Environmental Assessment: East McKeese Road and M-22 Improvement Project, The Grand Traverse Band of Ottawa and Chippewa Indian Reservation, Peshawbestown, Leelanau County, Michigan

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PREPARED FOR

Grand Traverse Engineering and Construction

ON BEHALF OF

Grand Traverse Band of Ottawa and Chippewa Indians

PREPARED BY

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ENVIRONMENTAL ASSESSMENT: EAST MCKEESE AND M-22 IMPROVEMENT PROJECT, GRAND TRAVERSE BAND OF OTTAWA AND CHIPPEWA INDIAN RESERVATION, PESHAWBESTOWN LEELANAU COUNTY, MICHIGAN

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1 PURPOSE AND NEED FOR THE ACTION

The Grand Traverse Band of Ottawa and Chippewa Indians (GTBOC) is proposing to add a paved walking path (sidewalk) along a portion of East McKeese Road and M-22, add a cross-walk along M-22 near existing tribal buildings and the Leelanau Sands Casino and Lodge, and slightly widen portions of East McKeese Road and M-22. The project is in Peshawbestown, on the Grand Traverse Reservation in Leelanau County, Michigan (Sections 10 and 11 of Township 30 North, Range 11 West) (see Figures A1 and A2 in Appendix A and Figures B1 through B9 in Appendix B). The project extends along East McKeese Road/North Stallman Road from the intersection with Strongheart Way Road east to the intersection with M-22 and north along M-22 to East Bear Drive. M-22 is also deemed North West Bay Shore Drive throughout the project area.

The length of the project on East McKeese Road/North Stallman Road from North Strongheart Way to M-22 is approximately 0.25 mile (0.4 kilometers [km]). The length of the project on M-22 from East McKeese Road/North Stallman Road and north to East Bear Drive is approximately 0.9 mile (1.4 km). The proposed work to add the sidewalk and widen the existing roads (East McKeese and M-22) would occur in the existing right-of-way (ROW). The paved sidewalk would be limited to the south side of McKeese Road and the east side of M-22. The existing ROW is 66 feet (20.1 meters [m]) wide on East McKeese Road/North Stallman Road and 100 feet (30.5 m) wide on M-22. The project area is on Michigan DOT (MDOT) and Leelanau County ROW property.

The purpose of the proposed action is to improve pedestrian safety and mobility along M-22 and McKeese Road within the community of Peshawbestown, Michigan, by constructing sidewalks, marked crosswalks, and associated pedestrian infrastructure. The project is intended to:

- reduce the risk of vehicle–pedestrian conflicts
- improve safe access between residential areas and essential community destinations
- support the health, safety, and wellbeing of Tribal citizens and visitors traveling through the Grand Traverse Band of Ottawa and Chippewa Indians' reservation lands.

The project is considered a Federal Action as defined by the National Environmental Policy Act of 1969 (NEPA) since it is being supported via federal funds. The Bureau of Indian Affairs (BIA) Midwest Region is the lead federal agency. The BIA Midwest Region's Proposed Action is to respond to the Tribe's request to expend highway trust funds through the Tribal Transportation Program (TTP) and grant approval for additional parking and access to the Public Safety Building. The need for the Proposed Action is established by the BIA Midwest Region's responsibilities under 23 United States Code (USC) 201 and 202. Under 23 USC 201, the need is recognized for all public federal and tribal transportation facilities to be treated under uniform policies, and the Secretary of Transportation is required to coordinate a uniform policy. The regulations under 23 USC 202 describe the appropriate use and distribution of funds, planning requirements, the bridge priority program, and funding and project selection for highway safety issues under the TTP. In addition, the need for the Proposed Action is established by the BIA Midwest Region's responsibilities under the TTP in Rights-Of-Way over Indian Lands (25 Code of Federal Regulations [CFR] 169) and under the 1948 ROW Act (25 USC 323–328).

Construction activities are proposed that will have effects that can be meaningfully evaluated and are therefore subject to NEPA review. Based on available information and the nature of the Proposed Action, the project is expected to be a Class III Action requiring the preparation of this Environmental Assessment (EA) and appropriate subsequent documentation, either an Environmental Impact Statement or Finding of No Significant Impact.

This EA has been prepared by SWCA Environmental Consultants (SWCA) on behalf of the GTBOC and the BIA Midwest Region. Information contained in this EA was also furnished by federal and state agencies and local units of government. This EA has been prepared in accordance with the requirements of NEPA, including the regulations and procedures implementing NEPA at 43 CFR 46 and Part 516 of the Department of the Interior Manual, consistent with the President's January 2025 Executive Order 14154 and Presidential Memorandum (DOI 2025).[1] The BIA as lead federal agency will use the EA to determine if the proposed activity will result in significant effects to the human environment. Department of the Interior regulations require notifying the public of the availability of an EA and FONSI (43 CFR 46.305(c)). The Notice of Availability (NOA) for the EA and FONSI will be published in a local newspaper at the same time as the decision to proceed.

1.1 Project Description

M-22 is a state trunkline highway that functions as a regional travel corridor and passes directly through the center of the community of Peshawbestown. The roadway carries traffic at posted speeds up to 55 miles per hour and serves a high volume of through traffic traveling between destinations on the Leelanau Peninsula and the greater Traverse City area. Despite its regional function, M-22 also serves as the community's main street, with residential neighborhoods, Tribal government offices, businesses, schools, markets, and cultural destinations located on both sides of the roadway.

Existing pedestrian infrastructure along this segment of M-22 and McKeese Road is limited or absent. In many locations, sidewalks are lacking, pedestrian crossings are unmarked, and lighting is inconsistent. As a result, pedestrians are often required to walk along roadway shoulders or cross the highway without designated crossing facilities, creating hazardous conditions and increasing the likelihood of vehicle–pedestrian conflicts.

These conditions disproportionately affect children traveling to school bus stops, elders, and other community members who rely on walking as a primary mode of transportation. Tribal members and leadership have raised long-standing concerns regarding the safety of pedestrians crossing M-22 to access essential services, attend cultural and community events, and travel between homes and Tribal facilities.

[1] Executive Order 14154, Unleashing American Energy (January 20, 2025) and a Presidential Memorandum titled Ending Illegal Discrimination and Restoring Merit-Based Opportunity (January 21, 2025) require the Department of the Interior to strictly adhere to NEPA. Further, such Order and Memorandum repeal Executive Orders 12898 (February 11, 1994) and 14096 (April 21, 2023). Because Executive Orders 12898 and 14096 have been repealed, complying with such Orders is a legal impossibility. The BIA verifies that it has complied with the requirements of NEPA, including the Department's regulations and procedures implementing NEPA at 43 CFR 46 and Part 516 of the Departmental Manual, consistent with the President's January 2025 Order and Memorandum. The BIA has also voluntarily considered the Council on Environmental Quality's rescinded regulations implementing NEPA, previously found at 40 CFR 1500–1508, as guidance to the extent appropriate and consistent with the requirements of NEPA and Executive Order 14154.

The roadway also physically divides the community, limiting safe and convenient access between areas that are otherwise closely connected. Without pedestrian facilities designed to accommodate local travel, M-22 functions as a barrier within the Tribe's homeland rather than transportation infrastructure that supports community connectivity.

The Peshawbestown Master Plan and associated public engagement efforts have consistently identified pedestrian safety, traffic calming, sidewalks, and crossing improvements as priority needs. Community feedback reflects a strong desire to reduce safety risks, improve accessibility, and ensure that current and future generations can safely move through the heart of Peshawbestown.

2 PROJECT ALTERNATIVES

The alternatives considered for the EA consist of a No Action Alternative and the Proposed Action Alternative. The No Action Alternative is the baseline condition that is referenced through this document. For an EA where there are no unresolved conflicts with respect to alternative uses of available resources, only the Proposed Action and No Action alternatives require consideration (BIA 2012). Other alternatives do not need to be analyzed. In this EA, no unresolved conflicts with respect to alternative uses have been identified; therefore, only the Proposed Action and No Action alternatives are considered in detail.

2.1 No Action Alternative

Under the No Action Alternative, the site for the proposed development would remain in the same condition as it is currently without a sidewalk along East McKeese Road and no cross-walks along M-22. Furthermore, the site would not have extended road ROW for pedestrians to access tribal and commercial buildings along M-22. For these reasons, the capacity of the East McKeese and M-22 improvements would likely be exceeded under the No Action Alternative.

2.2 Proposed Action

The proposed action is needed to address high-speed traffic conditions within a residential and cultural community core; the absence of sidewalks, marked crosswalks, and pedestrian-scale infrastructure; and the physical division of the community by a state highway. The project responds directly to priorities identified through Tribal planning and public input and aligns with national recognition of pedestrian safety challenges in Tribal communities where highways bisect reservation lands.

3 ENVIRONMENTAL IMPACTS

3.1 Land Resources

3.1.1 Topography

The topography of the project area is generally flat. Elevations in the project area range from 188 to 200 feet (see Figure A1).

Photographs of the existing conditions in the project area are included in Appendix B.

Grading, the addition of gravel, and other construction-related alteration of the existing topography would be expected as part of site preparation and road expansion. Significant changes to the land topography are not anticipated.

3.1.2 Soils

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, eight soil map units are present within the project area (NRCS 2026) (Table 1; Figure A3).

Table 1. Soil Types in the Project Area

Soil Map Unit Name	Soil Map Unit Symbol	Acres in Project Area
Mancelona-East Lake loamy sands, 0 to 6 percent slopes, lake moderates	MlB	13.60
Mancelona sandy loam, 6 to 12 percent slopes	MdC	2.26
Leelanau-East Lake loamy sands, 25 to 45 percent slopes	LlF	0.54
Kaleva sand, 0 to 6 percent slopes	KaB	0.46
Emmet-Omena sandy loams, 25 to 50 percent slopes	EsF	0.45
Mancelona sandy loam, 0 to 6 percent slopes	MdB	0.27
Alpena gravelly sandy loam, 0 to 12 percent slopes	AsC	0.13
Kiva-Mancelona gravelly sandy loams, 12 to 18percent slopes	KmD	0.10
Total		**17.81**

Source: NRCS (2026).

Existing soils would be disturbed and asphalt and/or gravel may be added as part of the road construction activities. Construction activities would result in short-term exposure of soils to wind and rain erosion. Soil erosion will be minimized via implementation of the typical engineered erosion and sediment control measures such as seeded cover of exposed soils in accordance with Michigan Department of Environment, Great Lakes, and Energy (EGLE) permit requirements.

3.1.3 Geology

The *Quaternary Geology of Southern Michigan*, published by the Michigan Natural Features Inventory (MNFI) (MNFI 1982), indicates that the site is in an area of lacustrine sand and gravel

and coarse-textured glacial till. Due to the minor nature of the project work and the confined space of the work to the existing road ROW, the proposed road expansion will have no impact on the geology of the area.

3.2 Water Resources

3.2.1 Surface Water

Engineered erosion control measures will be implemented to protect surface water from stormwater runoff during construction activities in accordance with EGLE, MDOT, and Leelanau County permit requirements.

A National Flood Hazard Flood Insurance Rate Map prepared by the Federal Emergency Management Agency indicates that the project area is not located within a flood zone area; however, there is a Floodplain zone to the east of the project area (Federal Emergency Management Agency 2023). The project will be constructed outside of the regulated floodplain, thus no impacts to floodplains are anticipated.

3.2.2 Groundwater

Floodplain zones AE/VE Zone, potential wetlands, and streams located to the northeast, east and south of the project area indicate a shallow water table is likely present adjacent to the project area. Additionally, Belangers Creek is located to the south of the project area.

Project planning will include the appropriate permit processes and requirements to protect the groundwater resources, including a groundwater discharge permit (if applicable) and well permit.

3.2.3 Wetlands

The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory indicates that wetlands are not present in the project area, but are located to the north, east and south of the project area (USFWS 2015). The EGLE Wetlands Map Viewer depicts the Part 303 final wetlands inventory for the state of Michigan. This data set includes a combination of National Wetlands Inventory data, Michigan Resources Inventory System data, and hydric soils. The EGLE Wetlands Map Viewer indicates there are wetlands to the northeast, east and southwest of the project area (EGLE 2026).

During the resource delineation on November 5, 2025, no wetlands were delineated within the project area. Measures will be implemented to control erosion that could potentially affect nearby wetlands. The project design will manage the stormwater runoff. Therefore, the proposed road expansion will have no effect on wetland resources.

3.3 Air Quality

The Clean Air Act and the 1990 Clean Air Act Amendments allow for the establishment of primary and secondary National Ambient Air Quality Standards (NAAQS) for six criteria pollutants. Areas where the criteria pollutant levels do not exceed the annual average or short-

term standards are considered in attainment of the NAAQS. Additional obligations occur for federal actions that are considered within non-attainment areas.

The project area is located within an attainment area for the NAAQS.

There would be short-term impacts to air quality due to short-term airborne dust and heavy equipment emissions during construction activities. The additional dust during construction could be controlled using mitigation actions as deemed necessary. These short-term construction-related emissions would not interfere with Manistee County's status as an attainment area for the six critical pollutants per the NAAQS. A conformity analysis is not required, as the project is in an attainment area. No long-term effects to air quality are expected.

3.4 Living Resources

The living resources evaluation considers wildlife, vegetation, ecosystems, and biological communities. The evaluation included review of publicly available information and coordination with public agencies. This effort includes, but is not limited to, consideration of threatened and endangered species and compliance with Section 7 of the Endangered Species Act.

3.4.1 Federally and State-Listed Threatened and Endangered Species

The USFWS was consulted via the Information for Planning and Consultation (IPaC) system to determine if federally listed or proposed species may occur in the project area or if designated critical habitat is present (Appendix D) (USFWS 2026a). If suitable habitat or critical habitat is not present in the project area, the IPaC screen fulfills the Section 7 obligation of the Endangered Species Act. Federally listed threatened and endangered species identified are the federally listed endangered Indiana bat (*Myotis sodalis*) and piping plover (*Charadrius melodus*); the federally listed threatened rufa red knot (*Canutus rufa*), pitcher's thistle (*Cirsium pitcheri*), and eastern massasauga rattle snake (*Sistrurus catenatus*); and the federally proposed threatened species monarch butterfly (*Danaus plexippus*).

Project review requests for state-listed species are conducted by the MNFI, a program run by Michigan State University. A Rare Species Review was requested from the MNFI on February 6, 2026, to determine whether any state-listed threatened or endangered species, other protected species or habitats, or sensitive ecosystems or biological communities may occur within 1.5 miles of the project area (see Appendix D). Two state-listed threatened species that may occur within 1.5 miles of the project area were identified; the little brown bat (*Myotis lucifugus*) and the common loon (*Gavia immer*); however, there are no concerns regarding these species as records of both species are historic and are not anticipated to be impacted by activity within proposed project area. The review also indicates that the following state special concern species may occur within 1.5 miles of the project area: yellow banded bumble bee (*Bombus terricola*), bald eagle (*Haliaeetus leucocephalus*), and furrowed flax (*Linum salcatum*). It is unlikely that adverse impacts to these species will occur. These species are not protected under endangered species legislation, but MNFI recommends efforts to minimize any or all impacts to these species.

3.4.1.1 WILDLIFE

Federally listed or proposed wildlife species for Leelanau County include the Indiana bat, piping plover, red knot, eastern massasauga, monarch butterfly, and Pitcher's thistle. The suitable habitat for each listed species has been reviewed with the project area and characteristics to determine if species and critical habitat is present. A narrative for each listed species is provided below.

The **Indiana bat (*Myotis sodalis*)** occupies hibernacula during the winter months and uses forested areas for roosting and foraging (USFWS 2026). This species is wide-ranging and can be found in many midwestern states, including Michigan. Populations have declined in areas with high rates of white-nose syndrome (UFWS 2026b). The project area is not located in a confirmed white-nose syndrome positive county in Michigan. Sparse forested areas are present within the project area and impacts to forested areas will be minimal. Hibernacula, including mines and caves, are not known near or within the project area (see Appendix D). Due to the lack of suitable habitat in the project area, the project is unlikely to impact this species.

The **piping plover (*Charadrius melodus*)** is a shorebird that occupies coastal areas or large wetland complexes. The project area is not located along the Lake Michigan shoreline where the piping plover is known to occur (USFWS 2026c). No critical habitat or suitable habitat is present in the project area; therefore, the project is unlikely to impact this species.

The **rufa red knot (*Calidris canutus rufa*)** is a shorebird that migrates between breeding grounds in the Canadian Arctic and wintering regions in the southeastern United States, northwestern Gulf of Mexico, northern Brazil, and Tierra del Fuego. The rufa red knot prefers to occupy shoreline and mudflat habitats (USFWS 2026d). No critical habitat or suitable habitat is present in the project area; therefore, the project is unlikely to impact this species.

The **eastern massassauga rattlesnake (*Sistrurus catenatus*)** is a rattlesnake that prefers wetlands that occur in areas with adjacent uplands (USFWS 2026e). No wetlands are present in the project area; however, there are wetlands present north, east and south of the project area. No critical habitat or suitable habitat is present in the project area; therefore, the project is unlikely to impact this species.

The **monarch butterfly (*Danaus plexippus*)** can occur in a variety of habitats with flowering nectar resources and milkweed plants, their larval host plant (USFWS 2026f). The project area is located in the known summer breeding range, and monarchs could pass through the project area. The land cover in the project area is developed areas and roadsides with potential to host milkweed plants; therefore, suitable habitat may be present in the project area during the summer months of the year. The project area does not fall within proposed critical habitat for this species. The project may impact this species if milkweed is present at the time of construction. The monarch is currently listed as a proposed endangered species and no regulatory guidance or requirements have been established at this time.

3.4.1.2 VEGETATION

Pitcher's thistle (*Cirsium pitcheri*) is a federally listed threatened thistle that grows on beaches and grassland dunes along the Great Lakes shoreline (MNFI 2026). Dunes and other sandy areas

are not present in the project area. The site is primarily a maintained lawn and is heavily disturbed. Therefore, the project is not likely to impact this species.

3.4.2 Ecosystems and Biological Communities

The MNFI review identified one natural communities within 1.5 miles of the project area. The natural community identified is the hardwood-conifer swamp; this area is not legally protected, but it could harbor species of interest. The project area consists primarily of developed and maintained roadside. Wetland areas are present to the north, east, and south of the project area. The Michigan Natural Features Inventory Biological Rarity Index does not designate a value for the project area. Where data is available in the surrounding areas, the Biological Rarity Index ranges from very high to low (Paskus et al. 2007). Because no sensitive natural features or biological communities are present within the project area, no impacts to these resources are anticipated.

3.4.2.1 CRITICAL DUNES

Critical dune areas are present in Leelanau County, Michigan; however, these areas are primarily located along the Lake Michigan shoreline and are not present within the project area. The project will not have an impact on critical dune areas.

3.5 Cultural Resources

SWCA conducted an archaeological reconnaissance survey, including a review of historic, cultural, and religious properties (Appendix E).

3.5.1 Historic and Archaeological Resources

Field reconnaissance was completed on April 23, 2026, by SWCA. The investigation included field survey within the project area. No archaeological or historical material was identified. Project clearance for cultural resources concerns was recommended. Consultation with the GTBOC Preservation Officer (Aaron Chivas) was attempted in December 2025, May 2026, and June 2026 regarding the project via emails and phone calls. MDOT and MI SHPO were both consulted with for the project, including submitting the Phase I Cultural Resources Report and the Architectural/Above-Ground Inventory results. SWCA conducted a site file search through MI SHPO in November 2025 to identify previously surveyed resources and historic properties that have been determined eligible for or listed in the National Register of Historic Places (NRHP). The site file search was conducted in a 0.5-mile (0.81-km) radius surrounding the project area (study area). SWCA consulted the MI SHPO Cultural Resource Information System (CRIS) portal and web map and the National Park Service's NRHP database (MI SHPO 2026; National Park Service 2026).

The BIA (Mr. Timothy Guyah) reviewed and approved the Sec. 106 above-ground inventory and report as well as the cultural resources inventory and report in July 2026. Tyler Kassing and Dan Wagner of MDOT reviewed the cultural resources and above-ground architecture reports and approved these on June 17, 2026. MISHPO reviewed the cultural resources and above-ground architecture reports and stated that the proposed undertaking will have no adverse effect [36 CFR

§ 800.5(b)] on historic properties within the area of potential effects on June 18, 2026 (Cassandra Nelson, MISHPO, correspondence with SWCA and email letter notification). As part of the no adverse effect statement, MISHPO requested an Unanticipated Discoveries Plan (UDP) be submitted to the MISHPO prior to project related activities. The BIA (Mr. Timothy Guyah) signed and approved the UDP on July 21, 2026. The UDP was submitted and approved by the MISHPO on July 22, 2026. The UDP is intended to serve as a guide if archaeological material or human remains are encountered during project work. The conditions outlined in the UDP should be observed by the agency, project managers, those working on construction activities, heavy equipment operators, planners/designers, and consulting parties.

3.5.2 Cultural, Sacred, and Traditional Cultural Properties

Cultural, sacred, and traditional cultural properties are not associated with the project area based on results of cultural resources on-line file searches at the Michigan State Historic Preservation Office and the current field inventory.

Section 4(f) of the 1966 Department of Transportation Act stipulates that land cannot be used from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless there is no feasible and prudent alternative; and the action includes all possible planning to minimize harm to the property resulting from use. The proposed project will not use land from Section 4(f) resources.

3.6 Socioeconomics

Socioeconomic conditions provided are based on the 2020 U.S. Census, the 2020–2024 American Community Survey (ACS), and the 2020 Leelanau General plan (see Appendix C).

3.6.1 Employment and Income

Based on the 2020–2024 ACS, out of 137 total households, approximately 2% of the Grand Traverse Reservation and Off-Reservation Trust Land population has an income of less than $10,000 and 3% has income between $10,000 and $24,999. The median income estimate for the Grand Traverse Reservation and Off-Reservation Trust Land population was estimated to be $56,250 with an estimated 72.2% employment rate (U.S. Census Bureau 2024).

Leelanau County had an estimated median household income of $99,422 with an estimated employment rate of 50.6% (U.S. Census Bureau 2025).

3.6.2 Demographic Trends

The 2020–2024 estimated population of the Grand Traverse Reservation and Off-Reservation Trust Land was 541 (U.S. Census Bureau 2024) with an average population growth rate, based on the proportion of middle-aged to older adults compared to children. The total 2024 population of Leelanau County was 22,871 (U.S. Census Bureau 2025). From 2020 to 2024, the Leelanau population has increased slightly. The Leelanau General Plan indicates they are planning for growth within the county and balancing infrastructure and preservation of natural features.

