Chapter 2 - County Profile

2.1 Description

Luce County lies in the Upper Peninsula of Michigan approximately 73 miles north and slightly west of the Mackinac Bridge. It is bordered on the north by Lake Superior, and the northern part is primarily State-owned forest. It is bordered by Chippewa County on the east and Alger and Schoolcraft Counties on the west. Mackinac County borders the southern County line.

Four townships and one Village make up the government of Luce County. McMillan Township is the largest in area of all townships in Luce County and in the entire State of Michigan, encompassing 597 square miles. The Village of Newberry falls within McMillan Township. Columbus Township on the western edge is the next largest township encompassing and area of 143 square miles and includes the community of McMillan. Pentland Township along the southeast corner is the next largest in land area of 107 square miles and adjacent to the west, Lakefield Township, the smallest in the County at 63 square miles.

From Newberry the City of Marquette lies 105 miles to the west, Traverse City 177 miles to the south and Detroit 362 miles to the south. The County extends 29.5 miles from the western boundary to the most eastern point. Luce County covers an area of 903 square miles.

2.2 Geography

According to the US Census Bureau, the county has a total area of 1,911.89 square miles of which 903.08 (or 47.23%) square miles is land and 1,008.80 square miles (or 52.76%) is water. The shoreline along Lake Superior has a length of about 31 miles.

2.3 Topography

The 903 square miles that make up Luce County lie almost entirely on a low plain, ranging from 600 to 1,000 feet above sea level. Around the Village of Newberry, little topographic variation is found.

2.4 Soils

Soil types found in Luce County include clays, loam, wet fine sands, sandy muck, and wet course sands. Sandy soils predominate in the western and southern portions of the County, and near Lake Superior. Mucks and wet coarse sands predominate in the eastern part of the County. The Village of Newberry is made up of mostly loamy and muck type soils.

2.5 Climate

It is generally recognized that the Great Lakes have a significant impact on the local climate. Winters and summers are later than those in other northern inland areas due to the temperatures of the surrounding large bodies of water. The climate is not as harsh as those inland areas of the Midwest.
According to information from Great Lakes Integrated Sciences and Assessments (GLISA) the climate of the Great Lakes is changing. Higher global temperatures change patterns of seasons and precipitation at Great Lakes regional and local levels. These uncertainties impact ecology, economy, and social well-being. The frequency and intensity of severe storms has increased, and current models suggest that this trend will continue as the effects of climate change become more pronounced. More severe storms may have a negative economic impact due to resulting damages and increased costs of preparation, clean up, and business disruption.¹

The County’s location on the Lake Superior shoreline has a significant impact on the local climate. Winters are characterized by more snowfall than other northern inland areas due to the temperatures of the surrounding large bodies of water (“lake effect” snow); although, the climate in the Eastern U.P. is not as harsh as those inland areas of the Upper Peninsula further west of Luce County.

The average temperature of Luce County is 41.66°F, which is lower than the Michigan average temperature of 46.64°F and is much lower than the national average temperature of 54.45°F.

Over the course of a year, the temperature typically varies from 11°F to 77°F and is rarely below -3°F or above 85°F.

The warm season lasts from May 28 to September 18 with an average daily high temperature above 67°F. The hottest day of the year is July 22, with an average high of 77°F and low of 57°F.

The cold season lasts from December 1 to March 10 with an average daily high temperature below 34°F. The coldest day of the year is January 23, with an average low of 11°F and high of 23°F.

The average annual snowfall ranges from 100 to 120 inches. The average US city gets 25 inches of snow per year. In the extreme northern areas, which border on Lake Superior, snowfall as much as up to 300 inches is not uncommon. This snowfall generally covers the ground from November through April each year and offers many economic advantages for winter sports. These sports include snowmobiling, cross-country skiing and dog-sledding.

Annual precipitation in the County ranges between 30 and 32 inches. The US average is 37. Summer days are long, lasting approximately 16 hours in June and July compared to less than nine hours in late December. Freezing occurs as late as June and begins as early as September. The growing season is approximately 140 days. The average year-round

¹ http://glisa.msu.edu
temperature ranges from 38 to 42 degrees. The average winter temperature ranges between 16 to 18 degrees and the average summer temperature ranges between 63 and 66 degrees.

