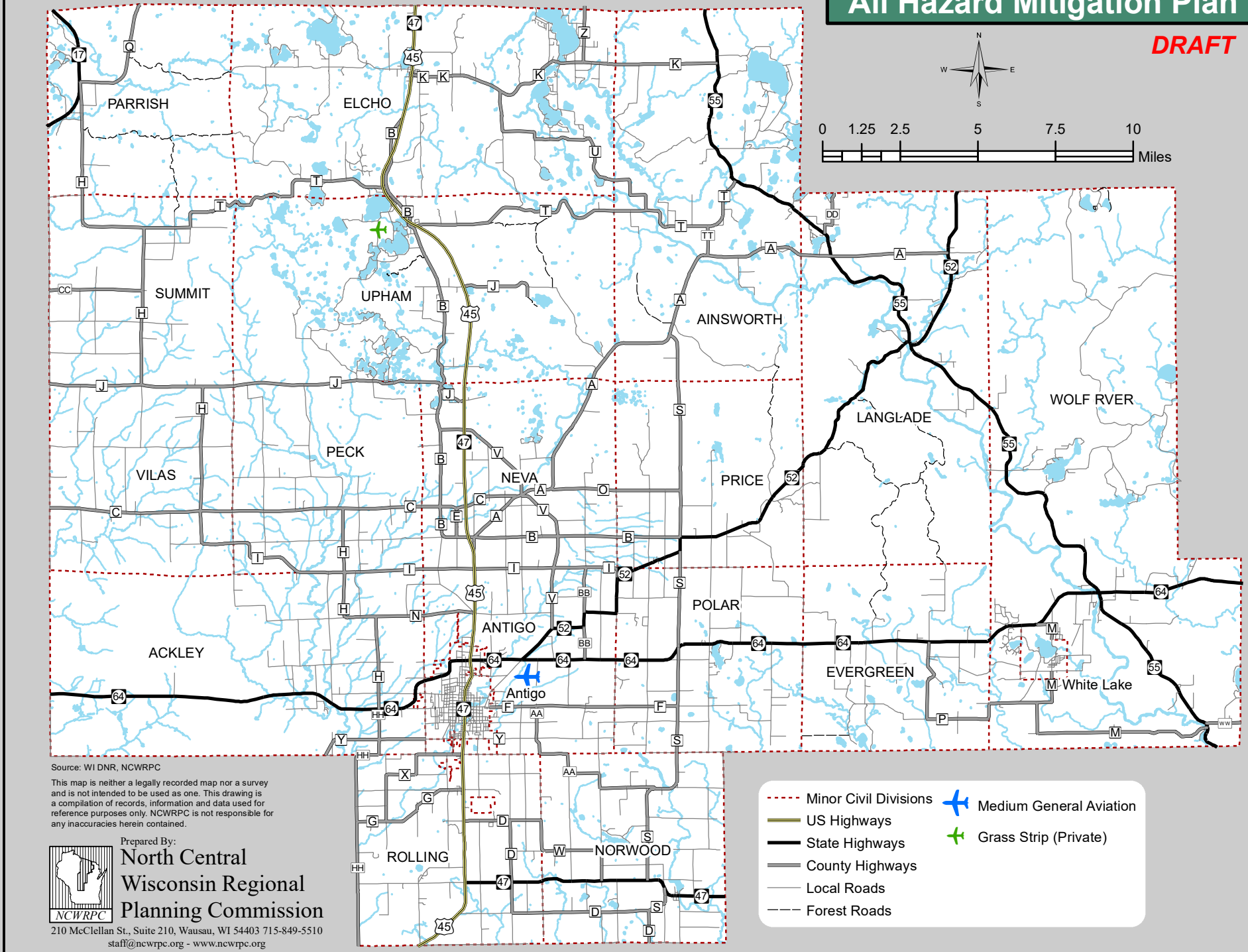


Source: WI DNR, FEMA, NCWRPC

Prepared By:
North Central Wisconsin Regional Planning Commission
NCWRPC
210 McClellan St., Suite 210, Wausau, WI 54403 715-849-5510
staff@ncwrpc.org - www.ncwrpc.org