3.6.3 Lifestyle and Cultural Values

Leelanau County is a rural and primarily forested area that has experienced residential growth in recent years. The population in Leelanau County steadily increased from 1970 to 2025 with slight decreases in population in 1980, 1983, 2010, and 2016. From 1940 to 2000, the county saw a 150% increase in population. Since 2019, Leelanau County has had a modest increase in population. The residents of Leelanau County desire to maintain the natural resources of the area and keep forested, orchard, and agricultural lands free of development. The continuation of development is only desired in the areas that are currently developed in the county, such as existing villages and subdivisions (see Appendix C). The proposed road expansion is consistent with the planned approach that manages growth to control sprawl and continue to not obstruct the rural areas with development.

3.6.4 Community Infrastructure

Fire protection is provided by GTB Fire and Rescue. The station is located at 3501 North Putnam Road in Suttons Bay. Energy in the area is supplied by Consumers Energy and Cherryland Electric. Municipal water and sewer are present in the area. The proposed project may need to relocate existing utility lines; if this is required, affected residents will be contacted prior to the outage occurring. The utility lines will be relocated, and service will resume. No long-term impacts to community infrastructure are anticipated.

3.7 Resource Use Patterns

3.7.1 Hunting, Fishing and Gathering

The project area consists of developed areas and forest edges adjacent to roads and is not used for hunting, fishing, or gathering. No impacts to these activities are anticipated.

3.7.2 Timber Harvesting

The project area is developed roadsides with no woodlots and few trees present. Trees are present adjacent to the proposed project area. No impacts to timber harvesting are anticipated.

3.7.3 Agriculture

Much of the land within the project area is former farmland that is presently developed land and roadsides. Based on the NRCS Web Soil Survey, the project area consists of approximately equal parts of both farmland of unique importance and not prime farmland (NRCS 2026). The project area is no longer used for agricultural purposes; therefore, the project will have no impact on agriculture.

3.7.4 Minerals

The site geology consists of sand and gravel and does not have economic value. No known minerals occur in the project area. Therefore, the project will have no impact on mining or mineral resources.

3.7.5 Recreation

The project area consists of developed and is not used for recreation. No impacts to recreation activities are anticipated.

3.7.6 Transportation

Access to the project area is along M-22 and McKeese Road. The improvement of this road will have positive long-term impacts on transportation through this area. However, during construction there is potential or road closures to temporarily impact transportation through this area.

3.7.7 Land Use Plan

The Leelanau County General Plan Maps indicate that the project area is in an area near a rural center with residential populations. The project is not in an area that will impact any of their mapped natural features (see Appendix C). The proposed project is an expansion of an existing road and therefore will not impact the current land use in the area.

3.8 Other Values

3.8.1 Wilderness

The National Wilderness Preservation System coordinates activity on formally designated wilderness areas, defined in the 1964 Wilderness Act as "area[s] where the earth and community of life are untrammeled by man, where man himself is a visitor who does not remain" and "area[s] of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions" with other specific requirements. The closest National Wilderness Preservation area is the Sleeping Bear Dunes Wilderness located on the Lake Michigan shoreline in Benzie and Leelanau Counties (The Wilderness Society 2021). The project area has been developed and is now primarily grassy areas, roads, and road shoulders. Due to the lack of wilderness areas within or near the project area, no impacts on wilderness resources are anticipated.

3.8.2 Noise and Light

Noise is any undesirable sound that causes disturbance. Noise can be described in terms of three variables: amplitude, frequency, and time. Noice amplitude (loudness) is frequently expressed in units of decibels (dB), with the threshold of hearing ranging from 0 to 120 dB. The decibel scale is logarithmic, meaning that each increase of 10 dB represents a tenfold increase in sound intensity. For example, a whisper is around 20 dB, while a normal conversation is about 60 dB. The threshold of pain is typically considered to be around 130 dB, which is the level at which sound can cause significant discomfort or damage to hearing.

The project area is surrounded by developed land. Short-term noise impacts would include construction noise generated by trucks, excavation and erection equipment, generators, etc. No

long-term impacts associated with operation of the improved roads are anticipated; noise levels would be similar to current levels following construction. During construction, noise will increase for adjacent and nearby residential parcels, but not increase to unacceptable levels that will defy the noise ordinance of Leelanau County and Peshawbestown.

The project area is surrounded primarily by developed areas. Project construction is unlikely to cause disruption to the surrounding area.

3.8.3 Visual

The project area is along existing roads with developed areas and forest edges adjacent to the road. Primary views are multi-directional from the highest point. The road extension would be completed directly adjacent to the existing road and would be consistent with the current visual aesthetics of the area. Therefore, no visual impacts are anticipated.

3.8.4 Public Health and Safety

The proposed project would not include new residences and would not require additional resources for police, fire protection, or emergency preparedness.

3.8.5 Indian Trust Assets

On May 27, 1980, the Grand Traverse Band of Ottawa and Chippewa Indians was re-recognized by the federal government. The majority of the reservation's territory is within Leelanau County, Michigan. The federal government is the trustee for Indian Trust Assets and must manage them in the best interest of the beneficiary of the trust. According to the 2020–2024 ACS, the population on the Grand Traverse Reservation and Off-Reservation Land Trust was 541 (U.S. Census Bureau 2024).

The project would be completed using Indian Trust Assets. The project is proposed by the Grand Traverse Band of Ottawa and Chippewa Indians with the BIA acting as the lead agency. Because the Trust Assets will be used in the interest of the Grand Traverse Band of Ottawa and Chippewa Indians, less than significant impacts are anticipated upon Indian Trust Assets.

3.8.6 Hazardous Materials

Known sources of contamination were evaluated by review of federal and state online databases. The Michigan Department of Environmental Quality Environmental Mapper (Part 201, Part 211, Part 213), the Toxic Release Inventory, and the Superfund National Priorities List databases were reviewed (U.S. Environmental Protection Agency 2025, 2026b; Michigan Department of Environmental Quality 2026). No leaking underground storage tanks, sites of environmental contamination, underground storage tanks, Toxics Release Inventory sites, or Superfund National Priority List sites were identified within the project area. No known sources of hazardous materials are expected to impact the project area.

3.9 Reasonably Foreseeable Significant Effect on the Quality of Human Environment Analysis

Reasonably foreseeable significant effect on the quality of the human environment may result from individually minor but collectively significant actions occurring over a period of time.

Analyses should ensure that the full range of consequences of the Proposed Action and alternatives are considered.

The project would add to the air pollutant and noise emissions during construction activities. Exhaust emissions from construction vehicles and equipment and particulate matter emissions from surface disturbance would occur. These emissions would be temporary and localized. Construction crews would limit unnecessary idling times for diesel-powered engines and implement dust-control measures, which would reduce emissions. Construction is expected to last approximately one month, with equipment and personnel using the existing road and parking across from the Leelanau Casino as a staging area to limit impacts in the project area. The majority of project work is limited to the existing ROW of McKeese Road and M-22. Total new disturbance is less than an acre so a stormwater pollution prevention plan is not needed.

The living resource impacts for the project area have been reviewed and found to have no significant effects to protected species.

Other effects are expected to be negligible. The proposed project is located in the existing M-22 and McKeese Road ROW and the use of the roads during construction (one-lane traffic) will minimize indirect effects.

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APPENDIX A

Figures

Figure A1



M22 TO NCKEESE RD

Aerial Imagery

Area of Potential Effect

Leelanau County, MI
USGS 7.5' Quadrangle:
Omena, MI, 45085-A5
NAD 1983 StatePlane Michigan
Central FIPS 2112 Feet
45.017°N 85.6077°W

0 90 180 270 360 450 Feet
0 30 60 90 120 Meters

N

1:4,800

Base Map: Esri ArcGIS Online, accessed March 2026
Updated: 3/25/2026
Project No. 100929
Layout: Aerial
Aprx: 100929_M22_McKeese_WDR

SWCA
ENVIRONMENTAL CONSULTANTS

Figure A2



MCKEESE RD
Aerial Imagery

Area of Potential Effect

Leelanau County, MI
USGS 7.5' Quadrangle:
Omena, MI, 45085-A5
NAD 1983 StatePlane Michigan
Central FIPS 2112 Feet
45.0148°N 85.6131°W

0 40 80 120 160 200 Feet
0 10 20 30 40 Meters

N

1:2,400

Base Map: Esri ArcGIS Online, accessed March 2026
Updated: 3/25/2026
Project No. 100929
Layout Aerial
Aprx: 100929_M22_McKeese_WDR

SWCA
ENVIRONMENTAL CONSULTANTS

Figure A3



M-22 TO MCKEESE RD
Project Location

Area of Potential Effect

7.5-Minute Quadrangle Boundary

Leelanau County, MI
USGS 7.5' Quadrangle:
Omena, MI, 45085-A5
NAD 1983 StatePlane Michigan
Central FIPS 2112 Feet
45.017°N 85.6088°W

Base Map: Esri ArcGIS Online, accessed May 2026
Updated: 5/22/2026
Project No. 100929
Layout: USGS Aprx: 100929_M22_McKeeseRd_GTEC

0 1,000 2,000 Feet
0 250 500 Meters

N

1:24,000

SWCA ENVIRONMENTAL CONSULTANTS

APPENDIX B

Photographic Log



Figure B1. Project Overview from the northwest corner of the APE at the intersection of Strongheart Road and McKeese Road, looking east.



Figure B2. Project area overview from the south side of the intersection of Strongheart Road and McKeese Road, facing east.



Figure B3. Project area overview along McKeese Road, looking east-southeast. Note extreme slope and utility corridors on both sides of McKeese Road.



Figure B4. Project area overview from the intersection of McKeese Road and M-22, looking south-southwest. Pink staking in foreground represents the edge of the project ROW. Note utility lines (buried) within the ROW on the east side of M-22.



Figure B5. Project area overview along M-22, looking north.



Figure B6. Project area overview along M-22 looking south. Leelanau Casino is in the right foreground. Stakes in immediate foreground represent the edge of the proposed roadwork/sidewalk paving.

APPENDIX C

Leelanau County Master Plan

THE
LEELANAU GENERAL PLAN







Policy Guidelines for Managing Growth
In Leelanau County

Adopted 1995
With Amendments through 2019

Planning/Community Development – County General Plan:
#020–01212020 Regular Session
MOTION BY WESSELL THAT THE BOARD OF COMMISSIONERS APPROVES THE COUNTY GENERAL PLAN AS SUBMITTED (Resolution #2020-001). SECONDED BY SOUTAS-LITTLE.
Discussion – none.
ROLL CALL: WESSELL – YES; ANSORGE – YES; BUNEK – NO; LAUTNER – NO; RENTENBACH – YES; RUSHTON – NO; SOUTAS-LITTLE – YES.
AYES – 4 NO - 3 MOTION CARRIED.

Resolution No. 2020-001
Leelanau County Board of Commissioners
Resolution to Adopt the General Plan Amendment for Leelanau County

WHEREAS, the Michigan Planning Enabling Act (Act), Public Act 33 of 2008, as amended, authorizes the Planning Commission to prepare a Master Plan for the use, development and preservation of all lands in the County, and

WHEREAS, the Planning Commission prepared an amendment to the Leelanau County General Plan (General Plan) in accordance with the requirements of the Act; and,

WHEREAS, on August 20, 2019, the Leelanau County Board of Commissioners (County Board) received and reviewed the amended General Plan prepared by the Planning Commission and authorized the distribution of the Plan to the Notice Group entities identified in the Act; and

WHEREAS, the Planning Commission held a public hearing on October 29, 2019 after notice published in the Leelanau Enterprise on October 10, 2019, to consider public comment on the proposed amendment to the General Plan, and to further review and comment on the proposed amendment; and

WHEREAS, the Planning Commission approved the amendment to the Leelanau County General Plan on December 17, 2019 and made a recommendation of approval to the Board of Commissioners; and,

WHEREAS the Board of Commissioners finds that the amendment to the General Plan accurately reflects the goals and strategies for the use, preservation and development of lands in Leelanau County; and,

WHEREAS, the Board of Commissioners has asserted by resolution its right to approve or reject the amendment to the General Plan in accordance with the Act;

NOW THEREFORE BE IT RESOLVED THAT:

1) The Leelanau County Board of commissioners hereby approves and adopts the amendment to the Leelanau County General Plan for Leelanau County.

2) The Leelanau County Board of Commissioners approves the distribution of the Plan.

The amended General Plan shall be effective as of the date of adoption of this Resolution.

LEELANAU COUNTY PLANNING COMMISSION
LEELANAU COUNTY, MICHIGAN
PC Resolution No. 2019-01

PLANNING COMMISSION RESOLUTION TO AMEND THE GENERAL PLAN

WHEREAS, the Michigan Planning Enabling Act (MPEA) authorizes the Leelanau County Planning Commission (Planning Commission) to prepare a Master Plan; and

WHEREAS, the Planning Commission prepared a proposed amendment to the General Plan; and

WHEREAS, on **August 20, 2019**, the Leelanau County Board of Commissioners (County Board) received and reviewed the amended Plan prepared by the Planning Commission and authorized the distribution of the Plan to the Notice Group entities identified in the MPEA; and

WHEREAS, notice, dated **August 21, 2019**, was provided to the Notice Group entities as provided in the MPEA; and

WHEREAS, the Planning Commission held a public hearing on October 29, 2019, after notice published in the Leelanau Enterprise on October 10, 2019, to consider public comment on the proposed amendment to the Plan, and to further review and comment on the proposed amendment; and

WHEREAS, the Planning Commission finds that the proposed amendment to the Plan is desirable and proper and furthers the goals and strategies of the County;

THEREFORE BE IT HEREBY RESOLVED AS FOLLOWS:

1. **Adoption of the 2019 Master Plan Update.** The Planning Commission hereby approves and adopts the amended 2019 General Plan, including all of the chapters, figures, maps and tables contained therein.

2. **Distribution to County Board and Notice Group.** Pursuant to MCL 125.3843 The County Board has asserted by resolution its right to approve or reject the proposed General Plan. The Plan will be submitted to the County Board and will be distributed after approval by the County Board.

3. **Findings of Fact.** The Planning Commission has made the foregoing determination based on a review of the existing Plan provisions and maps, input received from the public, the Notice Group, and the public hearing, and finds that the amended Plan accurately reflects the goals and strategies for the use, preservation, and development of lands in Leelanau County.

4. **Effective Date.** The General Plan shall be effective as of the date of adoption by the County Board.

The foregoing resolution was offered by Planning Commissioner McCulloch, seconded by Planning Commissioner Nixon, at a regular meeting held December 17, 2019.

Aye: McCulloch, Nixon, Noonan, Lukomski, Winkelman, Lautner, Yoder, Goldschmidt
Nay: None
Absent: Hubbell, Miller, (Walter resigned)

The Chair declared the resolution adopted.

LEELANAU GENERAL PLAN:

Policy Guidelines for Managing Growth in Leelanau County

Principal Goal

It is the principal goal of the **Leelanau General Plan** to establish a strategy for guiding growth that protects and, where possible, enhances the unique character of life in the county. To that end, the **General Plan** focuses on balancing environmental protection, energy efficiency and renewable energy, resource management, and economic development so as to provide a foundation for a suitable economy that permits long term prosperity for all present and future Leelanau County residents.

The balance so achieved should not sacrifice environmental quality when reasonable and prudent development alternatives exist. This plan recognizes that a healthy economy depends on a healthy environment. Achievement of this goal means protecting the integrity of the land base for use by present generations without unnecessarily compromising the options of future generations.

LEELANAU COUNTY
BOARD OF COMMISSIONERS

William Bunek, Chairman
Melinda Lautner, Vice-Chair
Anthony Ansorge
Patricia Soutas-Little
Carolyn Rentenbach
Deb Rushton
Ty Wessell

LEELANAU COUNTY
ADMINISTRATION

Chet Janik
County Administrator

Laurel Evens
Executive Assistant

LEELANAU COUNTY
PLANNING COMMISSION

Victor Goldschmidt *Chairman*
Casey Nooonan, Vice-Chair
Steve Yoder, Chair Pro-Tem
Dan Hubbell
Melinda Lautner
Jessica Lukomski

David McCulloch
Robert Miller
Tom Nixon
Eric Winkelman
Matt Walter

LEELANAU COUNTY
PLANNING DEPARTMENT

Trudy J. Galla
AICP Planning Director

Gail Myer
Senior Planner

Molly Steck
Secretary

Diane Kiessel
Housing Manager

THE LEELANAU GENERAL PLAN
Policy Guidelines for Managing Growth

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DEDICATION

This General Plan is dedicated to the present and future generations of Leelanau County. The Plan is dedicated to the belief that the current residents of the County hold the County in trust, with a responsibility to pass it on to future generations in at least as good a condition as we received it from those who came before us. It is further dedicated with thanks for the generous labor, creative thoughts, and commitment of the hundreds of citizens who contributed to this effort.

LEELANAU GENERAL PLAN
Background and Summary

The **Leelanau General Plan,** created through a public process involving many hours of citizen involvement, sets forth the needs and priorities for maintaining and improving the quality of life in Leelanau County. This **Plan**, which was first approved on July 11, 1994 by the Leelanau County Planning Commission and on May 1, 1995 by the Leelanau County Board of Commissioners, has been reviewed every 5 years and undergone several updates. Timely reviews, updates, and major revisions are all necessary in order for this **Plan** to remain a relevant and useful document, that will assist in the preservation of the best and most desirable elements of Leelanau County.

The background and findings of the **Leelanau General Plan** identify development, environmental protection, and economic development as the most pressing issues facing the County.

- Uncontrolled development may erode some of the most prized elements of the County – its scenic beauty, rural character, and high environmental quality.

- Monitoring the quality of the County's water, land, and other natural resources is crucial to maintaining the high quality of life that the County currently enjoys.

- The geographic location of the County has created an economy that has difficulty sustaining year-round employment, particularly for younger residents. Coordination of economic development and adequate housing opportunities will be necessary to address this issue as the County grows.

The **Plan** recognizes that to successfully address any of these issues, a balance must be achieved between all of them. The **Plan** further acknowledges that this balance can only be achieved with coordination between multiple units of government and their citizens.

The **Leelanau General Plan** is a complex document, intended to serve as a foundation for planning . A great deal of background information, policy guidelines, and recommendations are provided to assist citizens and governments in research and decision-making in land use issues. To assist with the use of the document, the Leelanau County Planning Commission suggests that readers first familiarize themselves with the Principal Goal of the **Plan**, found at the beginning of the document and in the Preface. The Principal Goal serves as the foundation and rationale behind the policy recommendations found throughout the **Plan**.

The **Leelanau General Plan**, and its several revisions, are the result of many hours of hard work by many citizens of Leelanau County. The County Planning Commission would like to thank all those involved in the creation of this document, as well as the readers of the Plan, for their involvement in and commitment to Leelanau County.

PREFACE

INTRODUCTION

The **Leelanau General Plan** was developed with the support and guidance of citizens and representatives of all local governments in Leelanau County to offer an overview with inner consistency on the issues of future County land use. It is founded on the principle that all land use and infrastructure decisions that do not involve issues of greater than local concern should be made at the local level. These decisions should be carefully coordinated with adjacent jurisdictions and appropriate County agencies. The plan looks to a continuing partnership between the County and local units of government in the achievement of the shared vision described in this plan. The partnership can be built on mutual respect in areas of overlapping responsibilities and mutual support in areas where responsibilities are separate but compatible in pursuit of common goals and benefits. It is envisioned that future local comprehensive plans will be compatible with the **General Plan**, but more specific with regard to land use and local implementing policies.

Each local governmental unit in the County entered into a mutual agreement at the beginning of the process (1991) in the form of a memorandum of understanding (MOU), to participate with the County in the development of a general plan which would look in a coordinated manner at the issues and alternatives for guiding growth in the County.

This planning process represented an unprecedented commitment in the state of Michigan on the part of both County and local units of government. Each local government agreed to:

- participate, fully and freely, in the process by appointing one elected official, one planning commissioner, and one citizen-at-large to participate;
- communicate all suggestions via the participation process;
- participate fully in the various forums, seminars, workshops, and other meetings scheduled as a part of the process;
- accept, review, discuss, and respond to all reports, working papers, documents, etc. produced relative to the plan;
- provide without cost needed data, reports, and other information.

In turn, the County agreed to:

- coordinate and pay the costs of preparation of the County-wide growth management plan;
- conduct basic planning research and mapping.

It is hoped the **General Plan** is not merely a "County plan" even though it has been adopted by the County Planning Commission. Instead, it is intended to be a plan that affects the lives of all County residents and visitors on a daily basis. It is not intended to be as detailed as local comprehensive plans usually are, but rather to address the broader issues, and especially the multi-jurisdiction issues from a County-wide perspective.

The ultimate success of the **General Plan** largely depends on the commitment that is made to implementation. Commitment needs to come from every local government, the County, the various state and federal authorities as well as a broad spectrum of County citizens. It would be easy to ignore addressing the issue of implementation in the **General Plan**, but that would only delay discussion on this most important issue until much later, and forego several opportunities for meaningful public input. As a result, Part Three of this plan proposes an implementation strategy.

PROCESS USED TO DEVELOP THE PLAN

Broad citizen involvement was encouraged by the Citizens Advisory Committee whose opinion is reflected in the following quote from an early working paper:

"Involving people in the planning process means acknowledging that everyone has something of value to contribute. This system seeks to avoid setting up citizens, developers, environmentalists, or local governments as "the enemy". Recognition of this fundamental can change the dynamics of growth management from "us against them" to "we're all in this together".

The process followed to create this plan attempted to create a shared common vision of the future.

RELATIONSHIP TO LOCAL PLANNING AND OTHER COUNTY OPERATIONS

This **General Plan** is intended to guide the actions of the County Planning Commission and many of the priorities of the County Planning and Community Development Department. It should also play a major role in guiding public facility and infrastructure decisions by the County Board of Commissioners and other County departments and commissions (such as the Road Commission) after capital improvement programs compatible with the **General Plan** are prepared. Part Three focuses on these issues and the institutional changes that need to occur for this goal to be accomplished.

It is believed that common pursuit of the policy guidelines in this plan has led, and will continue to lead, to improved efforts to integrate and coordinate planning throughout the County. It is hoped a mutually supportive working relationship between the County and local units of government can build from the positive experience achieved by the many local government officials and citizens who significantly participated in the development of this plan.

GENERAL PLAN UPDATES

The **General Plan** is founded on mutually supportive relationships in pursuit of mutual goals. To ensure that these relationships and goals remain mutual, it is important to periodically reexamine the plan and update it. The Plan advocates the preparation of annual reports to document actions taken to implement the plan as well as the preparation of annual work programs and budgets. The **General Plan** is reviewed every five years to ensure it continues to reflect a common vision for the future of Leelanau County. In 2017, in preparation for a new update, a Planning Questionnaire was developed by the County Planning Commission and released for Leelanau County residents to complete. Some of the results from that 2018 Leelanau County Questionnaire (2018 Questionnaire) are included in this update. Of particular significance, 96% of responders from the 2018 Questionnaire felt that housing availability and the cost were important, followed by wage and the ability to earn a living. When asked what the most important qualities of Leelanau County were, over 96% felt the scenic views were important, followed by access to Lake Michigan and inland lakes.