2.6 Surface Waters

Luce County has an abundance of inland lakes and streams. There are 709 bodies of water (i.e. natural lakes, dam formed lakes, ponds, etc.) comprising of 15,270.2 acres. There are 658 miles of rivers and streams. The northern perimeter of Luce County borders Lake Superior.

2.7 Watershed Basins

The major river basins draining Luce County are as follows:

Manistique River Basin – this basin consists of the Manistique River, the Indian River, and many small tributaries which include the drainage of all of Schoolcraft County plus a small portion of Delta, Alger, Luce and Mackinac Counties. Water quality throughout the basin is excellent. Water in this basin, as is typical in many basins in the Upper Peninsula which drain considerable amounts of swamp and lowlands, is tea colored, due to tannins naturally present in the basin.

Tahquamenon River Basin – this basin originates in Luce County and covers the southern half of Luce County and part of western Chippewa County. This basin consists of the Tahquamenon River, plus numerous small tributaries, with discharge to Whitefish Bay on Lake Superior in the western part of Chippewa County. Water quality in this basin is generally excellent. The only known source of pollution is the effluent from the Newberry wastewater treatment plant which is discharged to the river near Newberry. Water in this basin is tea colored because of tannins naturally present in the basin.

The Two Hearted River Basin is a short minor river basin located along the coastline of northern Luce County. The 35-mile long mainstream flows from the northwest portion of the county in a northeasterly direction to Lake Superior. It has five major tributaries: the East, South, West and North branches, and Dawson Creek. The mainstream itself starts at the confluence of the South Branch and West Branch. Presently there are no known wastewater discharges into the Two Hearted River system. The high quality of the water reflects relatively undisturbed natural conditions.

2.8 Population and Demographics

The County has seen great fluctuations in population over the past three decades; much of this is attributed to the closure of a State mental health facility within the county, and the subsequent opening of a State Correctional Facility in Newberry.
2.8.1 Population

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<th>LUCE POPULATION 1980 – 2017</th>
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<tr>
<td>Luce County</td>
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<td>6,659</td>
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*Figure shows percent difference from year indicated.
Source: U.S. Bureau of the Census, American Fact Finder Estimates, 2017

Table 4 – Luce Co. Population 1980-2017

2.8.2 Age

As of the 2010 census, the population was 6,631 while 2017 estimates a 3.4% decline and overall 3.8% decline from 1980. The age of the residents in Luce County continues to rise, as evidenced by the table below, 27.8 percent of the total population falls between the ages of 35-54 years old. The County continues to lose its younger population. The median age in the County rose to 44.2, compared to 39.6 for the State of Michigan.

<table>
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<tr>
<th>LUCE COUNTY 2017 POPULATION BY AGE</th>
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<tr>
<td></td>
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<tr>
<td>Under 5</td>
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<td>10 to 14 yrs.</td>
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<tr>
<td>15 to 19 yrs.</td>
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<td>20 to 24 yrs.</td>
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<td>25 to 34 yrs.</td>
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<td>35 to 44 yrs.</td>
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<td>45 to 54 yrs.</td>
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<td>55 to 59 yrs.</td>
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<td>60 to 64 yrs.</td>
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<td>65 to 74 yrs.</td>
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<td>75 to 84 yrs.</td>
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<tr>
<th>LUCE COUNTY MEDIAN AGE 2000-2017</th>
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Source: U.S. Bureau of the Census, American Fact Finder Estimates, 2017

Table 5 Luce County Population by Age/Median Age

2.8.3 Households and Housing Units

The 2017 Census estimates 2,253 households in the County. On average, there were 2.37 persons in each household. The average household size increased by 2.2% from 2010, and the number of households in the County decreased by 6.1% during the same period.
According to the US Census American Community Survey 2017 estimates, the number of housing units was 4,375. Most of the County’s housing units were 1-unit, detached structures (85.1%), and a much smaller number of denser living arrangements (2 units or above attached), made up for roughly 4.8% of the total. There were a significantly higher number of units listed under the mobile home heading, with 9.9%. The age of the housing structures in the County is another statistic that should be considered when factoring in hazard risks, most of the structures within the County were constructed prior to 1970, with 2,567 falling into this category (58.7%). Extreme weather circumstances or other naturally occurring hazards could have a significant impact upon these aging structures.