All Hazard Mitigation Plan

DRAFT



Minor Civil Divisions
US Highways
State Highways
County Highways
Local Roads
Forest Roads
Medium General Aviation
Grass Strip (Private)

Source: WI DNR, NCWRPC

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

Prepared By:
North Central Wisconsin Regional Planning Commission
210 McClellan St., Suite 210, Wausau, WI 54403 715-849-5510
staff@ncwrpc.org - www.ncwrpc.org

Langlade County, Wisconsin

Transportation

Map 5

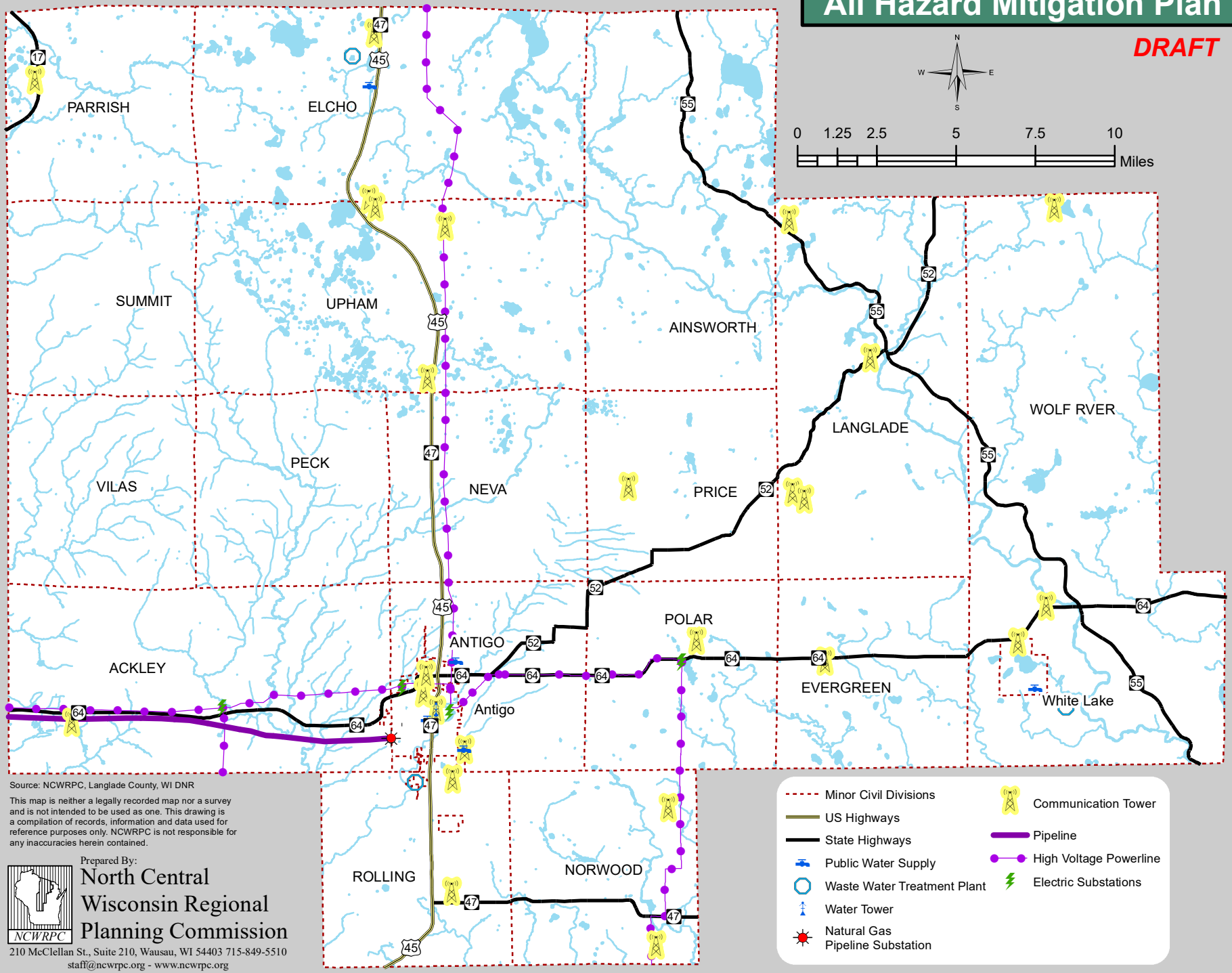
All Hazard Mitigation Plan

DRAFT

Langlade County, Wisconsin

Utilities

Map 6



Source: NCWRPC, Langlade County, WI DNR

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

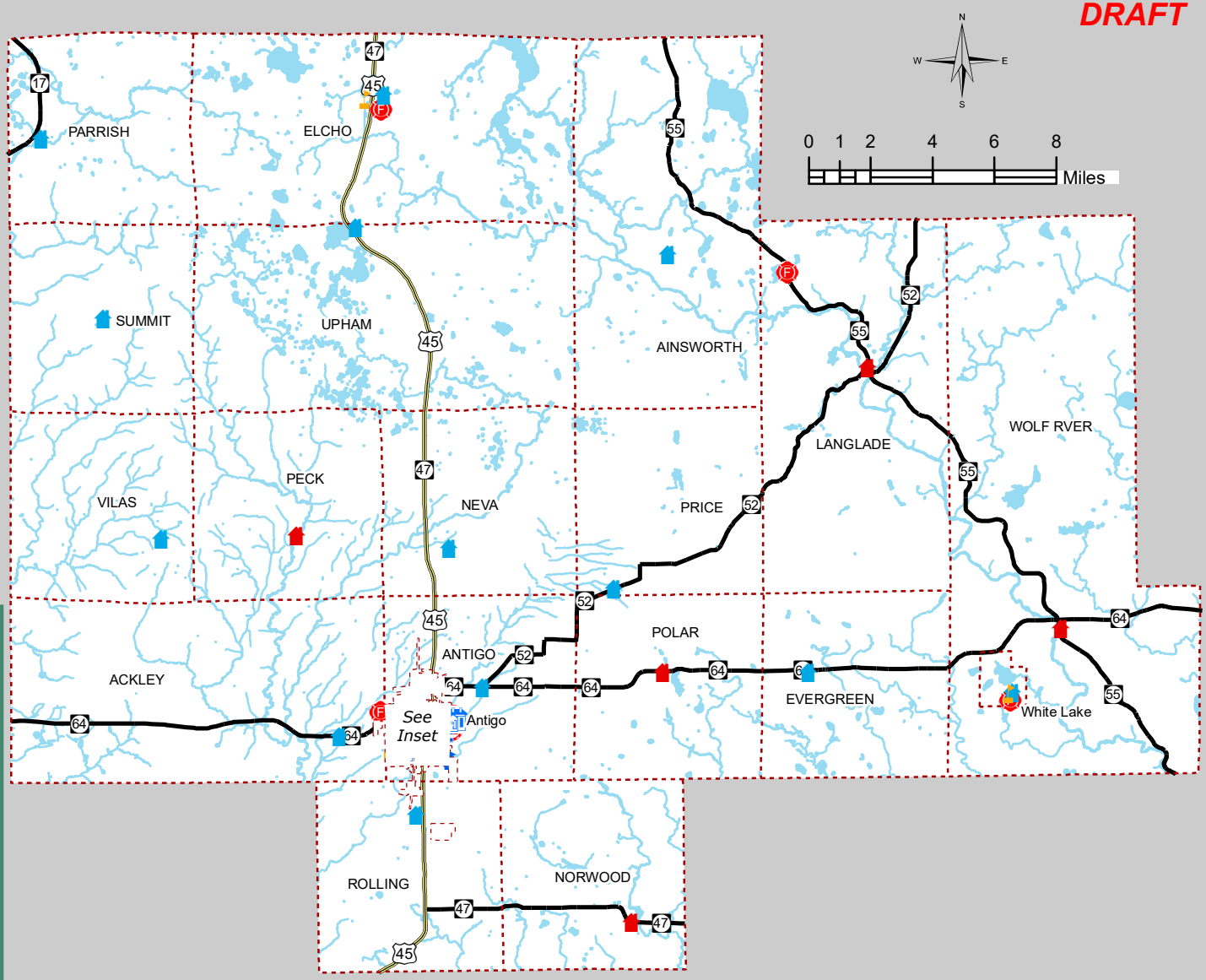
Prepared By:
North Central Wisconsin Regional Planning Commission
210 McClellan St., Suite 210, Wausau, WI 54403 715-849-5510
staff@ncwrpc.org - www.ncwrpc.org