PERSPECTIVE

The **Leelanau General Plan** assumes future growth will occur at about the same rate in the next 20 years as in the recent past. At the present time, the most significant economic development activity in the County is neither agriculture nor tourism (the mainstays of the economy for decades); rather, it is the construction of new single family homes.

Much of this development has been on large lots scattered along existing roads throughout the County. If the low density residential sprawl pattern of most of the growth in the last three decades continues, however, it will destroy the present character and traditional economic vitality of the County. Each new dwelling on prime orchard or forest land not only permanently converts that land out of renewable resource use, but also creates a new public service burden and contributes to rising taxes on the farmer -making it more difficult for the farmer to stay in business.

PRINCIPAL STRATEGIES

The **General Plan** proposes a compact land development pattern that protects renewable resource lands (such as orchard land and forests) as well as sensitive natural resources (like wetlands and dunes). It proposes policies to encourage location of future land development in and near existing villages, as well as near Traverse City. It proposes infrastructure management policies to achieve and reinforce this land use pattern. It encourages open space protection, while simultaneously permitting large landowners an opportunity to capture the development value of their land. Open space zoning and rural clustering techniques are also proposed to encourage new development in rural areas to be sited so as to minimize visual impacts on the landscape and to minimize public service costs.

The plan proposes measures to protect the small-town, rural character of County villages and the scenic qualities of the major road corridors. Using naturally occurring vegetation for landscaping, minimizing signs, burying utilities, placing parking at the side or behind commercial buildings are all measures proposed to retain the existing character in the County.

More specifically, the plan proposes an environmental protection strategy that also:

- Identifies and avoids development near sensitive environments.
- Protects water quality of surface water and ground water.
- Minimizes land fragmentation of large parcels.
- Links open spaces.
- Restricts keyhole development.
- Protects renewable resources.

The plan proposes widespread acceptance by citizens of a stewardship ethic that views land not as an asset to be exploited, but rather as a resource held in trust for future generations for use by the present generation.

Citizens and local government officials basically have two choices: maintain the status quo and accept a diminished quality of life or change destructive development patterns. This **General Plan** advocates the latter.

The **General Plan** is neither a slow growth nor an anti-growth plan. It calls for balanced growth that is carefully guided to protect and enhance the quality of life in the County. It accepts the principle that environmental protection and economic development are not incompatible objectives.

It recognizes that a healthy economy depends on a healthy environment. To these ends the following strategy is proposed:

- Curtail sprawl and encourage compact development.
- Protect and enhance the existing economic base.
- Create new year-round jobs.
- Guide new development where public services are adequate or efficiently added.
- Phase future growth.
- Seek to achieve a better balance between the location of job/ housing/transportation.e
- Protect agricultural operations
- Protect sand and gravel resources.
- Address equity concerns of large landowners in the implementation of development regulations.
- Improve educational opportunities.
- Improve health and human services.

The General Plan proposes a compact land development pattern that protects renewable resource lands (such as orchard land and forests) as well as sensitive natural resources (like wetlands and dunes).

Additional tools to be used to better manage growth include:

- Concurrency requirements so new development occurs after necessary public facilities are in place (not before).
- Village and rural service districts to define what services will be available where and when.
- Capital improvement programs to better guide development of new public facilities.
- Development of a County-wide map to identify the location of all new future public facilities.
- Development of impact assessment procedures and checklists.
- Development of model local ordinances.
- Further enhancements in the County Planning and Community Development Office's data center function and Geographic Information System.

The plan recognizes special needs for affordable housing and jobs among a growing segment of the year-round residents. It also recognizes the growing economic disparity between persons of different age and income classifications.

The **General Plan** recognizes important roles for the County in the provision of:

- Data
- Maps
- Coordination and communication
- Technical assistance
- Model plans and ordinances
- Capital improvement programming
- Conflict resolution

- Training
- Limited financial support and encouragement of local planning
- Assistance in passage of new legislation to improve the range of available tools to manage growth.

A list of the principal issues in which guidance from this plan is likely to be sought are presented below.

- As the basis for more detailed township and village plans and development ordinances.
- As a framework for private investment in the County.
- As an aid to village, township, and County public facility and infrastructure decisions.
- As a guide to the County Planning Commission in fulfilling its responsibility to review proposed pubic facility expenditures, and township plans and zoning amendments.
- As a guide in improving protection of air and water quality.
- As a guide to improved long term resource management decisions, especially with regard to renewable resources, critical plant and animal habitats, and sensitive environments.
- As the basis for joint village/township/County grant utilization activities.
- As an organization plan for County program expenditures.
- As a means of facilitating intergovernmental cooperation (e.g., with not only the County and local units of government, but also with area schools, the National park Service, the Soil Conservation Service, the Grand Traverse Band of Ottawa and Chippewa Indians, MDOT, Benzie and Grand Traverse Counties, etc.).
- To define issues of greater than local concern and establish appropriate mechanisms to deal with those issues.

CITIZEN BENEFITS OF THE PLAN

If implemented as presented, this plan will benefit the average citizen in the following ways:

- Infrastructure and public services will be incrementally provided in compact areas as needed, rather than spread widely across much of the County.
- Owners of agricultural and forest land will have improved opportunities for success due to reduced pressures from non-farm residences and will have new opportunities to capture the development value of their land without dividing and selling it for residential development.
- There will be many different types of housing opportunities to meet the needs of young and older families, “empty nesters”, retirees, and persons with special needs.
- There will continue to be large expanses of orchards, woods and other open spaces across the County for many years to come.
- The unique beauty of the County will continue to be largely maintained.
- Sensitive natural features like wetlands, floodplains, dunes, and unique plant and animal habitat will receive greater protection over time, increasingly through acquisition of key properties by land conservancies.

- New jobs will be encouraged in areas where public services are available and adequate to meet needs.
- Local and County governmental agencies will more closely coordinate planning and the provision of other public services to eliminate unnecessary overlap, gaps and inefficiency.
- Public services will be adequate to meet the needs of a diverse population.
- Developers will find, over time, greater uniformity in local land use regulations across the County.
- Development of coordinated planning objectives and ordinances between and among all the local jurisdictions will greatly benefit all because conflicts and variations will be reduced. Such a concept should in no way affect the autonomy of local governments with respect to implementing their ordinances. Compatibility throughout the County, however, will enhance the character, future growth, development, and economic well being of constituencies of the County. Such consistency will add legal strength by minimizing challenges and interpretations.

ORGANIZATION OF THE PLAN

The **General Plan** is organized into three major parts. Part One examines issues from a County view. It presents a comprehensive description of the character of Leelanau County and the key policy guidelines proposed to protect and enhance the quality of life in the County. Part Two takes a traditional "functional" view of issues and proposed policy initiatives to address them. Specific policies and action statements generated from extensive citizen input in seven functional areas (such as land use, transportation, natural resources, etc.) are presented to supplement and support the general growth management strategy presented in Part One. Part Three presents the structure for and major efforts to be initiated to implement the **General Plan.** It includes a proposed institutional structure for planning decisions and identifies the actions that should be taken to implement the **General Plan.**

PRINCIPAL GOAL

The major purpose of the **General Plan** is to record a consensus based growth strategy developed over several years. It is intended for joint use by Leelanau County and local governments within the County in making coordinated and mutually supportive future land use, infrastructure and public service decisions.
It includes policy guidelines and a brief description of key planning tools to achieve the following goal:

"It is the principal goal of the **General Plan** to establish a strategy for guiding growth that protects, and where possible, enhances the unique character of and quality of life in the County. To that end, the **General Plan** focuses on balancing environmental protection, energy efficiency and renewable energy, resource management and economic development so as to provide a foundation for a sustainable economy that permits long term prosperity for all present and future Leelanau County residents. The balance so achieved should not sacrifice environmental quality when reasonable and prudent development alternatives exist. This plan recognizes that a healthy economy depends on a healthy environment. Achievement of this goal means protecting the integrity of the land base for use by present generations without unnecessarily compromising the options of future generations."

FIVE POLICY GUIDELINES FOR MANAGING GROWTH IN LEELANAU COUNTY

Policy Guideline: Intergovernmental Cooperation
A partnership founded on mutual respect and mutual support in achievement of the common goals of this **General Plan** should guide the development and implementation of new relationships between the County and local units of government in the County and between the County and adjoining counties in the region.

Policy Guideline: Preservation of County Character
The existing natural and people-made features in the County that make up its rural character are interdependent with the activities that comprise its economic base. It is important therefore, that future land use change in the County enhance, not undermine the character of the area around it, and in so doing contribute to protection of the unique rural character of the entire Leelanau County.

Policy Guideline: Working with Nature
Extensive and diverse sensitive natural features found throughout provide the foundation for the present and the future quality of life in the County. They should be protected where pristine, restored where damaged, and have access and use managed for long term sustainability.

Policy Guideline: Balanced Growth
New residential, commercial, and industrial development in the County is encouraged provided it is: 1) in locations with public services adequate to meet its needs, 2) environmentally friendly, 3) consistent with the character of development in the area, 4) consistent with local plans and regulations, and 5) compatible with the guidelines of this **General Plan**. In the implementation of this policy guideline, both the County and local governments would seek to ensure over time, that all the health, safety, and general welfare needs of its citizens that can be reasonably met are accommodated with a variety of land uses in the pattern proposed and in a manner which does not unnecessarily compromise options for future generations.

Policy Guideline: Managed Growth
Local comprehensive plans and local development regulations (including for example, zoning and subdivision regulations) should be updated and thereafter maintained, to include goals, objectives, policies and strategies for managing future growth compatible with the **General Plan**. Local plans should include more specific land use and density proposals at the parcel-specific level. Local regulations should focus on design and other issues of local significance. Public facilities should all be constructed according to local capital improvement programs that are coordinated at all governmental levels in the County.

Chapter 1

INTERGOVERNMENTAL COOPERATION AND REGIONAL CONTEXT

POLICY GUIDELINE:
INTERGOVERNMENTAL COOPERATION

A partnership founded on mutual respect and mutual support in achievement of the common goals of this **Leelanau General Plan** should guide the development and implementation of new relationships between the county and local units of government in the county and between the county and adjoining counties in the region.

The preface includes a description of the history of the efforts which led to the creation of the first **General Plan** in 1994. A key opinion of many citizens and local officials in the county was that the usual historical approaches to planning in the County had not achieved a desirable result.



Timberlee area in Elmwood Township

ISSUES OF GREATER THAN LOCAL CONCERN

Issues of greater than local concern are public interests that are broader than simply local interests. These include (but are not limited to) the following. Some are illustrated on page 1-5 (see Figure 1-1).

- air quality protection.
- watershed management for water quality protection.
- groundwater and well-head protection.
- habitat preservation for sustainable fish and wildlife populations.
- protection of unique and endangered species.
- protection of sensitive environments (wetlands, dunes, floodplains, high risk erosion areas, etc), especially the large contiguous ecosystems like the Solon Swamp, the Crystal River, Sleeping Bear Dunes.
- resource protection necessary to sustain resource-based industries such as agriculture and forestry.
- sustainable economic development to provide jobs for present and future residents.
- loss of open space and scenic views along key corridors.
- harbors
- key holing on lakes which lie in multiple jurisdictions.
- use of public access sites.
- establishment of new public parks and access sites on waterfronts.
- existing public parks (national, state and local).
- safe, efficient and environmentally sound roads and highways connecting our communities.
- public sewer and water services.
- infrastructure serving more than one community, or being extended farther than necessary.
- land use along municipal borders.

- LULU's (locally unwanted land uses that meet a regional need, such as gravel pits, junk yards, landfills, towers, etc.).
- solid and hazardous waste disposal and recycling centers.
- public economic development initiatives.
- affordable housing.
- needs of the handicapped, children, the elderly, and other special populations.
- adequate social services for citizens with temporary or special needs.
- adequate educational opportunities for all citizens.
- a sovereign nation within the county making independent land use decisions.

In many instances, these broader public interests revolve around common environmental features (which do not respect municipal boundaries), infrastructure, and the needs of special populations.

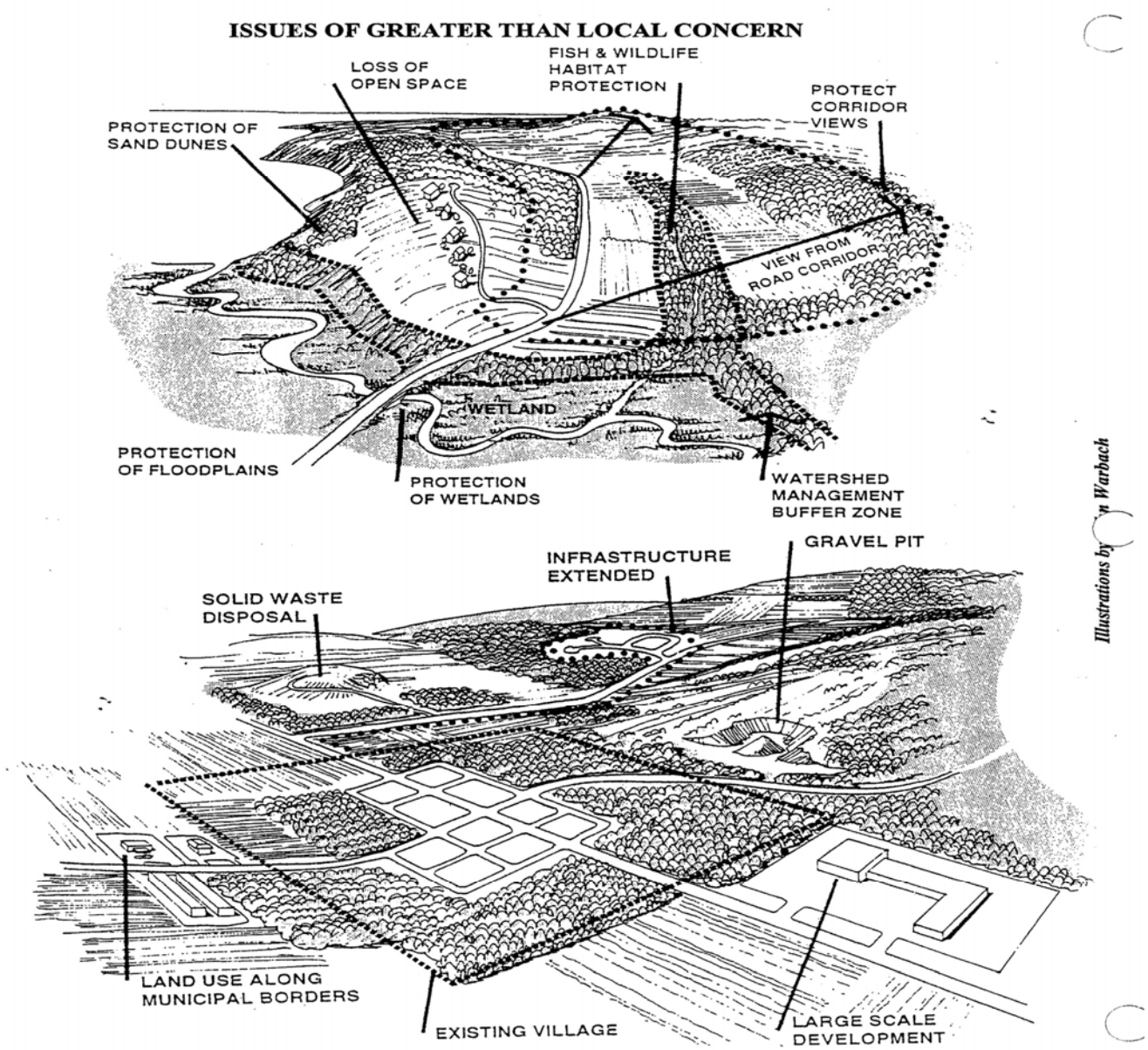
If the mutual goals of this **General Plan** are to be achieved, it will take the coordinated efforts of all units of government working together to achieve them. Strong intergovernmental cooperation founded on mutual respect and mutual support in achievement of the common goals of this **General Plan** is fundamental to a better future for Leelanau County.



Birdseye view of Glen Arbor Village

Future local comprehensive plans in villages and townships in the county will relate to the **General Plan**, but will be more specific with regard to land use. They will also be tied to implementation via local zoning and subdivision regulations and focused on protection of local quality of life. Local plan relationship with the **General Plan** will be the focus of the County Planning Commission's review as required by the Michigan Planning Enabling Act.

Figure 1-1


ISSUES OF GREATER THAN LOCAL CONCERN
LOSS OF OPEN SPACE
FISH & WILDLIFE HABITAT PROTECTION
PROTECT CORRIDOR VIEWS
PROTECTION OF SAND DUNES
VIEW FROM ROAD CORRIDOR
WETLAND
PROTECTION OF FLOODPLAINS
PROTECTION OF WETLANDS
WATERSHED MANAGEMENT BUFFER ZONE
GRAVEL PIT
INFRASTRUCTURE EXTENDED
SOLID WASTE DISPOSAL
LAND USE ALONG MUNICIPAL BORDERS
EXISTING VILLAGE
LARGE SCALE DEVELOPMENT
Illustrations by n Warbach

Chapter 2

PRESERVATION OF COUNTY CHARACTER

The character of Leelanau County is a mixture of farms, orchards, forests, sand dunes, wetlands, rivers, lakes, bays hills, valleys resorts and villages.

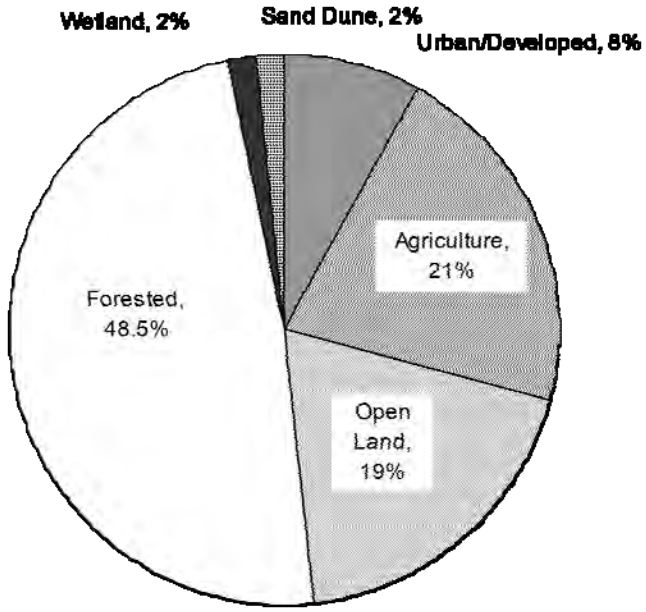
POLICY GUIDELINE:
PRESERVATION OF COUNTY CHARACTER

The existing natural and people-made features in the county that make up its rural character are interdependent with the activities that comprise its economic base. It is important therefore, that future land use change in the County enhance, not undermine, the character of the area around it, and in so doing contribute to protection of the unique rural character of the entire County.

DESCRIPTION OF COUNTY CHARACTER

Leelanau County can be described in many ways. In purely numerical terms, it is nearly 21% agricultural land, 48% wooded land, 19% open land, 2% wetlands, 2% sand dune/barren land, and 8% urban land. The pie chart below illustrates the land use/cover relationship in 2000. (See Figure 2-1).

Figure 2-1
Leelanau County Land Cover, 2000



Leelanau County has a rural character that is much more than mere numbers can adequately convey. The outstanding quality of Leelanau County is its unusually varied topography. As the photos throughout this plan illustrate, it is a County of significant natural beauty. It is the home of a major national park and of a state park. It is a place of special scenic quality and opportunity for pleasure in the out-of-doors.

> **When asked in the 2018 Planning Questionnaire 'What are the most important qualities of Leelanau County"? - a large percentage of all survey respondents identified water quality (86%) and access to Lake Michigan and inland lakes (75%) as very important qualities of Leelanau County. These two characteristics ranked the highest for both student and non-student questionnaire respondents.**

Visual character is the image one retains from looking at a landscape. This image is made up of many parts. It is the architecture of homes and businesses in an area. It is also the shape of hills, valleys, and shorelines. It is how much the forests close in on the roads or how the fields are open. It includes the species of trees in the forests and the type of crops in the fields. Roads, too, are an important component: are they straight or curved, wide or narrow, and are there curbs and sidewalks on the residential streets?

The visual character of a community is important. It is more than just what buildings or landscapes look like. Visual character "sticks" in people's minds. It is a very important part of what attracts people to an area to live, invest, or vacation.

Familiar landscapes are important image guideposts people use in finding their way in daily activities. Change in the landscape can become a big issue because it affects a person's daily life by changing surroundings that were once familiar into suddenly unfamiliar settings.

High dune and glacial ridges form the major land features of Leelanau County (see Map 2-1). These ridges generally run north to south. There are small pocket valleys between the ridges, as well as broad slightly rolling plateaus in the center of the County. Rolling plains are farms along the shoreline in the area of Northport. High points on the ridges are landmarks because of the striking views they provide to the inland lakes, Lake Michigan or Grand Traverse Bay. For example, the view to the north and west from the hill crest of Town Line Road is a panoramic view of Lake Michigan and the Manitou Islands that serves as both a beautiful view and as an orientation landmark. Because the ridges are highly visible, they need to be considered as sensitive visual environments. Development can easily change them.

Most of the County is a checkerboard of woodlots, pastures or meadows, active crop fields, orchards and water. There are few routes where forest borders the roads for more than a half mile, nor where open fields stretch for more than a mile without encountering another woodlot. There is more wooded landscape than open field.

Landscape Districts

The visually similar areas in Leelanau County are: (see Map 2-2).

West-Bay Shore Drive (M-22) from Greilickville to Omena. This is a narrow band of water-front houses on the east side of the road and largely abandoned agricultural fields on the west that are being converted to large-lot residential use. There are occasional wooded areas and strip residential lots. The West Grand Traverse Bay is intermittently visible almost the entire length of this area.

The central County farms. A broad sweep of crop fields and pastures stretch from the southeast part of the County to the north central part of the County. The south central County farms are characterized by more traditional farms, fewer orchards. Extensive sand and gravel extraction activities also exist in the southwest portion of this area.

Ridge-top farms. These are farms and orchards along both sides of the south arm of Lake Lee-lanau that are perched high on the ridges, and command long views.

Southwest forest and open valleys. In the southwest part of the County the hills are wooded and there are fewer farms and open fields. There are a few valleys that have been farmed, and are now largely meadows. This area extends from Bohemian Road (CR 669) to Empire north along Lake Michigan to beyond Leland.