The median value of owner-occupied housing units, according the 2017 Census estimate, was $83,200, considerably less than the State’s median value of $136,400. The most valuable of these properties were in Lakefield and Pentland Township. Within the County, there were only 0.4% units lacking complete plumbing facilities, 2.4% lacking complete kitchen facilities, and approximately 7.3% of occupied housing units with no telephone service.

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<td>Median (dollars)</td>
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Table 6 Luce County Housing Characteristics, 2017

In the entire State of Michigan, 77.8% of all occupied housing units use utility gas as the primary heating source. In Luce County this percentage was only 49.1%. The other primary type of heating fuels used were: Bottled, Tank or LP Gas 23.9%, Electricity 5.7%, Fuel Oil, Kerosene 3.2%, Wood 15.1%, and other 2.2%. It could be said the because the county has less reliance on utility fuel, it is less prone to infrastructure failures than urban areas, the nature of these heating sources requires education and awareness of both maintenance and handling, to reduce the risks of structural or other fires.

2.9 Land Use Patterns

Luce County is made up of mostly rural, forested land. Historically, the County has depended upon its natural resources as a major component of its economy.
Forests and wetlands combined make up more than 93 percent of the County’s land area. Approximately 293,700 acres are covered in forests, basically 50 percent of the County. Wetlands encompass almost 266,000 acres or about 45 percent of the County’s land area. Wetlands are most predominant in the east half of the County, but large areas of wetlands also run in an east-west direction along the southern edges of Columbus and McMillan townships and in a northwest-southeast direction through McMillan Township.

About 177,000 acres, or 66 percent of all wetlands are covered with lowland conifers or hardwoods, with another 81,000 acres (30%) containing shrub wetlands. Only 8,000 acres (3%) of all wetlands are non-wooded or aquatic beds.

2.10 Transportation Network

2.10.1 Highways

Approximately 64 miles of State highways serve Luce County, 388 miles of County roads, and 28 miles of local public streets. The three main arterial highways in Luce County are M-28 running east to west, M-123 traveling north from M-28, and M-117 traveling south from M-28. Highway M-28 is the main east-west corridor running from Sault Ste. Marie to the western end of the Upper Peninsula in Ironwood. Highway M-117 connects Highway M-28 to US-2. Highway M-123 connects the Village of Newberry to Paradise in Chippewa County and is in part a State Scenic Heritage Route. Many county roads are seasonal and are closed in the winter months due to the high cost of maintenance and level of use.

Average daily traffic counts recorded by MDOT for 2017 indicate that the highest volume of traffic within the County occurs on M-123 between downtown Newberry and the Newberry Correctional Facility with an average of 6,783 vehicles per day. The stretch of M-28 west of M-117 to McMillan corners has an average of 4,230 vehicles per day while east shows an average of 3,039, dropping to about 2,105 the further east one travels out of the community.

There are approximately 21 bridges found in Luce County. Most are in remote areas and some constructed from wood. McMillan Township has nine bridges, four are found in Lakefield Township, four in Columbus Township, two near Newberry and two in Pentland Township.

2.10.2 Air Service

The Luce County Airport, located five miles southeast of the Village, serves Luce County. It is classified as a medium utility facility according to the 1990 Michigan Aviation System plan. The facility consists of a paved and lighted 4,300-foot by 75 foot NW-SE primary runway and a 2,900-foot by 200 foot NE-SW turf crosswind runway. Small, private planes use it.

2.10.3 Railway

The County has one railroad line serving the area. The rail service provided is vital to future industrial development and current industrial activities. The primary rail line serving
Newberry passes through the north side of the Village of Newberry. A spur line runs from the primary line to the Luce County Industrial Park and Louisiana-Pacific Corporation.

### 2.10.4 Bus Transit

The Eastern Upper Peninsula Transportation Authority operates the Luce County Dial-a-Ride in the Village of Newberry with operation hours from 8 a.m. to 4 p.m., Monday thru Friday. This is a demand response operation and travels with in a 5-mile radius of the village.

### 2.11 Utilities

The Village of Newberry operates a sanitary sewer system and serves parts of McMillan and Pentland Township. Sewer mains vary between 10 inches and 30 inches, with the majority ranging between 10 inches to 12 inches. Peak capacity of the treatment plant, which is located adjacent to the Tahquamenon River on M-123 is 2.5 million gallons per day. The plant uses an activated sludge treatment system, which incorporates anaerobic digestion. The average daily use is 525,000 gallons or about 58 percent of the system’s capacity of 900,000 gallons per day. Independent of the sanitary sewer system, the Village also operates a storm sewer system. By operating separate storm and sanitary sewers, an otherwise major infiltration problem is avoided. Some storm water runoff may still be entering the sanitary sewer system and this is an ongoing issue the Village continues to seek resolution for.