All Hazard Mitigation Plan

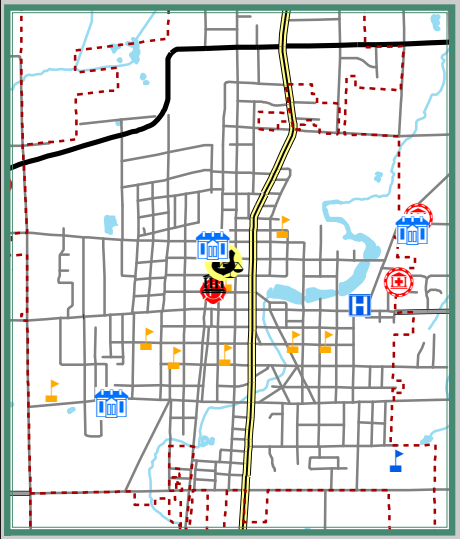
DRAFT

Langlade County, Wisconsin Critical Community Facilities Map 7

- US Highways
- State Highways
- County Highways
- Local Roads
- Minor Civil Divisions
- Assisted Living
- City Hall
- Court House
- Fire Station
- Health Services
- Hospital
- Police/Sheriff Department
- Schools
- Technical College
- Town Halls
- Town Hall/Fire Dept
- Water



City of Antigo - Inset



Prepared By:

North Central Wisconsin Regional Planning Commission

210 McClellan St., Suite 210, Wausau, WI 54403 715-849-5510 staff@ncwrpc.org - www.ncwrpc.org

Source: NCWRPC, Langlade County, WI DNR

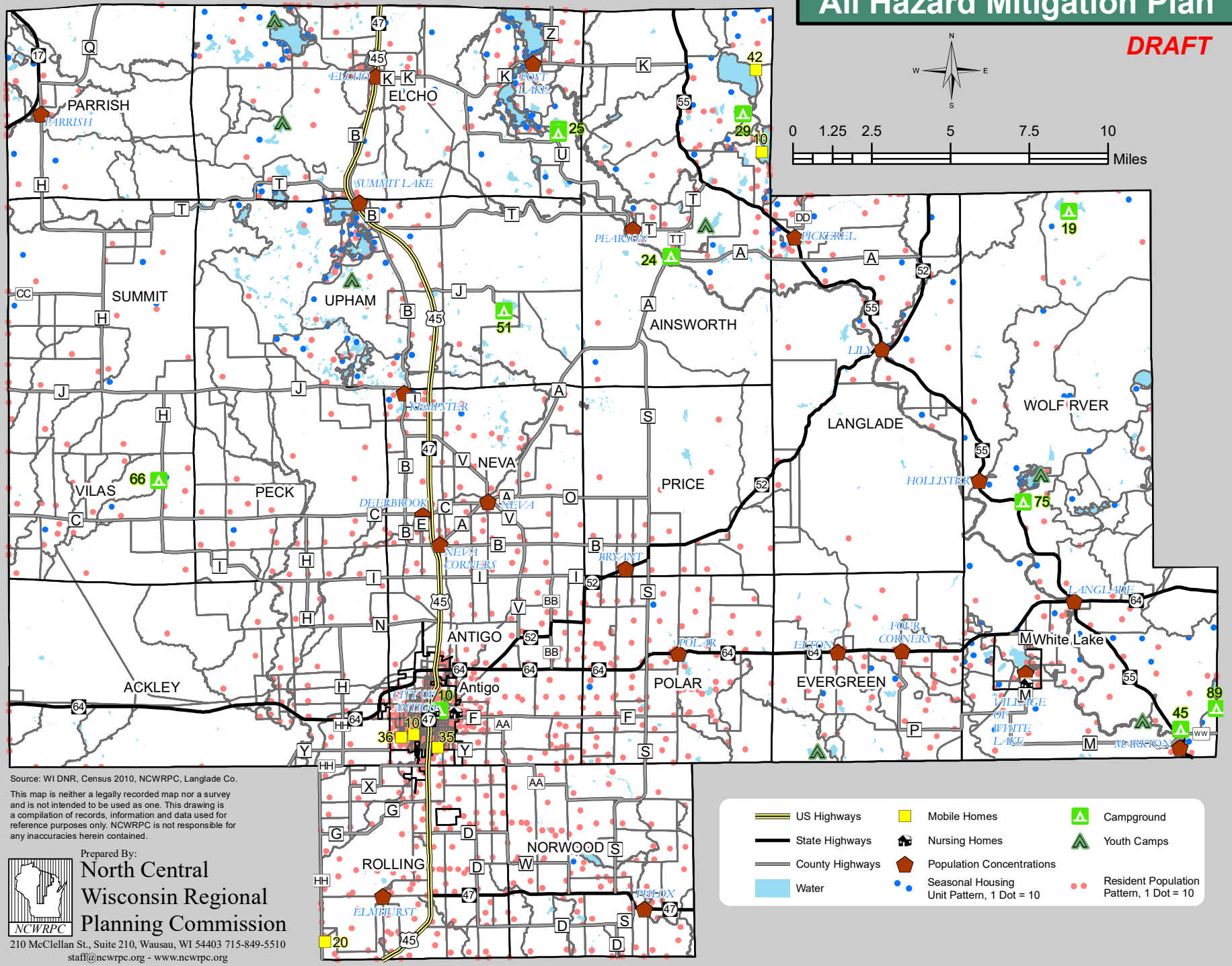
All Hazard Mitigation Plan

DRAFT

Langlade County, Wisconsin

Tornado Vulnerability

Map 8



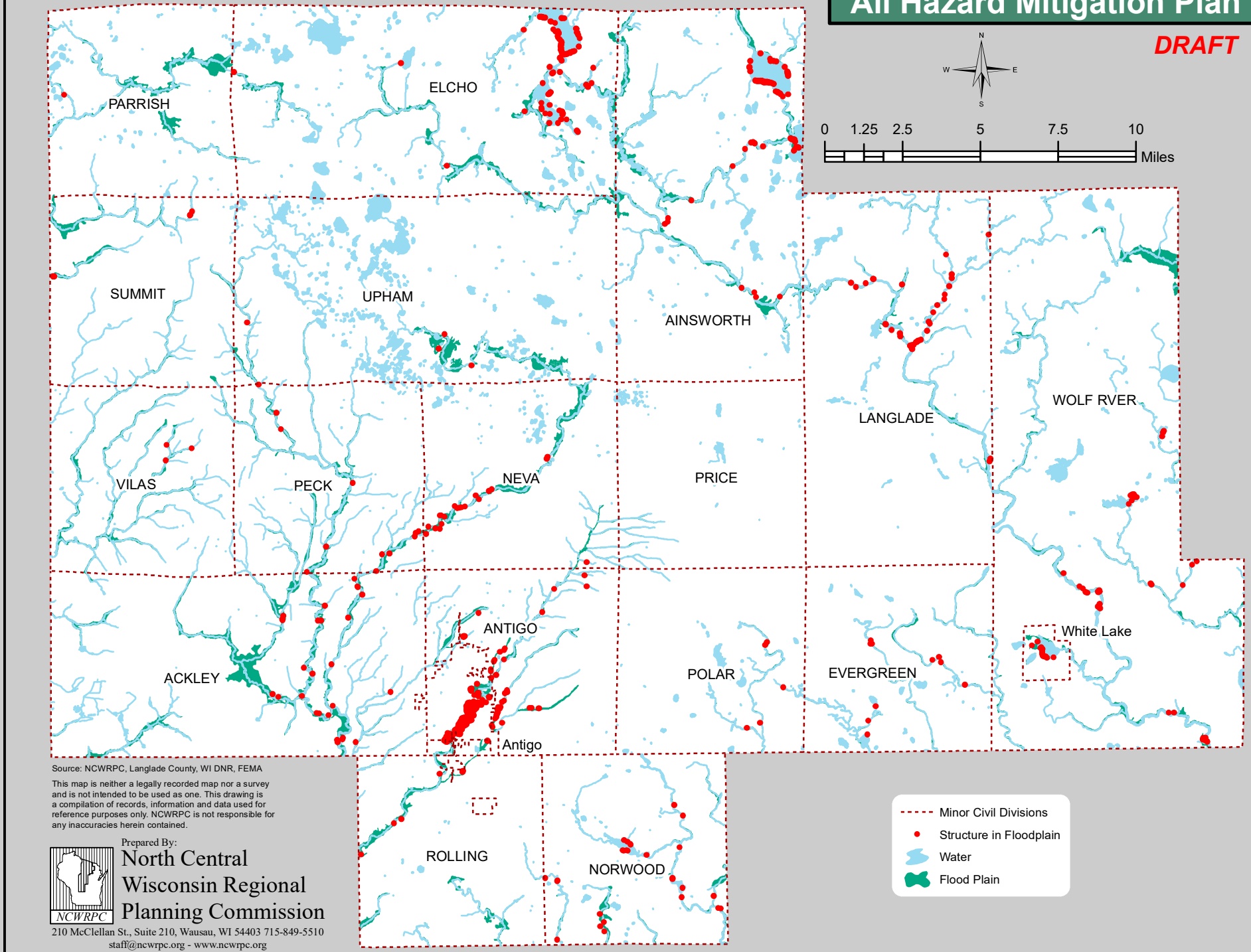
Source: WI DNR, Census 2010, NCWRPC, Langlade Co.

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

Prepared By:
North Central Wisconsin Regional Planning Commission
210 McClellan St., Suite 210, Wausau, WI 54403 715-849-5510
staff@ncwrpc.org - www.ncwrpc.org

All Hazard Mitigation Plan

DRAFT



Source: NCWRPC, Langlade County, WI DNR, FEMA

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

Prepared By:
North Central Wisconsin Regional Planning Commission
210 McClellan St., Suite 210, Wausau, WI 54403 715-849-5510
staff@ncwrpc.org - www.ncwrpc.org