Rolling dry dunes. In this area north of Leland to about Johnson Road there are open grassy fields on the hills and pockets of cedar and aspen in the wetter hollows. Between Manitou Trail (M-22) and Lake Michigan deciduous forest cover is fairly complete.

Northport woods. In this area to the south and west of Northport the deciduous forest is still largely intact, so that there are few open views.

Northport flats. The area north of Northport is flat compared to the rest of the County. There are large open fields, and large conifer plantations. Patches of deciduous forest remain near the water on both sides of the County's tip.

Lee Point to Stony Point. This area of rolling farms, orchards and woods jut out into Grand Traverse Bay. However, because of the dense bay-side vegetation and high bluffs along much of the water's edge this area is more isolated from views of the water.

Sleeping Bear Dunes National Lakeshore. A United States national lakeshore located along the northwest coast of the Lower Peninsula of Michigan in Leelanau and Benzie Counties near Empire Michigan.

Water is an important feature of Leelanau County, both because the Great Lakes shape the County, and because of the many lakes, streams, and wetlands within the County. Big and Little Glen Lakes and Lake Leelanau are the largest lakes in the County. Numerous smaller lakes, usually associated with wetlands, are scattered throughout the County. Villages, small towns and crossroads get their character from the style of architecture, the nature of businesses, and the layout of streets. All the towns and villages in Leelanau County are small. Each has a small grid street pattern, making the location of businesses and homes easy. Suttons Bay has alleys behind the houses of many streets, reducing conflicts between pedestrians and cars, and between cars on the streets and those backing out of driveways.

Buildings throughout are generally small scaled. Few buildings are of large mass or over three stories in height.

Architectural styles are most often of five basic types. One is the agricultural, which includes farmhouses, barns and other outbuildings, and pole barn-type sheds and small processing facilities. A second is an old resort type. These are generally painted one or two-story clapboard Cape Cod, Victorian, salt box, vertical or horizontal log, or mixed small lakefront cottages. A third is the contemporary natural finish wood structure. Large and small lakefront homes as well as commercial buildings are now being built in this angular style. A fourth is the suburban ranch home that is built on lakefronts, subdivisions, and in strip residential areas along County and state roads. These are often brick, wood or vinyl clapboard siding or a combination. The fifth is the eclectic contemporary, or the contemporary from some other region. These are structures such as concrete-block and painted metal grocery stores and mansard-roofed banks.

MAJOR CHALLENGES

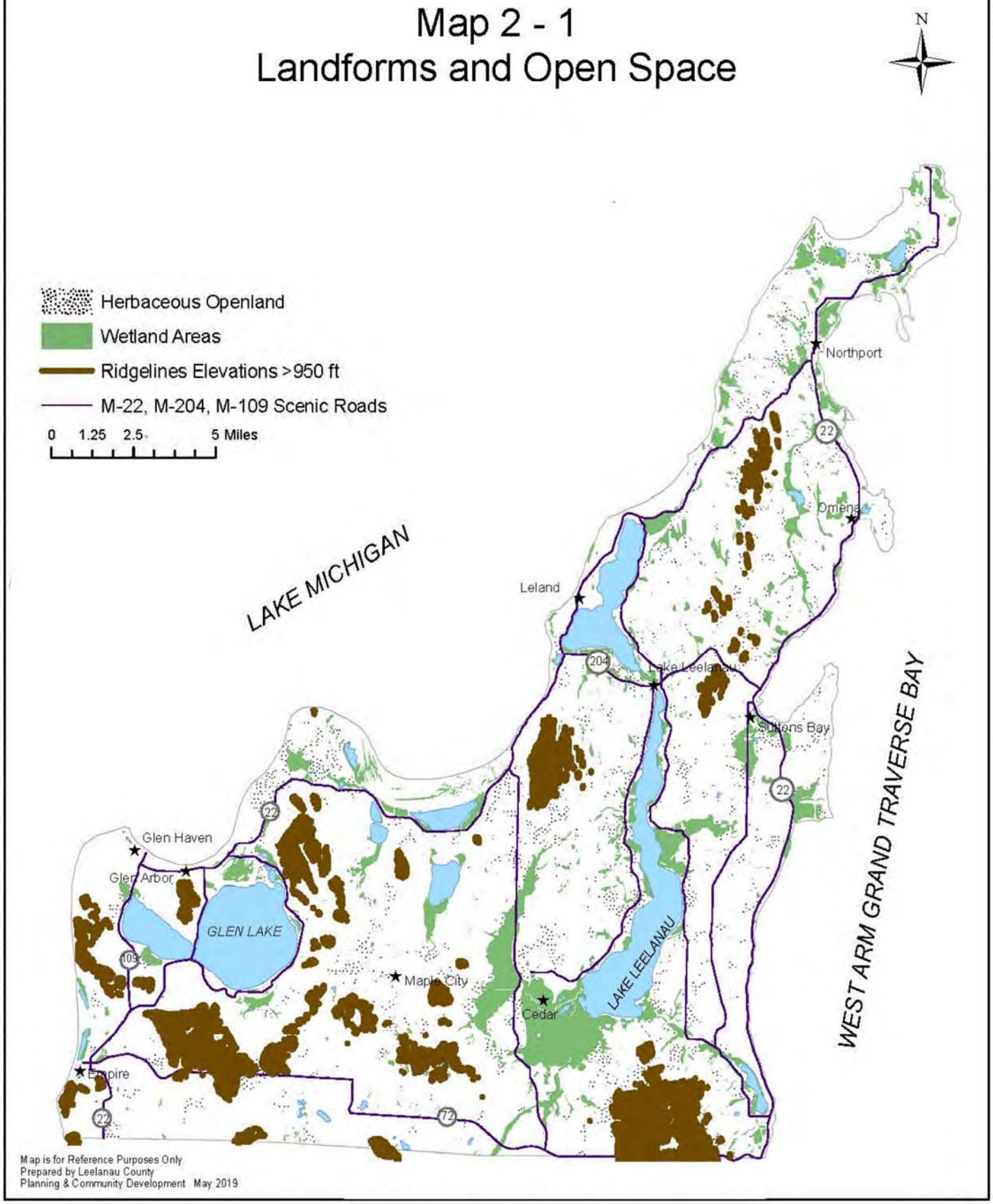
The rural character of Leelanau County is treasured by its residents and visitors. The rural character is a driving force of its tourist economy.

The major challenge to the future quality of life in the County is continuation of the current land use pattern. The current development pattern can be described as low density sprawl. It is characterized by the fragmentation of large parcels into lots of between 1 and 20 acres in size with frontage on a County road primarily for use as the site for a single dwelling. These changes are occurring largely because local plans and zoning regulations not only permit them, but encourage them through so-called "large lot zoning" practices. These changes seem to be slow but are insidiously changing the rural character of the County in ways that have serious cumulative effects.

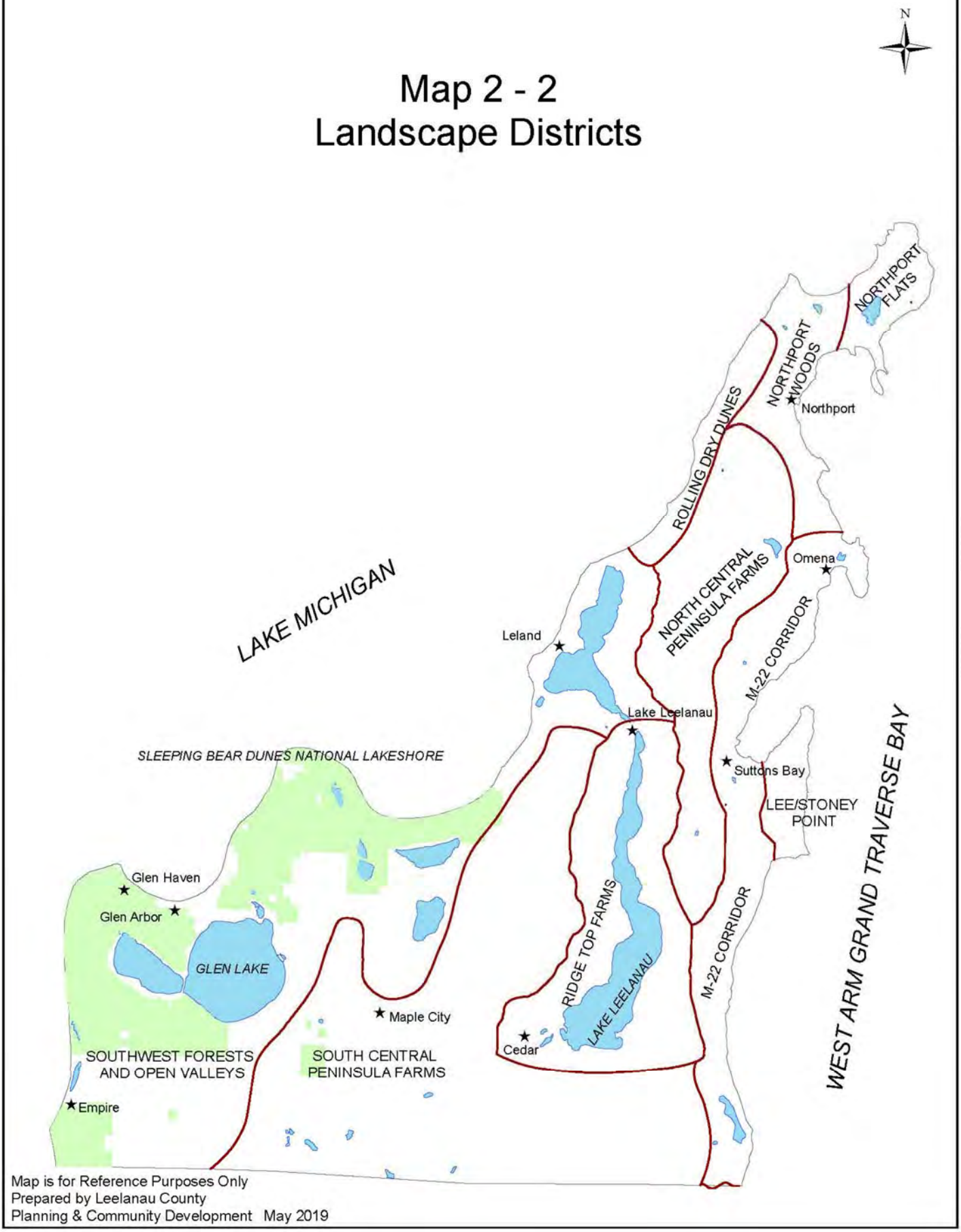
Some of the negative effects of the current land use pattern are listed below:

- renewable resource lands (such as prime farm and forest lands) are being destroyed probably forever.
- the agricultural economy of the County is being seriously diminished.
- a future public service quandary is being created.
- open space and scenic vistas are being destroyed.

Map 2 - 1
Landforms and Open Space



Map 2 - 2
Landscape Districts



Map is for Reference Purposes Only
Prepared by Leelanau County
Planning & Community Development May 2019

In short, these changes are cumulatively undermining the very unique character that makes the County so attractive to permanent and seasonal residents, as well as to tourists, (and hence undermines the tourist economy.

The pressure to fragment rural lands and convert them from agricultural or forested cover to residential use stems largely from regional population and employment growth. The beautiful and varied landscape of the County and the reasonable commuting time to other employment centers outside the County contribute to the market pressure. Unfortunately, each new dwelling on prime orchard or forest land not only permanently converts that land out of renewable resource use, but also creates a new public service burden and contributes to rising taxes on the farmer—making it more difficult for the farmer to stay in business.

New dwelling unit activity skyrocketed between 1980 and 2000 with over 4,200 new dwellings constructed. Between 2000 to 2010 1,468 new dwellings were constructed and 964 new dwellings were constructed between 2011 and 2018. Much of this development activity was on large lots scattered throughout the County. Most of it was not in subdivisions with traditionally sized lots.

The number of projected new housing units is estimated to remain high. The long term impacts on the character of the County, on public service costs and on the economic viability of resource based lands, will vary dramatically based on where, and if these new dwelling units are constructed. For example, if all the homes were on lots in twenty new 150 unit subdivisions within or contiguous to existing villages, the community character impacts would be far, far less than if they were spread on large lots across the County, and much less land would be consumed for new dwellings. In contrast, employment – in terms of both the labor force and the number of new jobs – does not grow as quickly as the population, due to the large number of retirees and residents that commute outside the County. Thus, far fewer acres of land are needed to accommodate new commercial and industrial development.

From 1940 to 2000 the population in Leelanau County increased 150% (See Figure 2-2. The increases, however, were much greater in the townships than in the villages. For example, the population of the Village of Northport increased by only 7%, while Elmwood Township's population increased by 442%. The 2000 population was 21,119. The County's population grew by about 3% per year since 1990. The base population was expected to grow by another 28%, to 27,032 persons by the year 2010. (See Figure 2-3). From 2016 to 2017 the population in Leelanau County decreased 0.9% (See Figure 2-3).

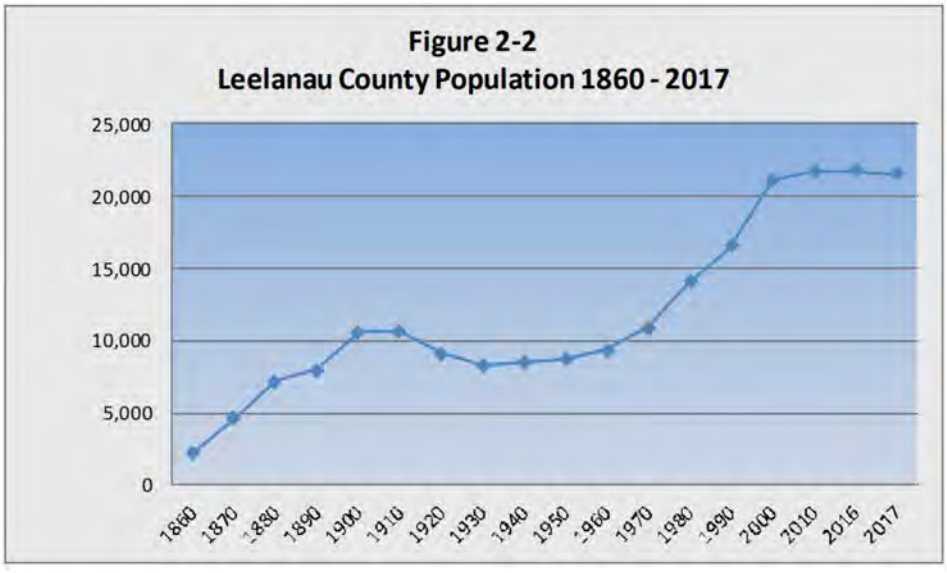
Population increases anticipated for the 2000-2010 decade did not occurr primarily because of the economic downturn experienced in the later part of the decade and slower than anticipated overall growth in the Grand Traverse Region. The population of Leelanau County grew only by 2.8% from 2000 to 2010 with a 2010 Census population of 21,708. The highest percentage increase was the area in Elmwood Township which is a part of the City of Traverse City. This area saw a 28.9% increase in population with Centerville Township next at 16.4% increase. The biggest loss in population was the Village of Northport with 18.8% decrease in population. Empire Village also decreased by .8% while Suttons Bay Village saw an increase of 4.9% in population during this period. The 2020 population estimate for Leelanau County is 22,200. (Michigan.gov)

While the population of the County has only increased slightly between 2000 and 2010, there has been several significant population shifts within the County.

The first and most significant is the population reduction in the northern most township in the County that includes the Village of Northport. Additionally, there was essentially no change in population in the two townships that immediately abut Leelanau Township. Major development that would have appreciably increased the population, that were planned for this part of the County, have been cancelled, stalled or deferred. As the economy rebounds and economic activity in the Grand Traverse region increases it is expected that these population decreases will ultimately be reversed.

The second significant population shift in the County, and one that was anticipated, is in the area immediately abutting Traverse City. Significant increases have been seen in Elmwood Township and to a lesser extent in Bingham Township continuing the pattern of suburbanization of these areas.

The third significant population shift, and one that is potentially resulting in additional significant "large lot" fragmentation, is the increased population in Centerville Township.



The last significant population demographic shift is the "Graying" of the County's population. The average age of the County's population increased by almost 8 years during the decade. This demographic shift may result in the required delivery of increased senior citizen services, increased transportation, public and special, and a potential shift to more multi-unit housing options from predominantly single family housing.

VISUAL CHARACTER ETHIC

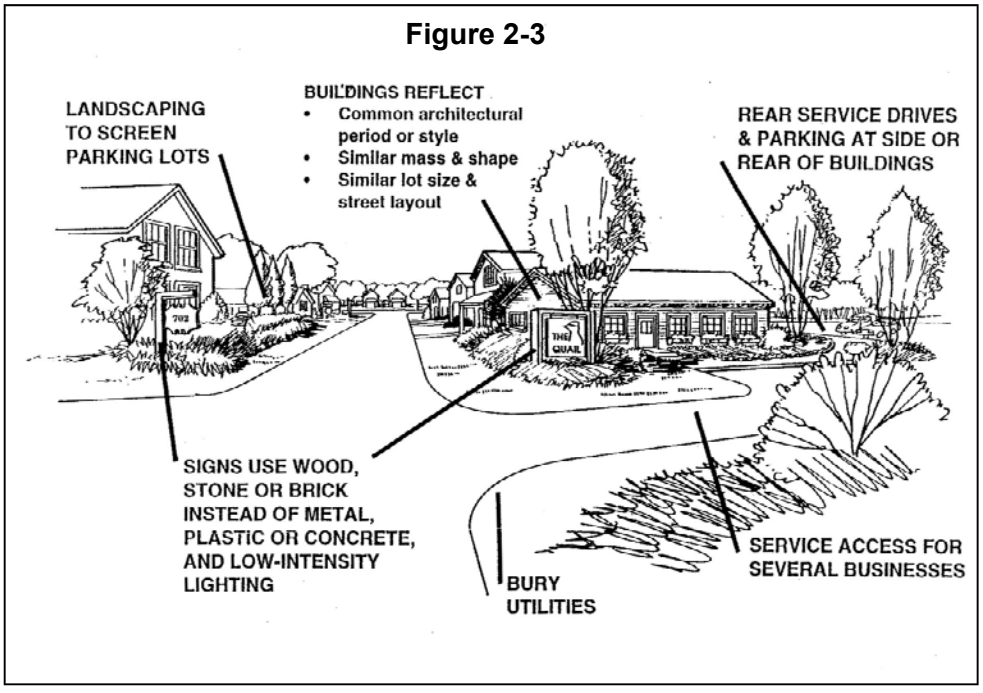
It is most desirable for the rural visual character of the landscape to remain after growth accommodates increases in population and development. County citizens have indicated they do not want the landscape to take on a suburban or urban ornamental character, or the natural and rural character will be lost. The bays, lakes, rivers, streams, ridges, and rolling terrain along with woods and farms that drive the economy of the County and contribute to the sense of identity of its citizens must be protected. Almost everyone feels a right to see, enjoy, and seek to help protect these resources. Protection of the unique rural character of the County needs to become a fundamental part of all future planning and development decisions.

A STRATEGY TO PROTECT VISUAL CHARACTER

The protection of scenic values can be accomplished through a variety of choices including (see also Figure 2-4):

- Building most new dwellings in villages and subdivisions rather than on large rural lots.
- Setting aside open land, or placing development where it has the minimum visual impact.
- Clustering residential, commercial, and industrial development to retain open space.
- Using plantings with predominantly naturally occurring species on areas visible from roads.

Figure 2-3



- Retaining naturally occurring vegetation to the maximum extent possible.
- In building, sign and other construction, lean toward using materials such as wood, stone, or brick rather than metal, plastic, or concrete. Muted, rather than bright colors seem to suit the north country lakes, woods, and traditional farms and villages
- Using Form Based zoning.

Pleasing, rather than chaotic views, along roads can be accomplished by:
- Reducing the size and number of signs.
- Burying utilities or routing them away from the street.
- Enhancing parking lots with landscaping.
- Using service drives and alleys to limit curb cuts.
- Placing parking behind or beside buildings, but not in the front yard.

The character of villages should be kept intact. Key aspects of village character include:
- architectural period and style
- mass and shape and elevation
- material and color
- lot size and street layout.
- Form Based zoning

At night, the stars should be visible in the sky - not obstructed by diffuse light from the built-up environment.

Future quality of life on the County will depend to a great extent on the degree to which the particular rural character of the County has been protected. Much of the local economy will depend on it. The sense of satisfaction residents have with their community will depend on it. Protective measures are not incompatible with additional growth because the issue is not whether or not to grow, it is where and how. It is most important to focus efforts on encouraging new development in and adjacent to existing villages, protection of existing village character, while protecting agricultural lands and other open spaces. Protection of the visual character of these areas will provide both long term economic benefits and quality of life benefits to both residents and visitors now and for many years to come.

Chapter 3
WORKING WITH NATURE



Birdseye view of the Cedar swamp and river

POLICY GUIDELINE:
WORKING WITH NATURE

Extensive and diverse sensitive natural features found throughout the County provide the foundation for the present and the future quality of life in the County. They should be protected where pristine, restored where damaged, and have access and use managed for long term sustainability.