The Village of Newberry and Pentland Township operate municipal water systems along the main corridor of M-123. The area of McMillan Township which lies immediately south of the Village is service, in part, by both systems.

The Village has 5 groundwater wells, but only use two wells to supply the Village water system due to problems with wells #1, #2 and #3. The total supply capacity of the Village water system is approximately 1,200 gallons per minute.

The Village has a water storage system consisting of a 100,000 gallon elevated steel storage tank, built in 1937.

All piping within the Newberry water distribution system is cast iron or ductile iron pipe. The Village water system includes 69 fire hydrants. Thirty of these hydrants are equipped with two 2 ½ inch hose nozzles and one pumper nozzle. The remaining 39 hydrants are equipped only with two 2 ½ inch hose nozzles each.

Pentland Township’s water distribution system is served by two groundwater wells with a total supply capacity of approximately 650 gallons per minute. One well has a 50,000 gallon elevated storage tank, the second a 200,000 gallon storage tank.

The State Correctional Facility is serviced by an independent water distribution system which consists of six wells with a total supply capacity of approximately 1,600 gallons per minute. The water storage system consists of a 110,000 gallon storage tank and the system serves all buildings on the prison grounds.
2.11.1 Electric

Cloverland is the primary supplier of electricity to the County and maintains an administrative office in Newberry. Its infrastructure is limited to the individual service lines providing electrical service from area substations to residences and other establishments.

The electric generating facility Newberry Water and Light is owned by the Village with the Water and Light Board overseeing the service. The service area includes all of the Village, an area extending five miles north of the Village, an area extending west of the Village to the community of Dollarville, and an area east of the Village. The power plant consists of three generators and was built in the early 1900’s. Electricity is re-purchased from Cloverland Electric.

2.11.2 Natural Gas & Oil

SEMCO ENERGY Gas Company, headquartered in Port Huron, Michigan, is a regulated public utility that delivers natural gas to approximately 300,000 residential, commercial, and industrial customers in service territories in the southern half of the state’s Lower Peninsula (including in and around the cities of Albion, Battle Creek, Holland, Niles, Port Huron, and Three Rivers) and in the central, eastern, and western parts of the state’s Upper Peninsula.

Bowman Gas Company, Ferrell Gas, Choice Propane and U.P. Propane are service providers for propane gas and heating needs within the County.

2.11.3 Communications

Luce County is serviced by AT&T Mobility, T-Mobile USA and Cellco Partnership for mobile wireless communications. AT&T Michigan, Hiawatha Telephone Co. and Upper Peninsula Telephone Co. provide telephone service and DSL internet. Internet services is also provided by Big Bay Broadband, Inc., Hughes Network Systems LLC, Lighthouse Computers, Northern MI University and ViaSat, Inc.

There are areas within the County that do not receive any cell phone service due to the remoteness of the area.

2.12 Emergency Management

2.12.1 County

_Luce County Office of Emergency Services_ serves as the Emergency Operations Center (EOC). Emergency 911 calls are routed through the Chippewa County 911 Dispatch Center. The EOC is also used by various agencies and groups for meetings and training.

The _Luce/Mackinac/Alger/Schoolcraft District Health Department (LMAS)_ leads the public health response to emergencies that could pose a major threat to health and safety to residents, workers and visitors in Luce County. They currently keep and maintain several
county-wide plans that are intended to increase preparedness and response that will greatly reduce the loss of life and property during a natural or man-made public health emergency.

The Luce County Road Commission is responsible for maintaining the county roads, bridges, road signs within the County in order to provide a safe and convenient transportation system for the public. The maintenance garage and the equipment necessary for this task are located throughout the County.

Luce County Building Department is responsible for processing permits, site reviews, inspections and enforcement of local building codes.

The Luce County Planning Commission has been set up to guide and accomplish a coordinated and harmonious development of Luce County; and to function in cooperation with other areas within Luce County and to serve as a coordinating agency for all planning activities and commissions in the County.

The Luce County Michigan State University (MSU) Extension Office is located in Newberry and provides various educational and outreach activities involving agriculture and health.