Langlade County, Wisconsin

Flood Vulnerability

Map 9

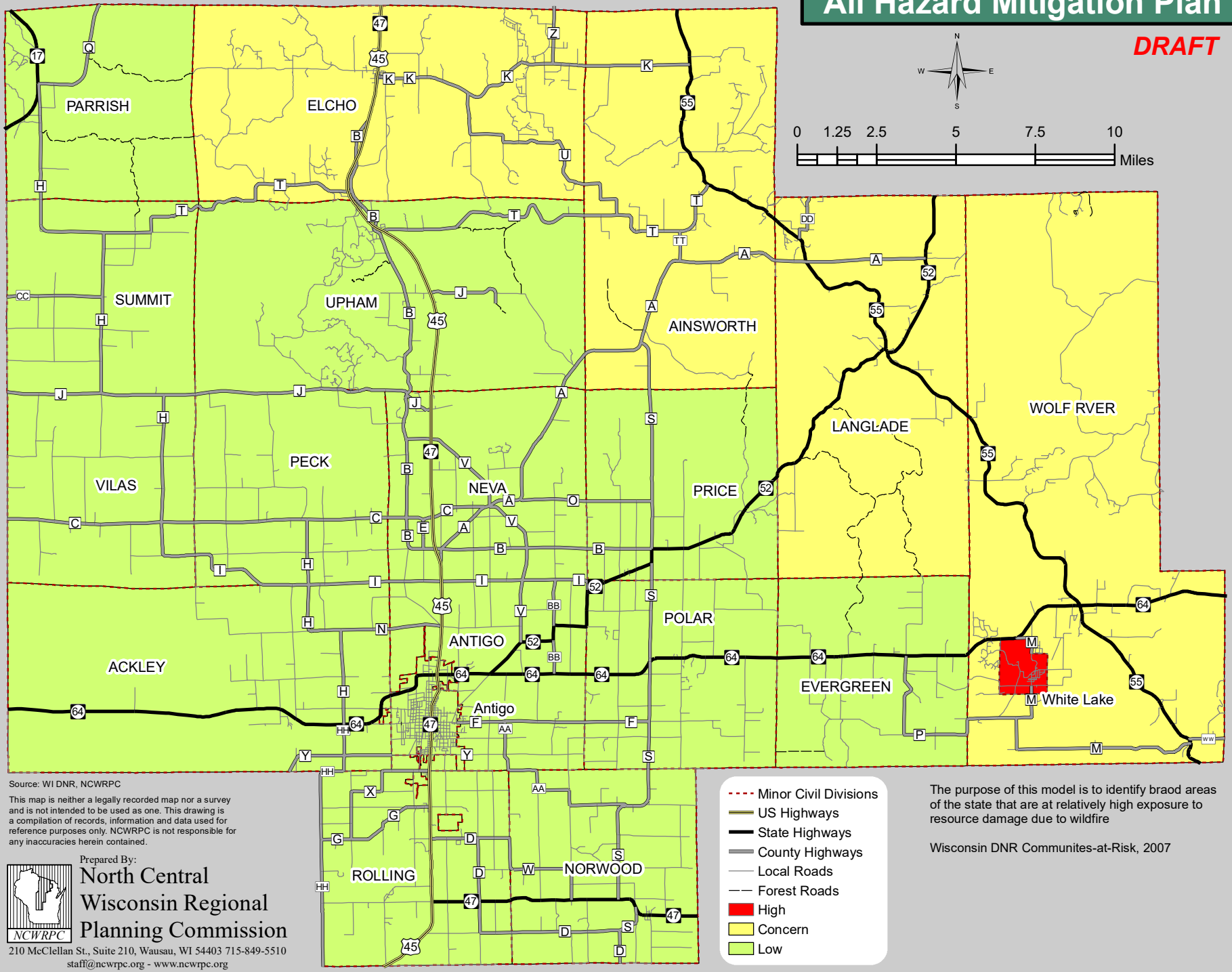
All Hazard Mitigation Plan

DRAFT

Langlade County, Wisconsin

Wildfire Risk

Map 10



The purpose of this model is to identify braod areas of the state that are at relatively high exposure to resource damage due to wildfire

Wisconsin DNR Communites-at-Risk, 2007

Source: WI DNR, NCWRPC

Prepared By:
North Central Wisconsin Regional Planning Commission
210 McClellan St., Suite 210, Wausau, WI 54403 715-849-5510
staff@ncwrpc.org - www.ncwrpc.org