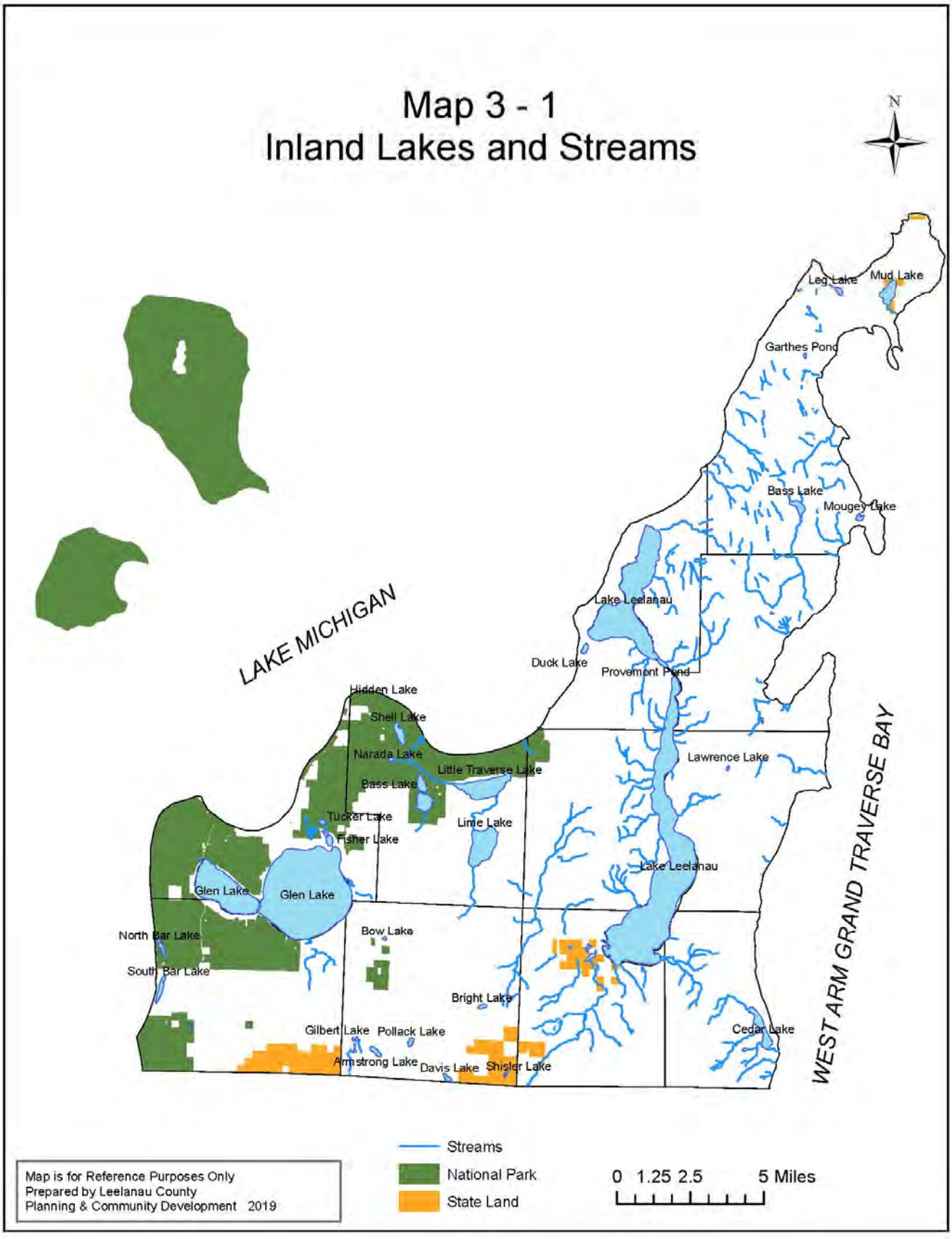
ENVIRONMENTAL FEATURES

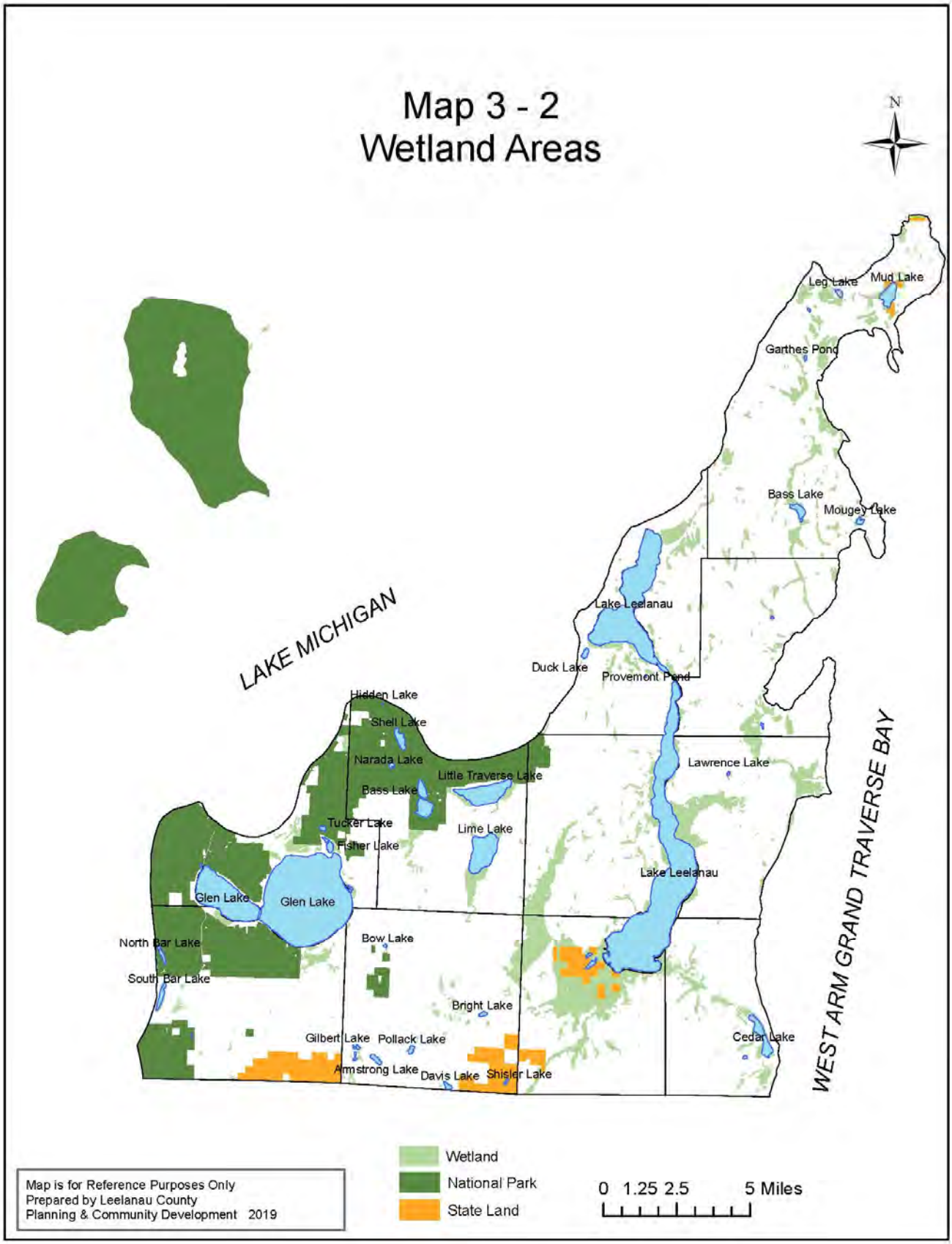
The natural environment of Leelanau County is of exceedingly high quality. All but two short stretches of streams fail to provide the oxygen and low temperatures for trout. Most of the lakes are either oligitrophic or mesotrohic (a measure indicative of high water quality, and clarity). Wildlife is abundant. Dunes have world class ranking. Significant land areas are in federal or state ownership to protect natural characteristics. See Maps 3-1 and 3-2.

ENVIRONMENTAL CHALLENGES

The natural environment in Leelanau County is at risk. While air quality is still good, ozone levels are rising due to contaminants brought from elsewhere (presumably southern Lake Michigan communities). Groundwater is extremely sensitive to contamination due to very sandy soils and *42* sites are now officially on the Act 201 list of contaminated sites in Leelanau County. This is an increase from 35 sites in 1994. Small incremental wetland fills continue to reduce wetland areas. Land fragmentation is cutting into farm and forest lands, and subsequent residential development is reducing animal habitat and hence biological diversity. About 2,540 acres of land were converted to urban between 1990 and 2000. Wildlife corridors and linked open spaces are being lost (except on federal and state land). The lack of proper septic system maintenance and uniform stormwater management regulations poses threats to water quality in lakes and streams from nutrients, sedimentation, and other pollutants.

Local plans and zoning regulations vary greatly in the degree to which environmental concerns are addressed. Local land use decisions often do not fully apply the environmental protection standards already included in existing ordinances.


Map 3 - 1
Inland Lakes and Streams
N
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Leg Lake
Mud Lake
Garthes Pond
Bass Lake
Mougey Lake
Lake Leelanau
Duck Lake
Provemont Pond
Hidden Lake
Shell Lake
Narada Lake
Little Traverse Lake
Bass Lake
Tucker Lake
Fisher Lake
Lime Lake
Lawrence Lake
Lake Leelanau
Glen Lake
Glen Lake
North Bar Lake
South Bar Lake
Bow Lake
Bright Lake
Gilbert Lake
Pollack Lake
Armstrong Lake
Davis Lake
Shisler Lake
Cedar Lake
Streams
National Park
State Land
0 1.25 2.5 5 Miles
Map is for Reference Purposes Only
Prepared by Leelanau County
Planning & Community Development 2019


Map 3 - 2
Wetland Areas
N
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Leg Lake
Mud Lake
Garthes Pond
Bass Lake
Mougey Lake
Lake Leelanau
Duck Lake
Provemont Pond
Hidden Lake
Shell Lake
Narada Lake
Little Traverse Lake
Bass Lake
Tucker Lake
Fisher Lake
Lime Lake
Lawrence Lake
Lake Leelanau
Glen Lake
Glen Lake
North Bar Lake
South Bar Lake
Bow Lake
Bright Lake
Gilbert Lake
Pollack Lake
Armstrong Lake
Davis Lake
Shisler Lake
Cedar Lake
Wetland
National Park
State Land
0 1.25 2.5 5 Miles
Map is for Reference Purposes Only
Prepared by Leelanau County
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On the plus side, however, citizen interest in environmental protection is high as is citizen vigilance. The Leelanau Conservancy has quickly established itself as an important positive force in protecting lands with sensitive environmental resources. This is done by outright land purchase, conservation easements and gifts. Currently, over 13,893 acres of land have been preserved by the Conservancy.

NATURAL RESOURCES

The natural resources of Leelanau County are vital to the economic health and the sense of well being of area citizens. These natural resources are interrelated biological systems. They require knowledgeable and careful stewardship for protection measures to be effective.

STEWARDSHIP ETHIC

The natural resources of the County should be treated as if they are a trust for use by all generations. Long term quality of life, a sustainable economy, and generational equity all demand this. A stewardship ethic views renewable resources as resources to be managed for long term productivity based on their potential value and contribution to local quality of life. In some cases they may be managed for single use (such as for an orchard), in others for multiple use (such as a forest for wildlife habitat, hunting, and timber production). In contrast, however, contemporary land use practices are too often focused more on resource exploitation for short term economic gain to the owner/operator without consideration of long term impacts on that or adjoining land or water resources. As a result, land is scarred, water may be ontaminated, and quality of life is reduced for generations—usually by the time the damage is recognized, the exploiter is long gone.



Fall color in Leelanau County

Thus, the primary environmental goal of the **Leelanau General Plan** is the protection of unique and sensitive lands and the water resources from inappropriate and poorly designed development. This includes unique and prime agricultural lands as well as sensitive environments like dunes, wetlands, and wildlife habitat.

It is important to guide new development in a way which works with nature rather than against nature. A healthy economy depends on a healthy environment. Where there are legitimate conflicts between proposed new development and an important sensitive natural resource, and reasonable and prudent alternatives exist, then the new development should yield to the sensitive environmental feature and be built elsewhere.

Where long term sustainable economic or public safety and welfare benefits outweigh small environmental impact, then the new development should be allowed to proceed with appropriate mitigation measures. In all cases, planning and development regulation should be oriented to preventing pollution, impairment, or habitat destruction.

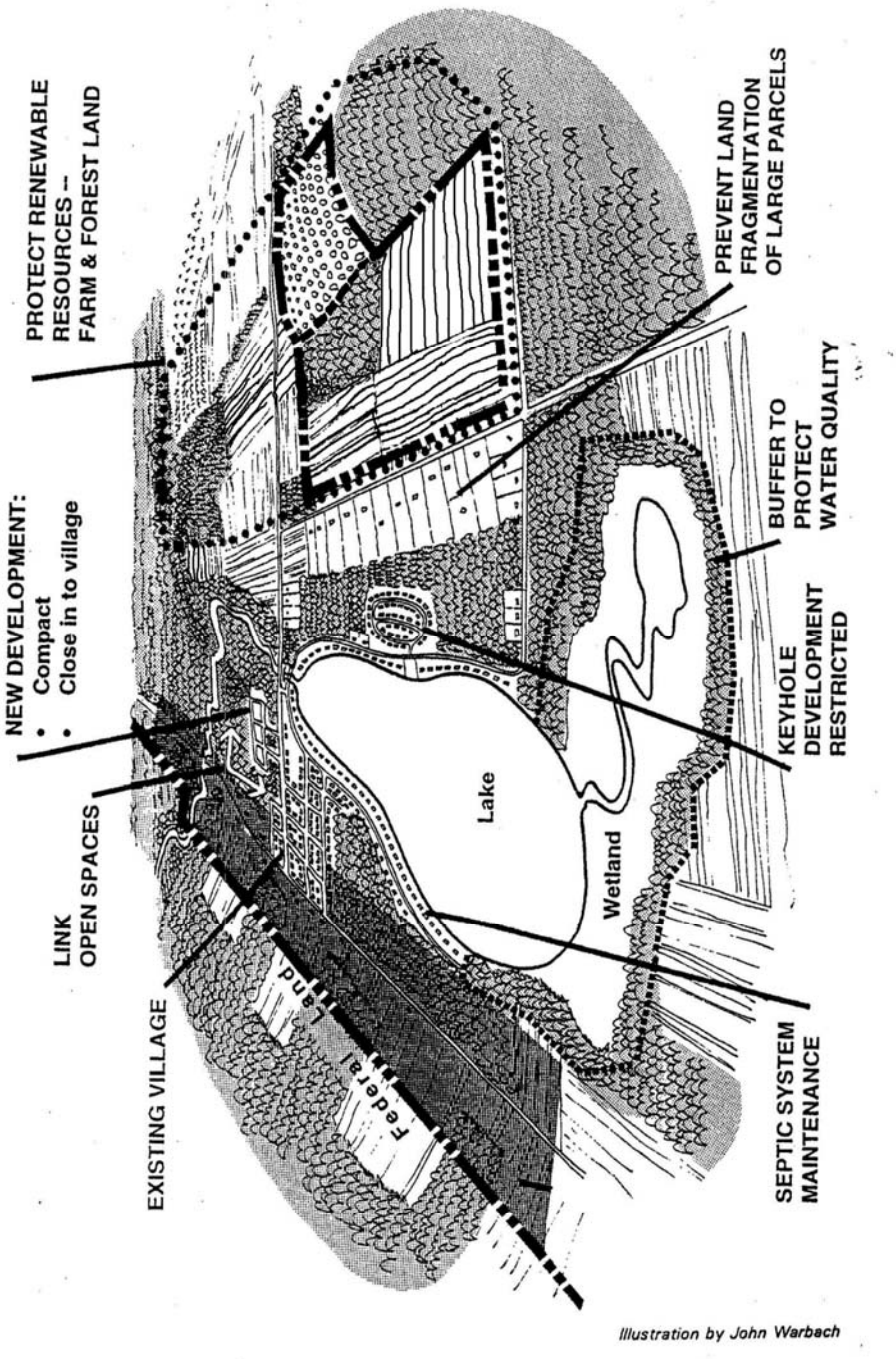
ENVIRONMENTAL PROTECTION STRATEGY

The basic strategy for environmental protection in Leelanau County as advocated by this **General Plan** follows (see Figure 3-1). More specific policies and action statements are found in Part Two.

The primary environmental goal of the General Plan is the protection of unique and sensitive lands and the water resources from inappropriate and poorly designed development.

- Identify and avoid sensitive environments in advance. New development could then avoid wetlands, dunes, floodplains, and endangered or threatened plant and animal habitat. Site plans need to be developed based on state, County, and local maps of sensitive resources, as well as on site specific reconnaissance.
- Protect water quality of surface water and groundwater with regular inspection and maintenance of septic tanks and management of stormwater.
- Minimize land fragmentation of large parcels. Uniform local zoning and land division regulations should be enacted which prevent fragmentation of prime farm, forest and important open space lands.
- Linking open spaces. Wildlife corridors, habitat protection, and linkages between open spaces should be primary consideration in the development of new local plans and County-wide open space plans. Efforts should be made to acquire fee simple interests or conservation easements across such lands where they are not already in public ownership. Other efforts such as mapping biodiversity should be encouraged whenever possible.
- Compact development. New residential development in the County should be encouraged in villages and in clusters on non-prime resource lands.
- Keyhole development. Control of private keyhole development around inland lakes has become necessary. New lakefront public access sites should be carefully sited to minimize environmental degradation and managed to avoid lake overcrowding and nuisance impacts on abutting properties.
- Protection of renewable resources. The protection of prime agricultural and forest lands and the promotion of environmentally sound sustainable agricultural and forest management practices can be achieved by coordinated County and local policies with the support of the farm community.

Figure 3-1
Environmental Strategy



Chapter 4
BALANCED GROWTH



Omena

POLICY GUIDELINE: BALANCED GROWTH

New residential, commercial, and industrial development in the County is encouraged provided it is: 1) in locations with public services adequate to meet its needs. 2) environmentally friendly. 3) consistent with the character of development in the area. 4) consistent with local plans and regulations. 5) compatible with the guidelines of this **General Plan.** In the implementation of this policy guideline, both the county and local governments will seek to ensure over time, that all the health, safety, and general welfare needs of its citizens that can be reasonably met are accommodated with a variety of land uses in the pattern proposed and in a manner which does not unnecessarily compromise options for future generations.

CONTEXT FOR BALANCED GROWTH

There is projected to be a continued demand for new dwellings in Leelanau County. These new dwellings will serve some existing residents, but largely will accommodate seasonal residents, new residents who will be working, or retirees. The county will grow as a bedroom, seasonal and tourist community. New businesses will continue to be established and some existing businesses will enlarge. Many new businesses will focus on the needs of seasonal residents and tourists, but increasingly, as the indigenous year round population increases, they will focus on the growing needs of existing residents. Limited opportunities for industrial development will continue and will be concentrated in agricultural and high technology enterprises.

There is no real question as to whether there will be new growth in the County, it is simply a matter of where, when, how much, and what type. The principal challenge is to devise an integrated and coordinated growth strategy which enjoys broad public support and that utilizes the best capabilities of county and local governments to guide growth into those locations best able to accommodate it, and/or most in need of it for the foreseeable future.

There is no real question as to whether there will be new growth in the County, it is simply a matter of where, when, how much and what type.



Subdivision in
Leelanau County

These policies should focus highest attention on both residential and agricultural land uses, due to their interrelatedness if current trends should continue. The greatest land use changes projected to occur involve conversion of agricultural and open space lands to residential use. Current trends must stop soon, or sprawl will consume critical areas of the agricultural economic base of the county and the open space that it provides.

Commercial development should be directed into existing villages and resorts and not be permitted to expand beyond planned areas. While the amount of new development will be a function of demand, which is not easily regulated, the location of new development, its density, and the adequacy of public services in the area are principally a function of governmental decisions. Coordinating consistent land use decisions is necessary to accomplish balanced growth. It also requires local plans and regulations that are built on a common vision and which rely on common policies for their implementation.

While the amount of new development will be a function of demand, which is not easily regulated, the location of new development, its density, and the adequacy of public services in the area are principally a function of governmental decisions.

BALANCED GROWTH ETHIC

This **General Plan** accepts the principle that environmental protection and economic development are not incompatible objectives. Jobs are essential for the income they generate to support families. Jobs in Leelanau County are largely related to agriculture, tourism, or to serving the needs of the growing commuter population (people who live in the county but commute to work elsewhere). Two (if not all three) of these job categories exist because of the natural resources and environmental quality in the County. Without it, the jobs would be lost. Yet the job base in the County is not sufficient in size to provide many new opportunities for young persons raised in the county to find work after graduation, and average pay scales are not sufficient to support a family. Affordable housing opportunities are becoming fewer and fewer. As a result, the disparity between the higher and the lower in-come citizens is growing.

Balanced growth will require housing not only for the wealthy seasonal residents, retirees, or two income commuter families, but also for young families, the elderly, and other low in-come residents. It will require new businesses and entrepreneurial activity to support the needs of these new families. It will require new tourist jobs, jobs to service our aging population, and probably some new light industrial jobs as well.

Where these new homes, businesses and industries are constructed will affect the future quality of life in the County. If the present pattern of sprawl continues for 10-20 more years, the rural character of the County will be irretrievably damaged as will most of the open space not in public



Suttons Bay Yacht Club

This General Plan accepts the principle that environmental protection and economic development are not incompatible objectives.

This will dramatically reduce, if not eliminate future tourism growth. Incremental sprawl of residences across the countryside will drive out agriculture and further narrow (rather than broaden) the tax base.

The solution is balanced growth that deeply respects the environment and the quality natural resources in the County. The balance must be founded on the principle of sustainability.

Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable agriculture respects the land and water and involves management practices that do not diminish the potential of current and future operators to gainfully produce crops. A sustainable economy is one which meets the needs of the present without compromising social, financial, and environmental/natural resources for current and future generations.

In short, sustainable development means protecting the goose that lays the golden egg. In the County, that means protecting the natural environment and the renewable natural resources to a greater degree than would likely be the case elsewhere. This is because most of what is good about the County comes from the natural environment, and most of what sustains families in the County also comes from it.

BALANCED GROWTH STRATEGY

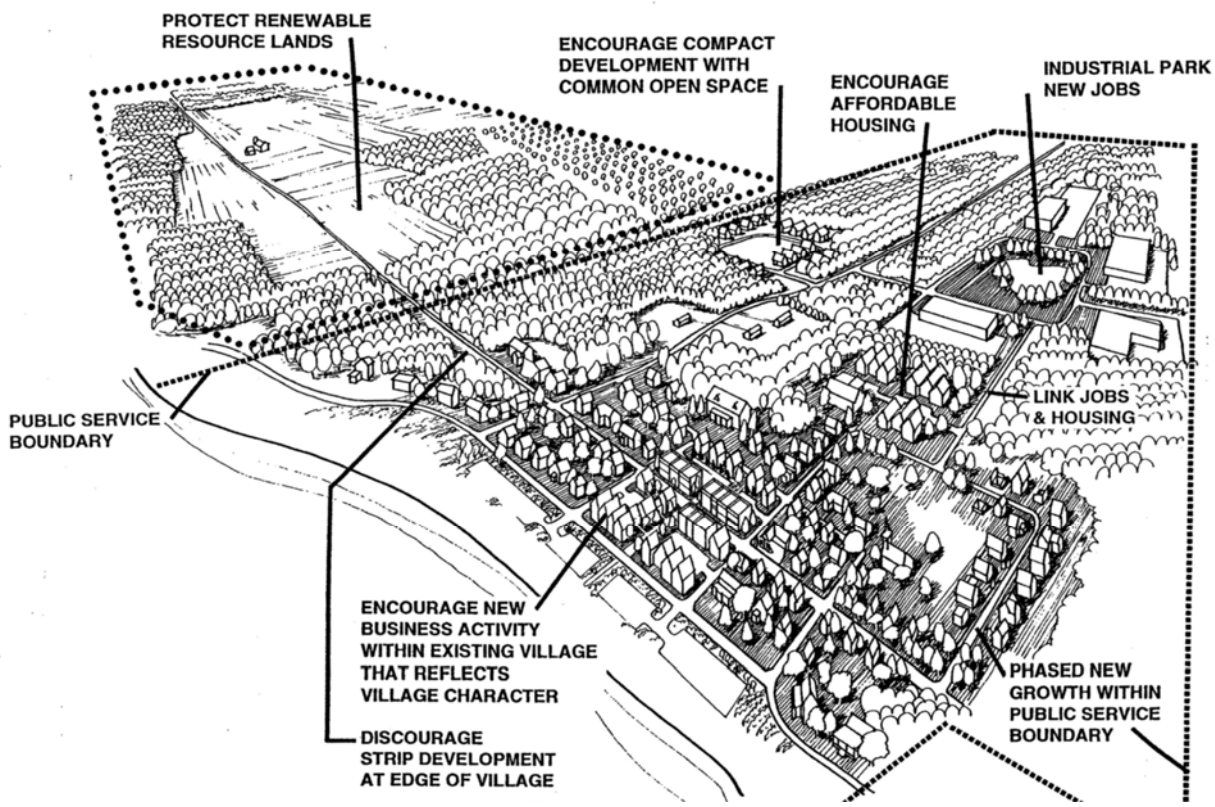
Just over half (55%) of respondents to the 2018 Planning Questionnaire strongly disagree or disagree that Leelanau County is losing its rural character, whereas 44% of respondents strongly agree or agree that Leelanau County is losing its rural character.