2.12.2 Police

With the 2011 state budget cut, Luce County lost its Michigan State Police post and coverage for the area is now provided out of Sault Ste. Marie.

Luce County maintains a Sheriff's Department that includes road patrol and maintaining a county jail. In addition the County Sheriff’s department provides security and educational programs for the area’s schools. Officers of the Michigan Department of Natural Resources supplement the law enforcement effort.

In Newberry, any law enforcement issues are covered by the Luce County Sheriff’s Department/ State Police. Zoning/Code Enforcement issues are covered by Property use Administrator.

2.12.3 Fire

Michigan Department of Natural Resources (MDNR)

The Newberry Management Unit is responsible for managing over 352,000 acres of state-owned land throughout all of Luce County and western Chippewa County. All management activities for the Unit, ranging from land management to fire control and recreation, are administered out of the Newberry Field Office.

Local Fire Departments

The Village of Newberry contracts with McMillan and Pentland Townships to maintain a local volunteer fire department. Columbus Township also provides a volunteer fire department and is contracted by Lakefield Township to provide fire service to Lakefield Township.
2.12.4 Ambulance Services

The Ambulance Department has 3 Basic Life Support Ambulances and 1 Advanced Life Support Ambulance staged at the ambulance building in Newberry. There is 1 Basic Life Support Ambulance stationed at Lakefield Township Hall, 1 First Responder Unit stationed at Seney and 1 at Rainbow Lodge. There is one Advanced Life Support Non-Transporting Unit (ECHO) stationed at Luce County Ambulance Building. They use 3 snowmobiles and 2 toboggans for snowmobile rescue. Luce County has 35 Basic Licensed Volunteers (MFR’s and EMT’s) and 11 Paramedics employees. Luce County Ambulance also provides Helen Newberry Joy Hospital with the ambulance and personnel to transfer patients from this Hospital to other Hospitals for advanced care.

2.12.5 Other Agencies

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) is a State regulatory agency that oversees the water quality of lakes, rivers and streams, air quality, waste management and environmental land quality of Michigan.

The Michigan Department of Transportation Service Center has jurisdiction over the State Highway network and provides financial and technical assistance for portions of the transportation system owned and operated by others including local transit systems, airports, intercity bus, trails, etc.

Helen Newberry Joy Hospital, located in Newberry, provides a variety of health services to the residents of the county and surrounding area.

Eastern U.P. Regional Planning & Development Commission is one of 14 Regional Agencies in the State of Michigan; established in 1968 as a multi-county organization to pool resources for the assistance of local governments in the Eastern Upper Peninsula. The agency assists EUP cities, townships and counties in the areas of grant writing, community surveys, land use planning, recreation planning, economic and community development, transportation, and GIS mapping.

The Salvation Army provides emergency disaster assistance as well as training and educational programs in emergency preparedness. Local volunteers helped serve food and drink to fire fighters in the Sleeper Lake and Duck Lake fires in Luce County in recent years.

2.13 Critical Facilities

When dealing with natural disasters, some development is more important than others, and these are considered to be “critical facilities.” Critical facilities are buildings and infrastructure whose exposure or damage can affect the well-being of a large group. For example, the impact of a flood or tornado on a hospital is greater than on a home or most businesses.
Generally, critical facilities fall into two categories:

1. Buildings or locations vital to public safety and the disaster response and recovery effort, such as police and fire stations and telephone exchanges, and
2. Buildings or locations that, if damaged, would create secondary disasters. Examples of such buildings or locations are hazardous materials facilities and nursing homes.

Critical facilities are not strictly defined by any agency. Seven categories of critical facilities were used by the Luce County Hazard Mitigation Planning Committee in the 2005 plan:

1. Hazardous materials sites.
2. Health facilities: hospitals and nursing homes.
3. Emergency response facilities: police and fire stations, public works sites, etc.
4. Utilities: water and wastewater treatment plants, electrical substations, etc.
5. Schools.
6. Places of assembly, such as casinos, or campgrounds or festivals that host over 1,000 people

An additional category of historical/cultural facilities was incorporated into this update.

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<thead>
<tr>
<th>Critical Facilities</th>
<th>Hazard Material Sites</th>
<th>Health Facilities</th>
<th>Emergency Facilities</th>
<th>Utilities</th>
<th>Schools</th>
<th>Assembly</th>
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*Table 7 – Luce Co. Critical Facilities.*