The basic strategy for balanced growth in Leelanau County as advocated by this **General Plan** follows. See Figure 4-1. More specific policies and action statements are found in Part Two.

- **Significantly curtail sprawl and encourage compact development.** The future land use pattern in the County will encourage new residential development in existing and adjoining villages (and perhaps new villages) and on non-prime soils or sensitive lands. Strip development will be strongly discouraged and all new commercial development will be in a village, resort or already established commercial area (such as Greilickville).
- **The existing economic base will be protected and enhanced.** Renewable resource lands will be protected for long term economically beneficial use. Activities supporting the tourist industry will be protected and enhanced but will not be expanded into new areas without careful planning. Business activity providing services to the year round population will be encouraged to concentrate in existing villages and strongly discouraged from moving to the edge of town.
- **New jobs.** New year round employment in services and light industry will be encouraged in several carefully planned industrial parks.
- **Health and human services.** An effort should be made to improve health services and access to them.
- **New development: where, when, how much, what type, and at what density**. Most new development will be residential but local regulations need to be changed to improve opportunities for jobs and affordable housing, especially in existing villages. New development should occur when, and only in locations which have or are guaranteed adequate public services to support the public service needs of new development. The density of new development will respect the character of the surrounding area, the capacities of necessary public services and not squander land resources. New development will occur in response to market demand and not speculatively, or ahead of necessary public facilities. In particular, new development will not result in the premature disinvestment in agriculture.
- **Phased growth.** New public facilities will be constructed to guide future growth based on annually updated capital improvements pro-grams (CIP) prepared by each local government and the county. All CIPs will be coordinated and compatible with the **General Plan**.
- **Public service boundaries.** New public services should be provided on a planned basis within boundaries of village and rural services districts. These districts need to be designed to economically and efficiently meet the needs of land uses within them. Simultaneously, high intensity development should not be permitted outside established public service boundaries.
- **Jobs/housing/transportation balance**. As new development occurs, an effort should be made to coordinate the provision of jobs and transportation so that a jobs/housing/ transportation balance is achieved that results in reduced transportation demands and a greater chance for cost effective transportation service.

- **Protect agricultural operations.** Agricultural operations need to be protected by local zoning measures that classify them as the principal and preferred use of prime orchard or other agricultural soils. Incompatible uses of adjacent land will be discouraged. Other local ordinances and programs should also be coordinated to protect sustainable agricultural operations.
- **Protect sand and gravel resources.** Lands with large amounts of marketable sand and gravel deposits should be identified and protected from conversion to other uses, or from being surrounded by residences to the degree that future extraction would be precluded. Existing sites of former extraction activities should be reclaimed.
- **Address equity concerns of large land-owners.** The value of prime agricultural, woodland, and gravel lands for residential development often exceeds that of the resource value of these lands. A major effort will be made to develop a County-wide program to permit large landowners to capture the development value of those lands without having to fragment or convert those lands for development purposes.
- **Educational opportunities.** An effort should be made to improve opportunities for continuing education, and government officials will support the initiatives of public schools to produce graduates with job ready skills. The consolidation of operational and curricular activities should also be considered.

Figure 4-1
BALANCED GROWTH STRATEGY



Chapter 5
GROWTH GUIDELINES AND DECISION MAPS



POLICY GUIDELINE: MANAGED GROWTH

Local comprehensive plans and local development regulations (including for example, zoning and subdivision regulations) should be updated and thereafter maintained, to include goals, objectives, policies and strategies for managing future growth compatible with the **Leelanau General Plan**. Local plans should include more specific land use and density proposals at the parcel-specific level. Local regulations should focus on design and other issues of local significance. Public facilities should all be constructed according to local capital improvement programs that are coordinated at all governmental levels in the County.

GROWTH MANAGEMENT TOOLS

The preface presented the principal goal of the **General Plan.** Chapters 1 - 4 presented principal policy guidelines and explanatory text in support of this goal. This chapter explains a variety of existing and new tools that could be employed by the county and/or local governments in the county to increase significantly the chances for successful implementation of the **General Plan.** Part Two of the plan presents specific policies and action statements to give even clearer direction on steps that can be taken to implement this plan. Part Three focuses on the institutional structure necessary for successful implementation.

Following is a description of the key growth management tools and techniques proposed to be used. Many relate to elements included in the decision maps included in the last section of this chapter. Some of these tools can be used under existing statutes, others will require new enabling legislation. Some can be implemented by individual actions of the county or local governments while others require coordinated actions by multiple units of government.

Community Types:

Identification of community types enables citizens and officials to categorize areas of planned high, medium, and low density development as well as to identify those areas most likely to need improved public services in the future and/or around which new development could be clustered. The density classes referred to here are *"average densities"*

for development, a term not to be confused with *"minimum lot size".* Average density refers to the density that results by dividing a total number of future dwellings by the total acreage of a large land area. The number of dwellings on each parcel within the area in question may be a different size than the "average". In contrast, zoning ordinances typically establish minimum lot sizes below which no smaller parcel may be used.

The average density of an area is a better measure to use in the **General Plan** because many parcels of varying dimensions are already built upon and new dwellings could be clustered on a portion of a property to protect open space. Under clustering, the average density remains low while the density of the area with homes may by much higher. It is rather like the census-derived figure of 0.07 persons/acre in all of Leelanau County. This is an average density figure. However, within Suttons Bay or Northport, the average density is much higher.

The following community types have been identified and mapped in Leelanau County (See Map 5-1):

- **Urban Center**. The economic core of a region, characterized by a high concentration of activity that may be but is probably not coterminous with municipal boundaries. The urban center typically provides employment opportunities for a large number of people within the region. It also provides a significant portion of the region's economic and tax base. Urban centers are characterized by an average density of one unit per 10,000 square feet in platted areas, to one unit per one-half (1/2) acre in unplatted areas not serviced by a municipal sanitary sewer system.

- **Rural Center**. A local activity hub consisting of residential neighborhoods, a surrounding rural area, and a core of small businesses. Modest in size, it may or may not be an incorporated municipality. Some employment opportunities exist within the rural center. Average parcel densities ranging from one dwelling unit per 10,000 to 15,000 square feet are common, mostly the result of platted subdivisions.

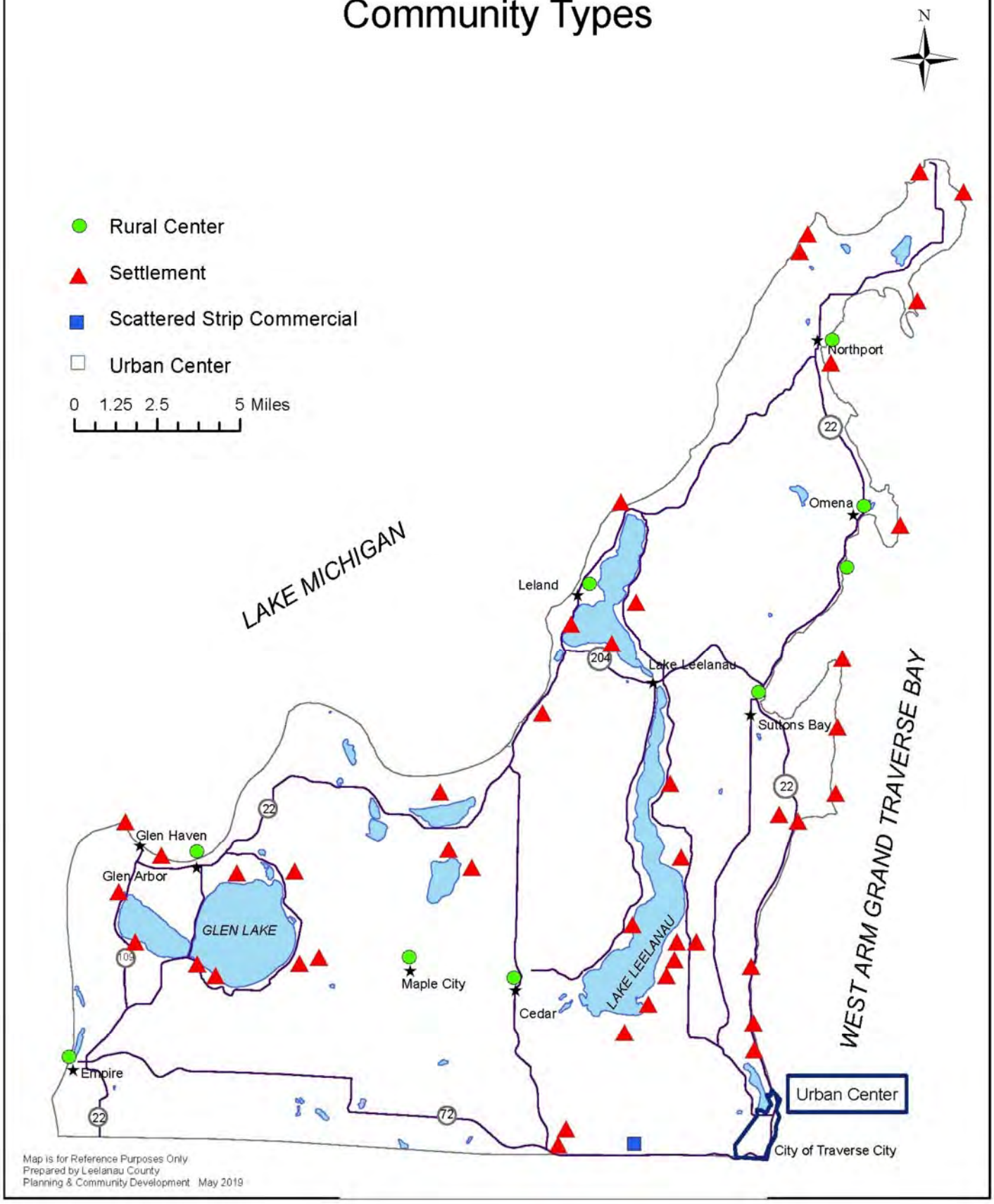
- **Scattered Strip Commercial.** An area of commercial development extending along a roadway at a shallow depth along that roadway. It is typically characterized by multiple curb cuts, unconnected vehicular use areas and many signs. Each establishment typically has road access and parking area access.

- **Settlement**. A small, relatively isolated community which may not have an associated commercial center, typified by clusters of single family residential parcels, that are each one-half¢(½) to five acres in size. Minimal employment opportunities exist, if any.



An apple orchard in Leelanau County

Map 5 - 1
Community Types





Farms along M-72 Kasson Township

Public Act (P.A.) 116:

The Farmland and Open Space Preservation Act (P.A. 116) provides an opportunity for farmers to enroll land in the program for periods from 10 - 99 years in return for tax credit. For many active farmers, the tax credit equals or exceeds property taxes. Many farms in the county were enrolled. However, PA 116 is not as active as it used to be, primarily due to the aging of the farming community. Many farmers have opted out of the program and there are few new applications being processed. A concerted effort should be made to encourage carefully considered enrollment as another growth management tool in those areas with prime orchard or prime farmland soils. Similarly, an analysis will be made and periodically updated of parcels in which the P.A. 116 enrollment will soon terminate in order to identify parcels "at risk" of conversion to other uses. (Map 5-2.)

Concurrency:

This growth management technique requires that new development occur only when the public facilities and services necessary to meet its service needs are in place. Thus, if a paved road and/ or sewer line were necessary to mitigate impacts of a proposed new use, they will have to be constructed before, not after the new use was established. Currently, it is not easy to require new development concurrent with adequate public facilities. See Figure 5-2.

With good planning and consistent implementation, it is possible to require con-currency with some special land uses and planned unit developments. It is not possible to apply this requirement to a rezoning unless it is 'conditional rezoning'. In order for this technique to be effective

it needs to be used in conjunction with capital improvements programming. Consistent county/ local planning and coordinated capital improvement planning can give many of the same benefits as concurrency without new legislation.

Village and Rural Service Districts:

The creation of village and rural service districts allows communities to identify areas in which specified public services will be provided during a planning period, areas in which partial or limited services will be provided, and areas in which few if any public services over and above current levels will be provided (rural service district). An urban services district should be established in the southeast corner of Elmwood Township in recognition of the urban character and service level of that area. The specific services to be provided within the planning period for each services district must be identified. This approach helps direct growth into areas where necessary public services are adequate. It also permits the development of a long term public service strategy linked to a capital improvements program (CIP).

Capital Improvements Programs:

A CIP is an annual listing of proposed public facilities or major improvements to be constructed in the next six years along with their proposed location, method of financing, when they will be constructed, and who is responsible for them. When each community in the county (including the county itself) prepares a CIP and coordinates public facility improvements consistent with the established village and rural service districts, a strong tool for guiding growth is created.

Official Map:

This technique involves mapping the location of all new proposed public facilities to be constructed and all new public lands to be acquired within a planning period. Both private and public development decisions can be improved by common knowledge of public infrastructure and facility improvements. This is most beneficial when mapped on a county-wide basis. Each local government should prepare and periodically update an official map and send it to the office of County Planning and Community Development Department. A single official map could then be prepared depicting all county agency proposed public facilities with all the proposed local government facilities. It is best prepared and updated in conjunction with a coordinated CIP process. The inclusion of proposed state and federal public facilities would further strengthen the use of this tool.

Linked Open Space System:

As new development occurs in the County, the existing network of open spaces will become smaller and fragmented. By identifying the most important wildlife corridors and open spaces now, it is possible to create linkages that protect wildlife and permit wise recreational use. This should be a primary consideration in the development of new local plans and County-wide open space plans. Efforts may be made to acquire fee simple interests or conservation easements across such lands where they are not already in public ownership. Other efforts to promote biodiversity should be encouraged whenever feasible.

Impact Assessment:

Uniform procedures and checklists for evaluating projects in or near sensitive environmental areas or with significant public service impacts should be developed and widely distributed for use by all local units of government. This will permit equal treatment of projects while coordinating decisions on developments that may have impacts beyond the borders of a single jurisdiction.

Model Ordinances:
Similarly, model ordinances may be developed and made available for adoption and use throughout the county. These sample regulations address such items as land division and access control issues, natural resource protection issues, and community character issues.

Open Space Zoning:
Properties with non-prime agriculture or forest land soils that are not subject to more specific protection mechanisms could be developed without unnecessary loss of open space with a variety of open space protection techniques. Open space zoning is a set of techniques which permit residential development while maintaining a strong sense of rural community character and protection of environmental resources. Open space zoning establishes the protection of open space as the primary site development consideration of which the clustering of dwelling units and/or lots is a fundamental component. In this context, clustering means the positioning or grouping of dwelling units or lots upon a small portion of the site. The term clustering is applicable to both single family dwellings on individual lots in a small group surrounded by open space, as well as to a group of dwelling units with shared wall construction.

Open space zoning developments differ from traditional planned unit developments (PUD's) in that PUD's often place priority upon the clustering of dwellings around common areas to minimize infrastructure costs, and the provision of open space is often a secondary consideration. In particular, there is usually less open space in a traditional PUD than in open space development. In addition, traditional planned unit developments have been used more in urban and suburban locations as an alternative to a traditional subdivision rather than as alternative to strip-residential development (a primary reason for its use in a rural area). The maximum provision of open space consistent with the rural character of an area is the priority consideration in open space zoning provisions.

Open space zoning is characterized by three fundamental components. First, a significant portion of the site is protected as permanent open space. Second, residences are clustered to maximize the quantity and quality of open space on the site. Third, site development maintains a low visual impact, particularly along the public roadway. This is very important because the image a person has of the rural character of an area is typically formulated largely based on the experience of that area from the roadway corridor providing access to and through it. Consequently, if that corridor changes from a natural or indigenous rural character to one characterized more by intermittent large-lot single-family homes (often stripped adjacent to the county road), then the perception of the character of that area has been dramatically altered.

Benefits of Open Space Zoning
There are a variety of public and private benefits associated with open space zoning.
Public benefits include:

- Preservation of open space, preservation of rural character, preservation of environmentally sensitive areas, and preservation of significant vistas.
- Close-to-home recreation opportunities.
- Minimization of through traffic in residential areas.
- Minimize public service costs.

Private benefits include:

- Allowing owners of large parcels, such as farmers, another option to develop their land through methods other than the large lot split option.
- Often, farmers can still go on farming in protected open space areas, but the value of the land for residential purposes has been captured by the farmer—yet no houses are built.
- Existing rural residents are assured of maintenance of the long term rural character of the area. a greater assurance of minimized taxes for public services since higher service levels are not needed. ***Source: Planning and Zoning News, March 1992, Pgs 7 and 8.***

LEELANAU GENERAL PLAN
DECISION MAPS

Following is a description of three maps which graphically illustrate key planning concepts promoted by the **General Plan.** These maps are intended to help explain, and thereby improve understanding of these concepts. It is expected that these maps will be used by decision makers when carrying out their responsibilities for future local or county planning or development regulatory decisions.

Future Land Use Map
Preservation of the County's character is the central focus of the Future Land Use Map. As previously mentioned in this plan, the visual character of familiar landscapes are important image guideposts people use to find their way in daily activities.

The Future Land Use Map does not, nor should it, distinguish between existing and proposed uses, or different levels of road improvement or "overlay" concepts such as environmentally sensitive districts. The map blends them into the overall fabric of the plan. The Future Land Use Map is prepared in a way to more accurately identify land use areas and designations.

The various elements appearing on the Future Land Use Map are as follows:

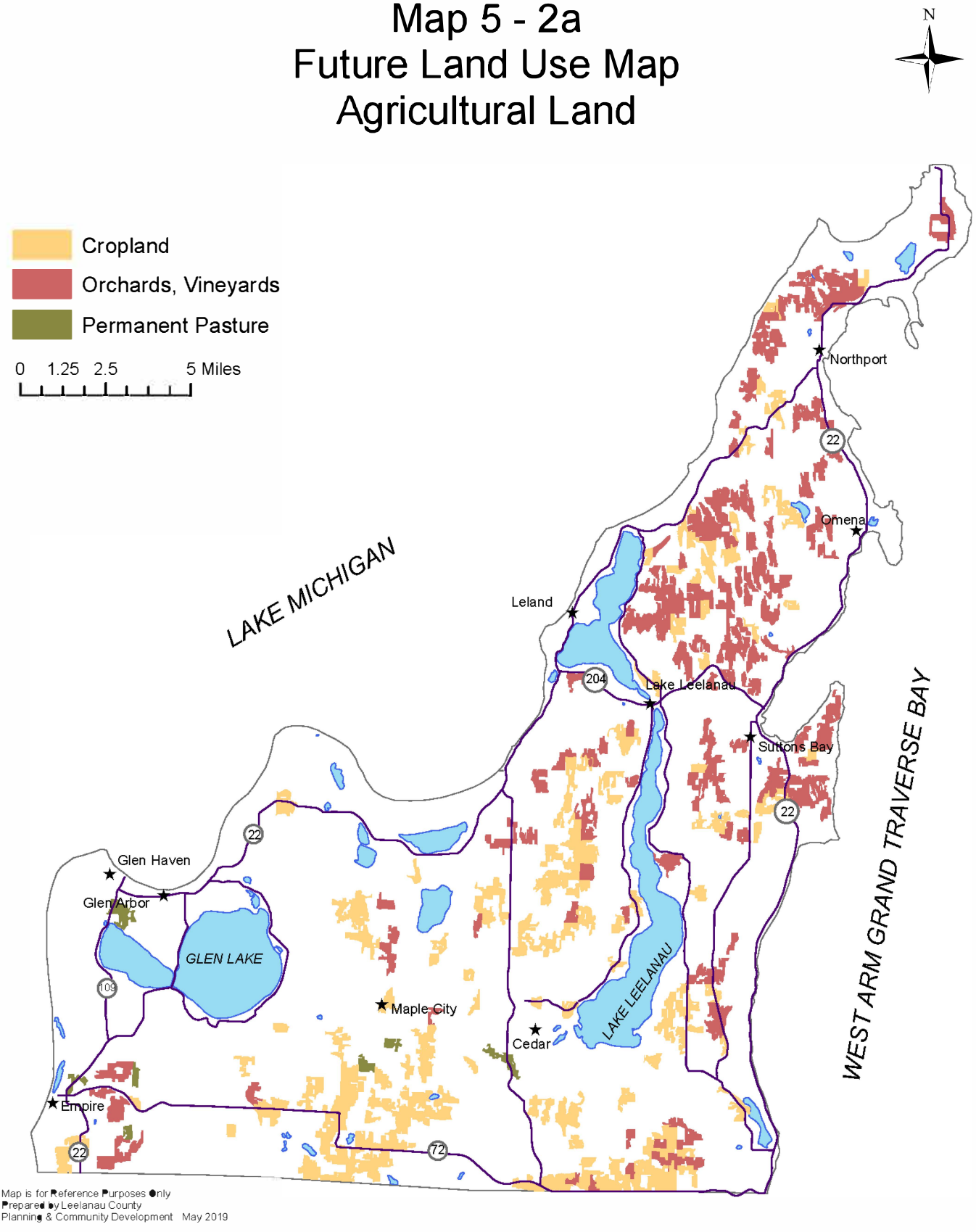
Agricultural Land (Map 5-2a)
Agricultural lands depicted on the map include the central County farms, ridge-top farms, and orchards.

Important Natural Features (Map 5-2b)
Major wooded areas including the southwest forests, and Northport woods are among the important natural features shown. Lakes and Dune lands, including those classified by the Michigan Department of Environmental Quality as "critical dunes," are also shown.

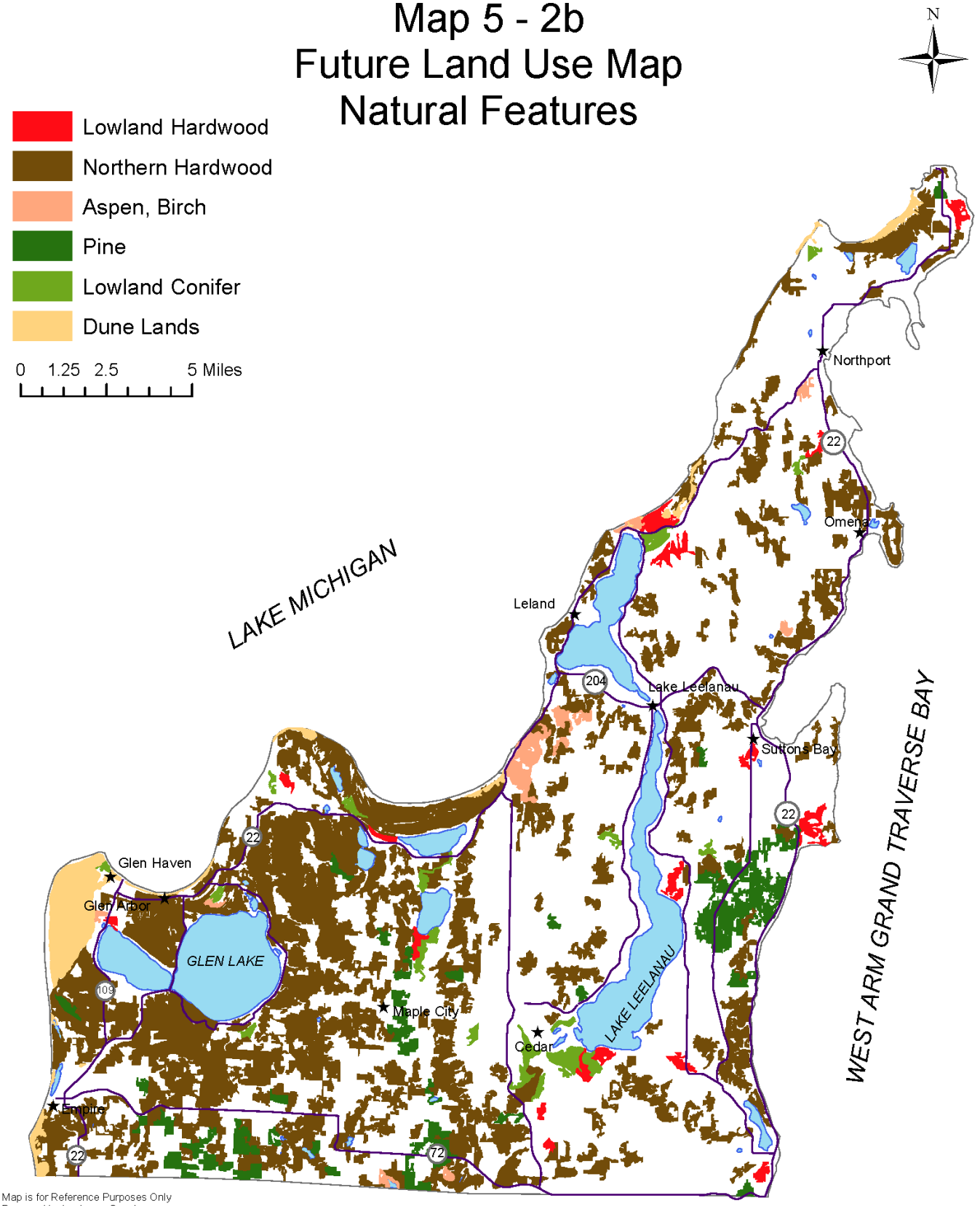
Urban Areas Incorporated Villages & Areas of Residential Population (Map 5-2c)
Villages and residential areas are the primary classes delineated on the Map.

Terrain (Map 5-2d)
Three major topographic features of the County are displayed in map form. These include glacial ridges, valleys, and the Northport Flats.

Map 5 - 2a
Future Land Use Map
Agricultural Land

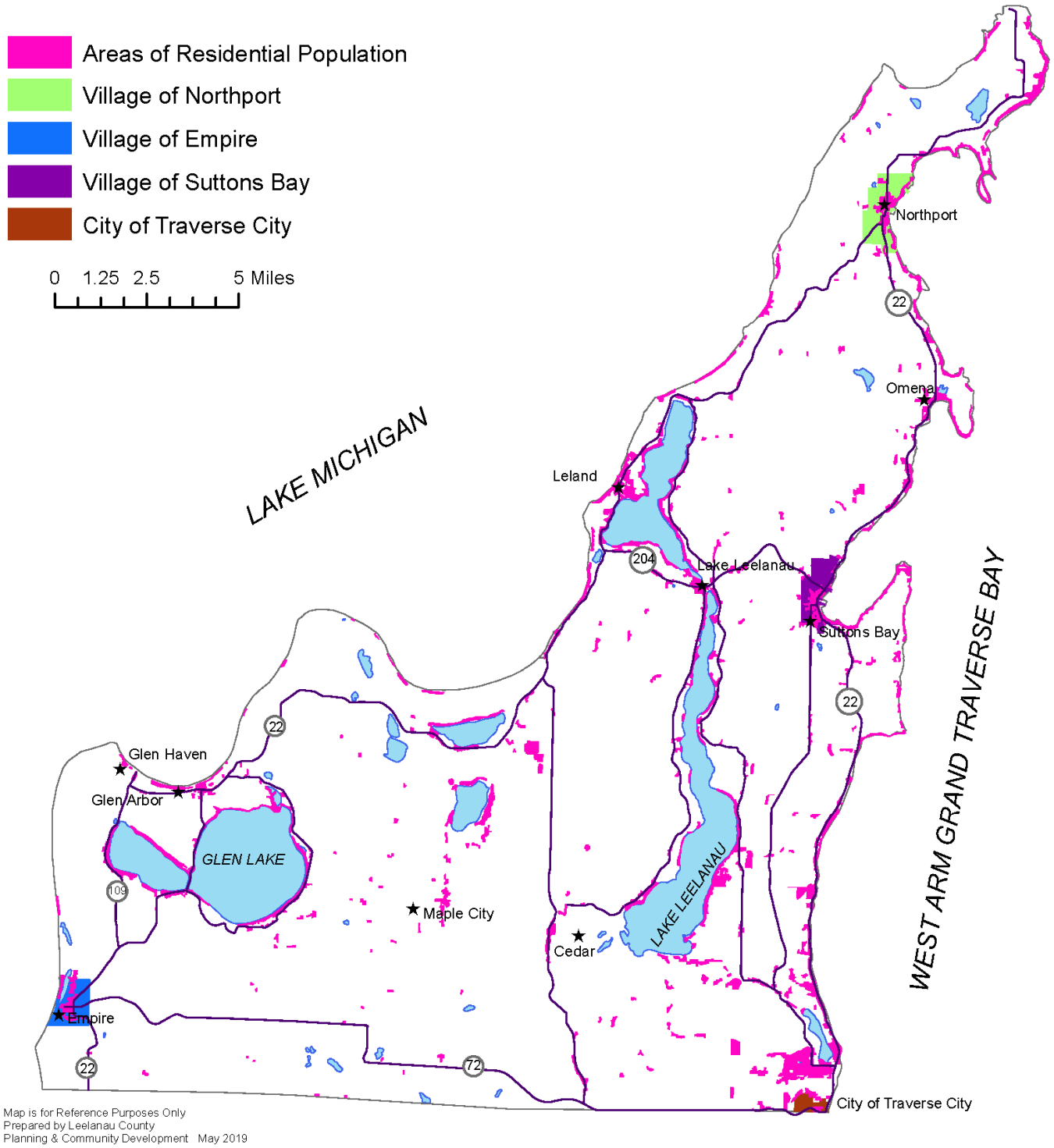


Map 5 - 2b
Future Land Use Map
Natural Features

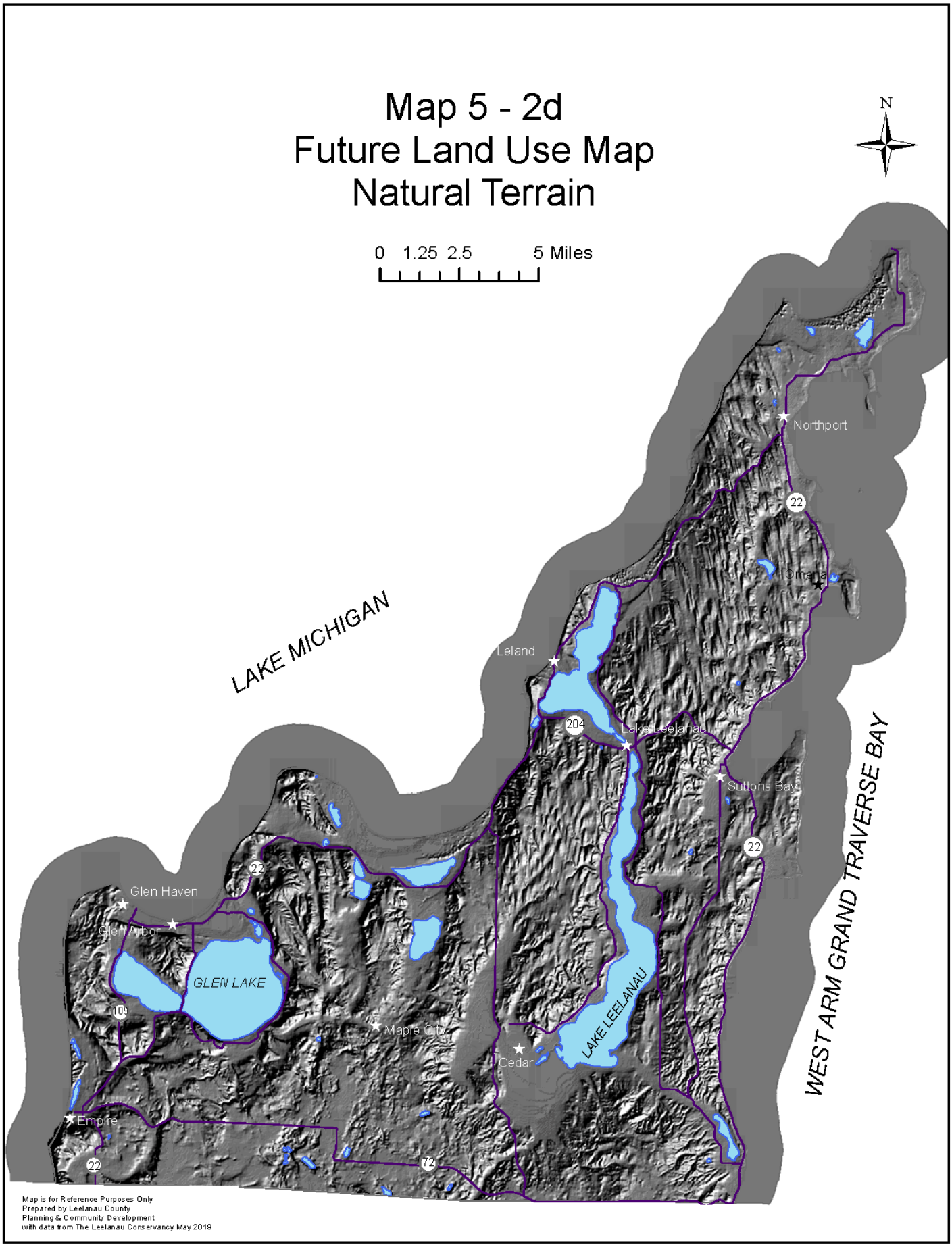


Map is for Reference Purposes Only
Prepared by Leelanau County
Planning & Community Development May 2019

Map 5 - 2c
Future Land Use Map
Incorporated Villages &
Areas of Residential Population



Map is for Reference Purposes Only
Prepared by Leelanau County
Planning & Community Development May 2019


Map 5 - 2d
Future Land Use Map
Natural Terrain
N
0 1.25 2.5 5 Miles
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Northport
Omena
Leland
Lake Leelanau
Suttons Bay
Glen Haven
Glen Arbor
GLEN LAKE
Maple City
Cedar
LAKE LEELANAU
Empire
22
204
109
72
Map is for Reference Purposes Only
Prepared by Leelanau County
Planning & Community Development
with data from The Leelanau Conservancy May 2019

Policy Maps and Chart

The Policy Maps are equally important elements of the **General Plan** and should be viewed together. The various elements appearing on the Maps are as follows:

Community types (Map 5-3a)

Community types shown in terms of "average density" are depicted on the Policies Map to allow citizens and officials to identify areas most likely to demand certain public services. The community types shown on the map are urban centers (within an urban service district or a rural service district), rural centers, settlements, and scattered strip commercial areas.

Sensitive Environments (Chart 5-3b)

Habitats of unique and endangered species, as identified by the Michigan Department of Natural Resources, are shown on the Chart. Wetland areas, stream corridors, dune lands, and beaches are among the sensitive environments for endangered species.

Public/Quasi-public & Institutional Facilities (Map 5-3c)

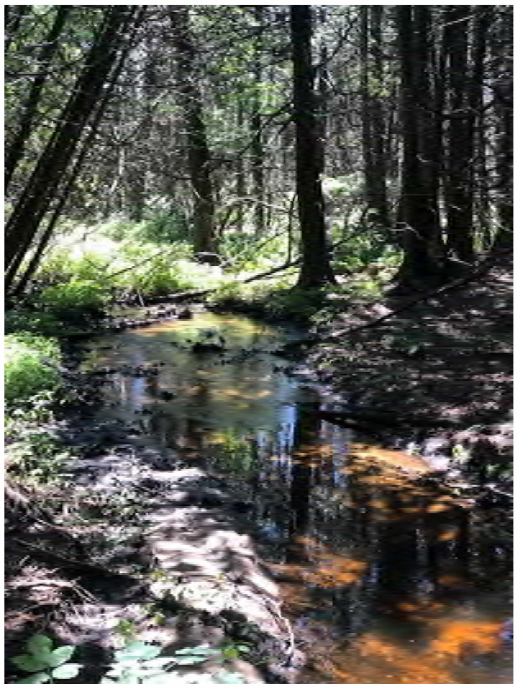
Boating harbors, public water access points, and schools and government facilities are included in this category. Public water access points shown include designated Department of Natural Resources access sites and public road ends.

Recreation Facilities (Map 5-3d)

The Sleeping Bear Dunes National Lakeshore, Leelanau State Park, Pere Marquette State Forest, local parks and golf courses are among the recreational facilities included on the Policies map.

Transportation Map *(Map 5-4)*

The Transportation Map identifies state highways, major county roads, non-motorized trails, airplane landing fields and marina facilities.



Creek in Suttons Bay Township

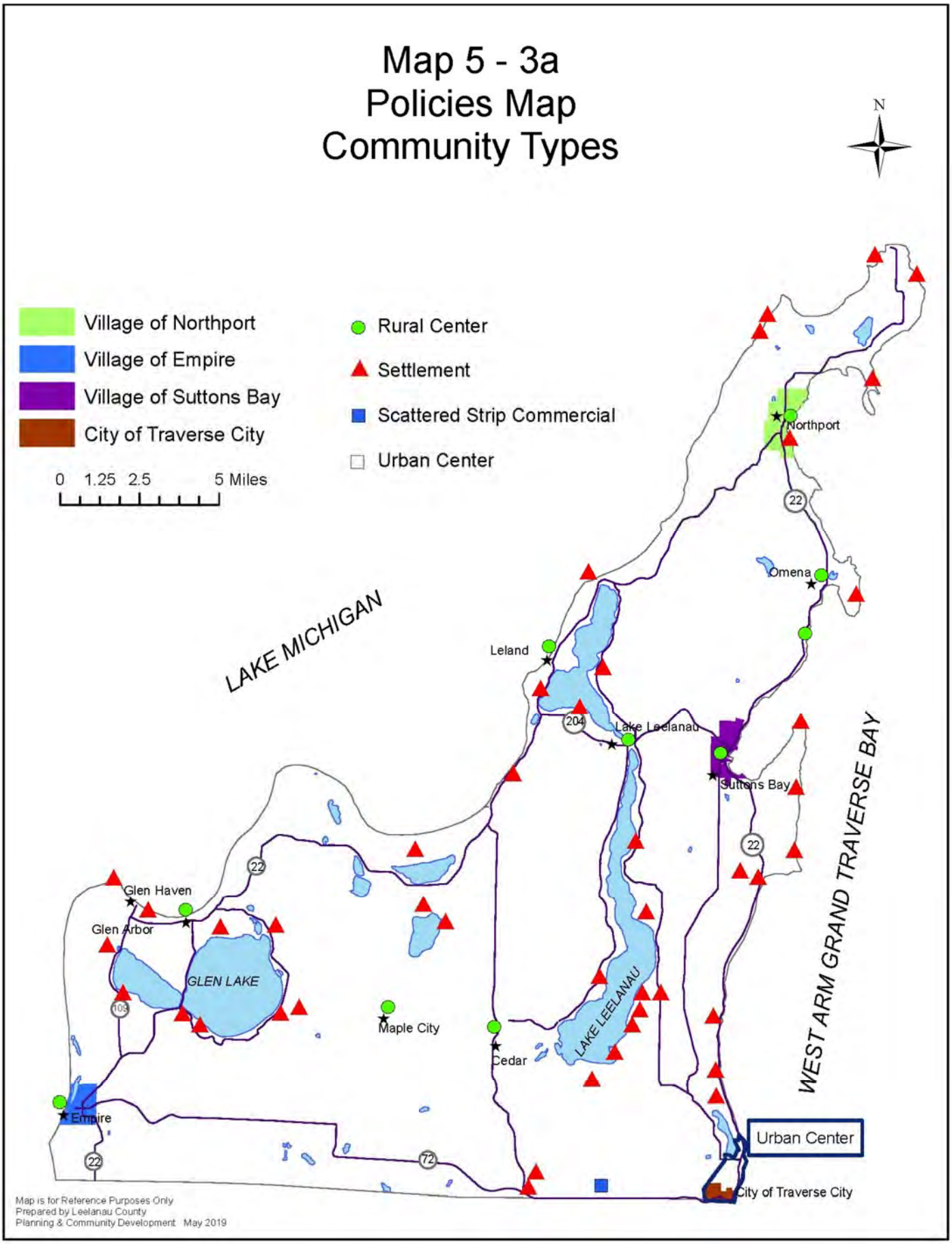

Map 5 - 3a
Policies Map
Community Types
N
Village of Northport
Village of Empire
Village of Suttons Bay
City of Traverse City
Rural Center
Settlement
Scattered Strip Commercial
Urban Center
0 1.25 2.5 5 Miles
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Northport
Omena
Leland
Lake Leelanau
Suttons Bay
Glen Haven
Glen Arbor
GLEN LAKE
Maple City
Cedar
LAKE LEELANAU
Empire
Urban Center
City of Traverse City
22
204
109
72
Map is for Reference Purposes Only
Prepared by Leelanau County
Planning & Community Development May 2019

Chart 5-3b
POLICIES CHART
Sensitive Environments

Endangered Plant & Animal Species in Leelanau County, MI – May 2019

Indiana bat (*Myotis sodalis*)	Endangered	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.
Piping plover (*Charadrius melodus*)	Endangered	Beaches along shorelines of the Great Lakes
Piping plover (*Charadrius melodus*)	Critical Habitat Designated	
Michigan monkey-flower (*Mimulus michiganensis*)	Endangered	Soils saturated with cold flowing spring water; found along seepages, streams and lakeshores
Pitcher's thistle (*Cirsium pitcheri*)	Threatened	Stabilized dunes and blowout areas

U. S Fish & Wildlife Service

Critical Habitat

When a species is listed as endangered or threatened under the Endangered Species Act (Act), we must consider whether there are areas of habitat we believe are essential to the species' conservation. Those areas may be designated as "critical habitat." Some caves and mines have been designated as critical habitat for the Indiana bat because of their importance for hibernation. Below is information about a petition that we received to expand the critical habitat listing.

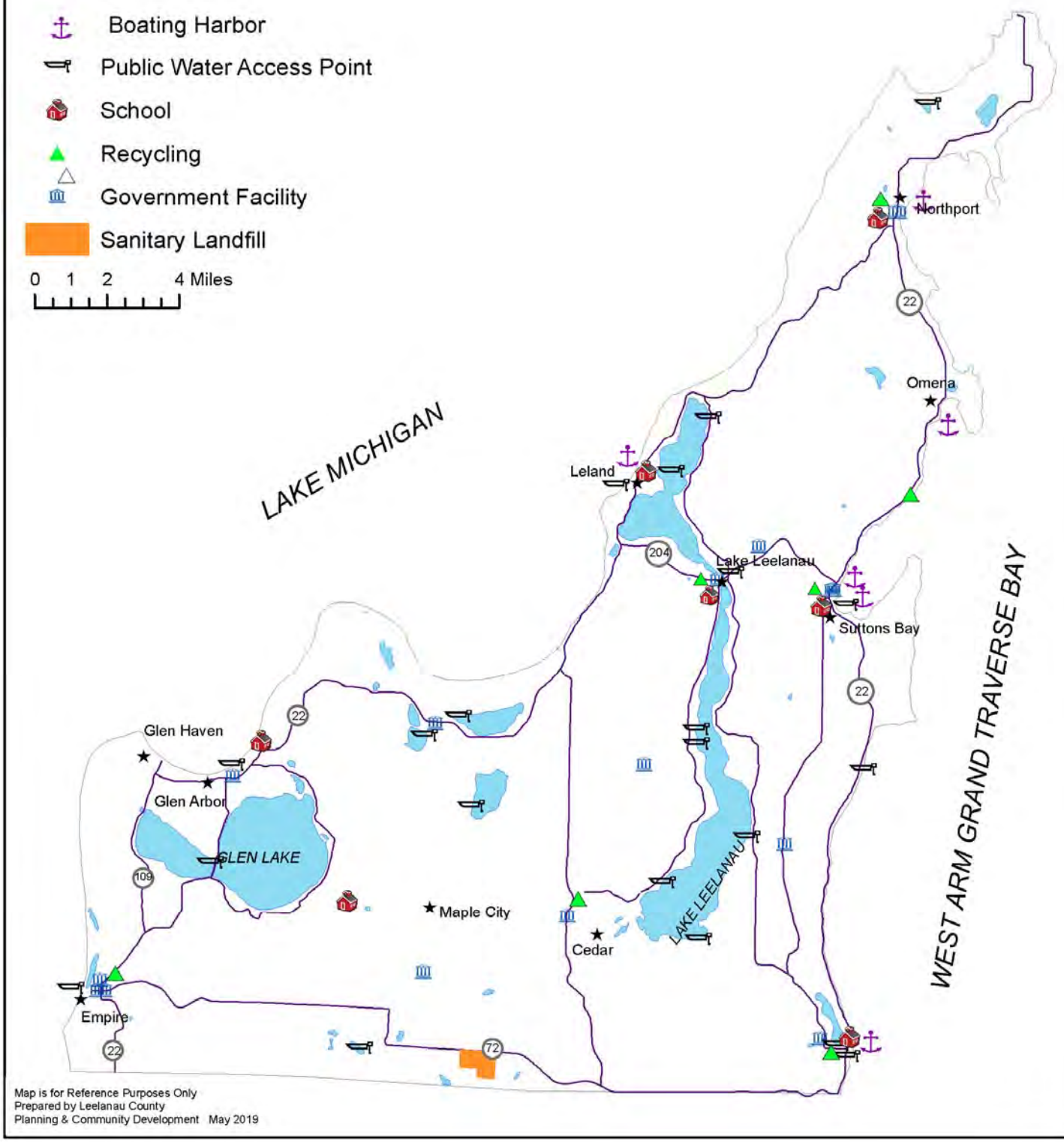
Bald Eagle

Bald eagles are no longer protected under the federal Endangered Species Act and Section 7 consultation with the U.S. Fish and Wildlife Service is no longer necessary. However, the bald eagle remains protected under the Bald and Golden Eagle Protection Act.

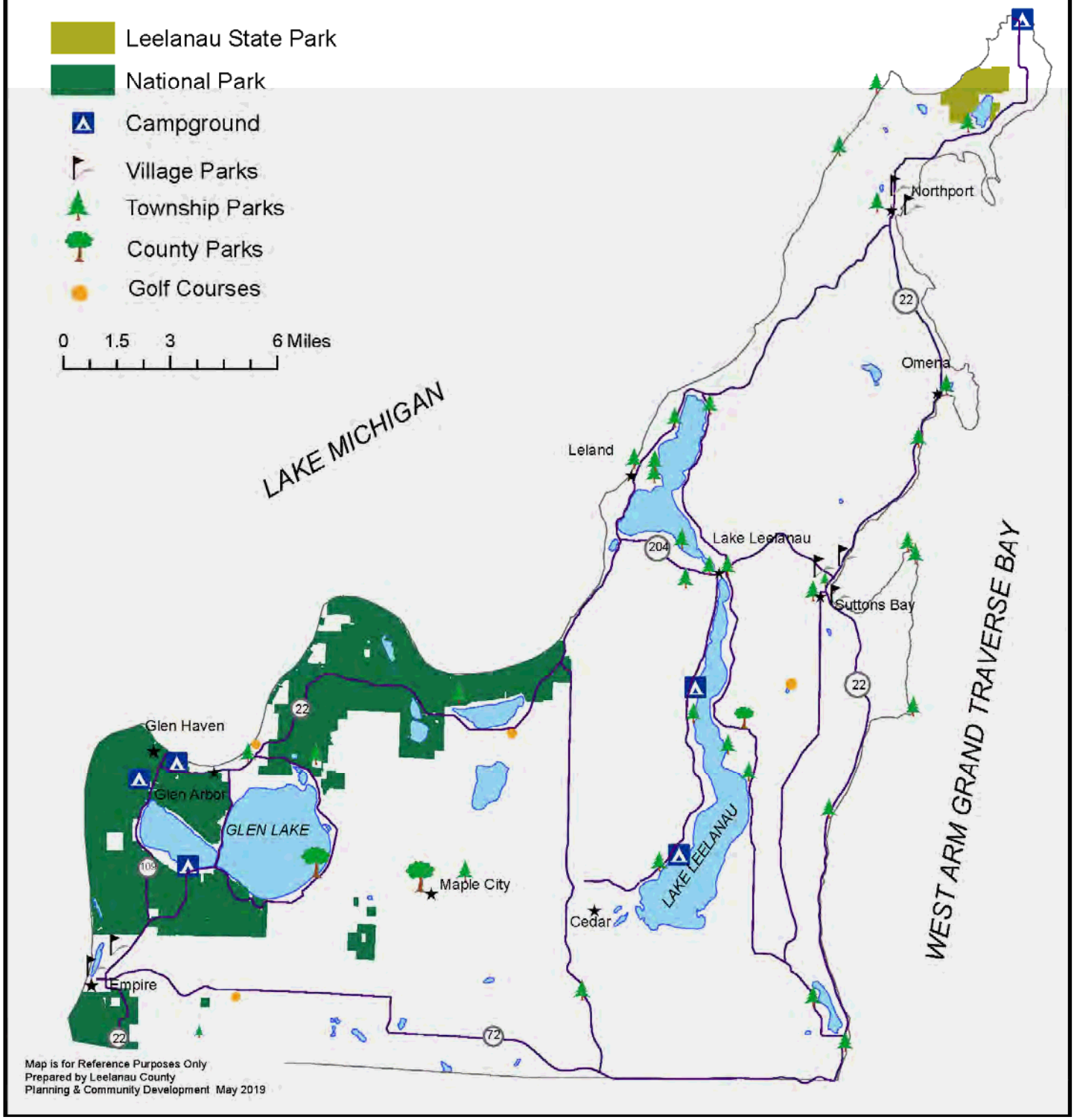
Gray Wolf

The Gray Wolf population that includes Michigan was removed from the list of threatened and endangered species and is no longer protected under the Endangered Species Act.

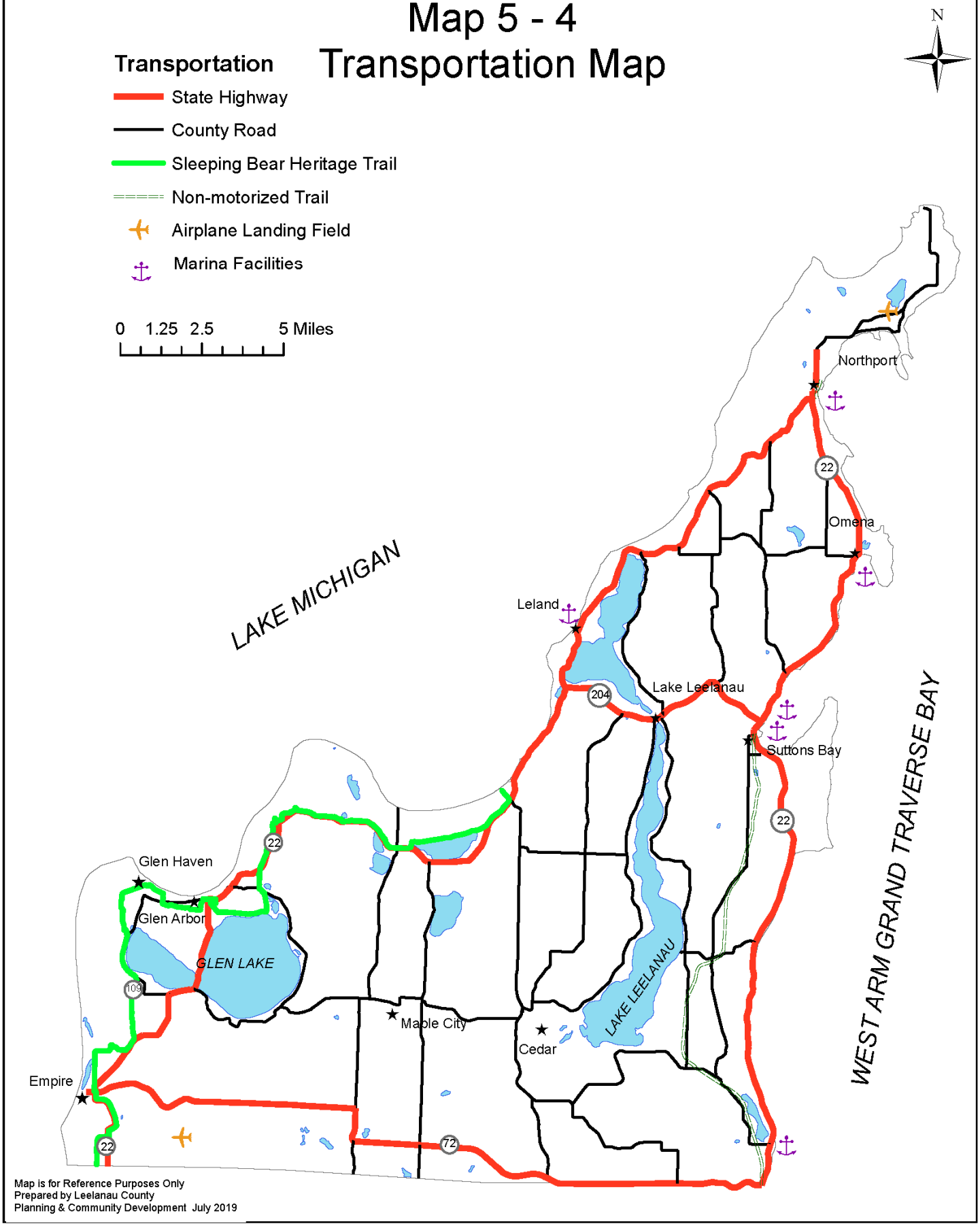
Map 5 - 3c
Policies Map
Public/Quasi-public and Institutional Facilities



Map 5 - 3d
Policies Map
Recreational Facilities



Map 5 - 4
Transportation Map



CHAPTER 6

NATURAL RESOURCES AND THE ENVIRONMENT

INTRODUCTION

Few locations within the State of Michigan, or the United States as a whole, are so rich in the quality and variety of natural resources as Leelanau County. These resources include abundant high quality water resources, unique and sensitive environments, world class dunes, extensive wetlands, rolling hillsides, woodlands, special flora and fauna, and more.

The natural resources of the County are vitally important in providing a strong and healthy environment. The quantity and quality of natural resources throughout the County are the fundamental reasons for living in the County. Also, they are critically important to the economy as its tourist industry thrives upon the County's natural landscape.

Future growth and development will place increasing pressures upon the quantity, integrity and solitude of the County's natural resources. If the current resources are to be protected for future generations, and yet still be "utilized" for economic benefit, purposeful actions must be taken to assure a healthy balance between growth, development, and the County's natural environment. The **Leelanau General Plan** recognizes that a healthy sustainable economy depends upon a healthy environment. The plan further recognizes that maintaining environmental quality and improving the local economy need not be conflicting objectives, and are in fact, mutually reinforcing.

ISSUES

The principal issues related to natural resources and the environment include:

- Energy efficiency and renewable energy
- air quality
- water quality
- groundwater quality
- woodland and hillside development
- protection of sensitive natural features
- farmland protection
- wildlife protection



Sleeping Bear Dunes

Energy Efficiency and Renewable Energy

Renewable Energy comes from natural sources that are constantly replenished such as Wind and Solar power. As efficiencies increase and costs decrease, renewable sources for energy have become increasingly attractive alternatives.

Approximately 60% of the mainland portion of the County rests upon "sensitive" aquifers.

Air Quality

Air quality in the County is quite high, but it is lower than it used to be. This is largely due to ozone pollution. Ozone is a gas formed when certain vehicular and industrial pollutants react in the presence of heat and sunlight. The ozone gas is an irritant and causes respiratory problems in humans. Evidence suggests that it is industrial activities from outside of Michigan which pose the greatest ozone threats. Major concentrations of smog (which heighten ozone levels) cross Lake Michigan from the Greater Chicago Area.

Water Quality

More than two dozen creeks and rivers assist in collecting stormwater runoff and carrying it to inland lakes as well as to Lake Michigan and Grand Traverse Bay. These creeks and rivers reflect a far wider quality range than do the lakes in the County, though it can be said that the rivers and streams are of relatively very high quality. With two small exceptions, all water courses in the County are designated trout streams, an indication of their high water quality level. There are, however, portions of major water courses, including Houdek Creek, which are currently showing the negative impacts of land use and development activities. Sedimentation and agricultural chemicals are principal threats facing streams today. Best management practices to minimize the negative impacts of stormwater runoff are needed. Due to high water levels in Lake Michigan, leaching septic systems may become a threat to shoreline water quality. ~~Additional~~ mMonitoring is ~~also~~ needed.



Leelanau State Park

Groundwater Quality

Seven of the County's largest lakes are classified as oligotrophic, the highest of three lake quality classifications related to water biological productivity.

Groundwater is the unseen water resource and one which nearly the entire County is dependent upon for potable water. This reliance for basic human health rests on a fragile resource at best. Approximately 60% of the mainland portion of the County rests upon "sensitive" aquifers. These underground water resources are overlain by highly permeable soils and thus easily susceptible to contaminants leaching down from the land surface (septic system leachate, petroleum spills, other hazardous spills, etc.). See Map 6-1. Even those aquifers which are somewhat better protected by being situated below low permeable clay soils or rock are vulnerable to contamination if adjacent aquifers become contaminated as underground water often flows freely between aquifers. Currently, there are 134 sites of contamination in the County where serious surface and groundwater contamination has been discovered, as listed by the Michigan Department of Environment, Great Lakes & Energy (EGLE) . One of the sites, the former Grand Traverse Overall Supply, is included in the Environmental Protection Agency's National Priorities List (Superfund Site), which identifies the contaminated sites that are most dangerous to human health. New sites are being discovered yearly throughout Michigan. While attention is being focused on uncovering and cleaning up contaminated sites in the County, it is equally important that steps be taken to prevent the creation of new contamination sites.

Future growth and development in the County could further jeopardize groundwater and surface water resources. The lack of uniform stormwater management techniques to control erosion and sedimentation leads to further degradation of lakes and streams as does the practice of inappropriate application of fertilizers and pesticides. The lack of a comprehensive septic system monitoring and of an improvement program continues to allow inadequately treated human waste to enter the County's lakes and groundwater resources. In most areas, the lack of a well established monitoring program to provide baseline data and benchmarks of current water quality conditions makes future water quality data that much more difficult to decipher. The collection and compilation of well records and other water quality data into the county's GIS system will be a major step forward.

Woodlands and Hillsides

All water courses in the County are designated trout streams, an indication of their high water quality level.

Woodlands and hillsides are abundant natural resources throughout the County. Shaping the rural character of the County, woodland stands are often found covering the County's rolling terrain. See Maps 6-2 and 6-3. The hillsides, at times in combination with the woodlands, are the focus of many dramatic vistas and define many of the visual corridors throughout the County.

The woodlands provide habitats for much of the County's animal and plant life and provide economic returns through harvesting and regeneration. These resources may become increasingly threatened as growth

often make woodlands and hillsides attractive home sites. As increased residential development occurs, incremental encroachment upon the hillsides and woodlands can be anticipated. At present only very limited county and local programs effectively preserve the functional and aesthetic values of these resources.

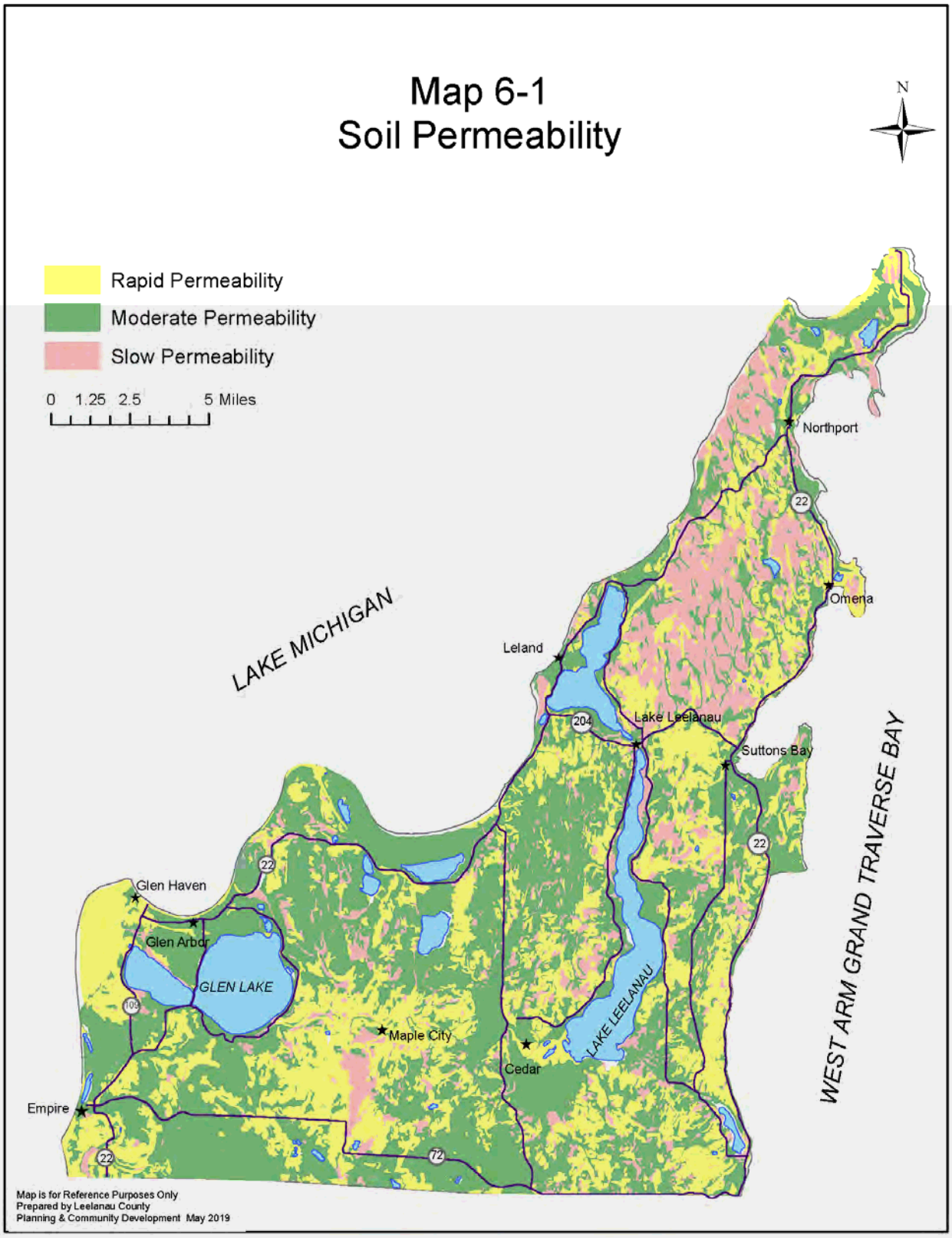
Sensitive Natural Features

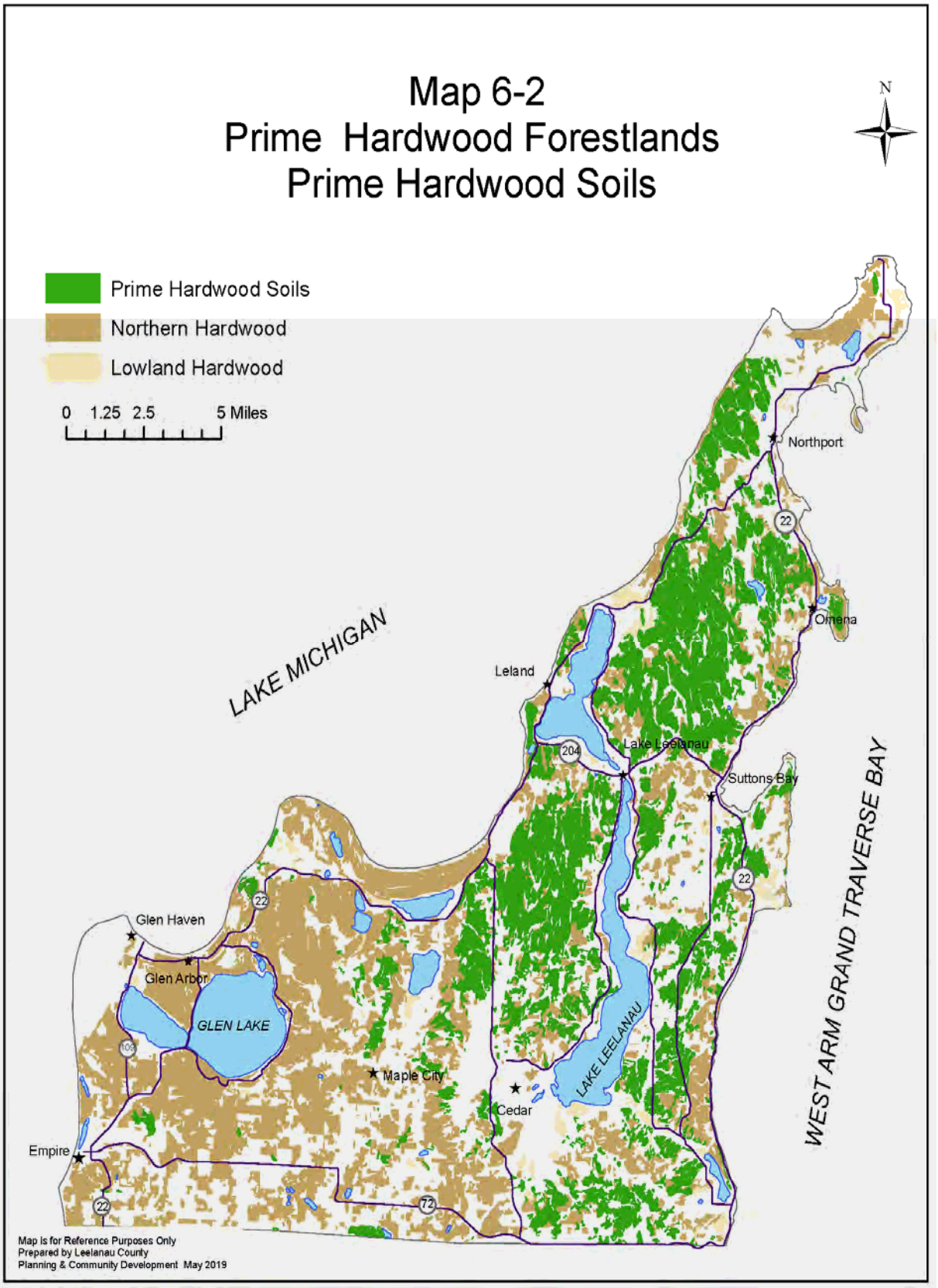
The abundance of the County's more common resources, including clean air, water, woodlands, and hillsides, is nearly matched by abundant sensitive environmental resources. Floodplain areas provide for the retention of runoff associated with heavier rains. In accommodating periodic heavy runoff flows, the floodplains in the County support special plant and animal ecosystems dependent upon the floodplain environment. While floodplain areas in the County are few due to the limited number of major rivers, abundant lake waters, and the sandy soils, they are particularly vulnerable to changes in land use.

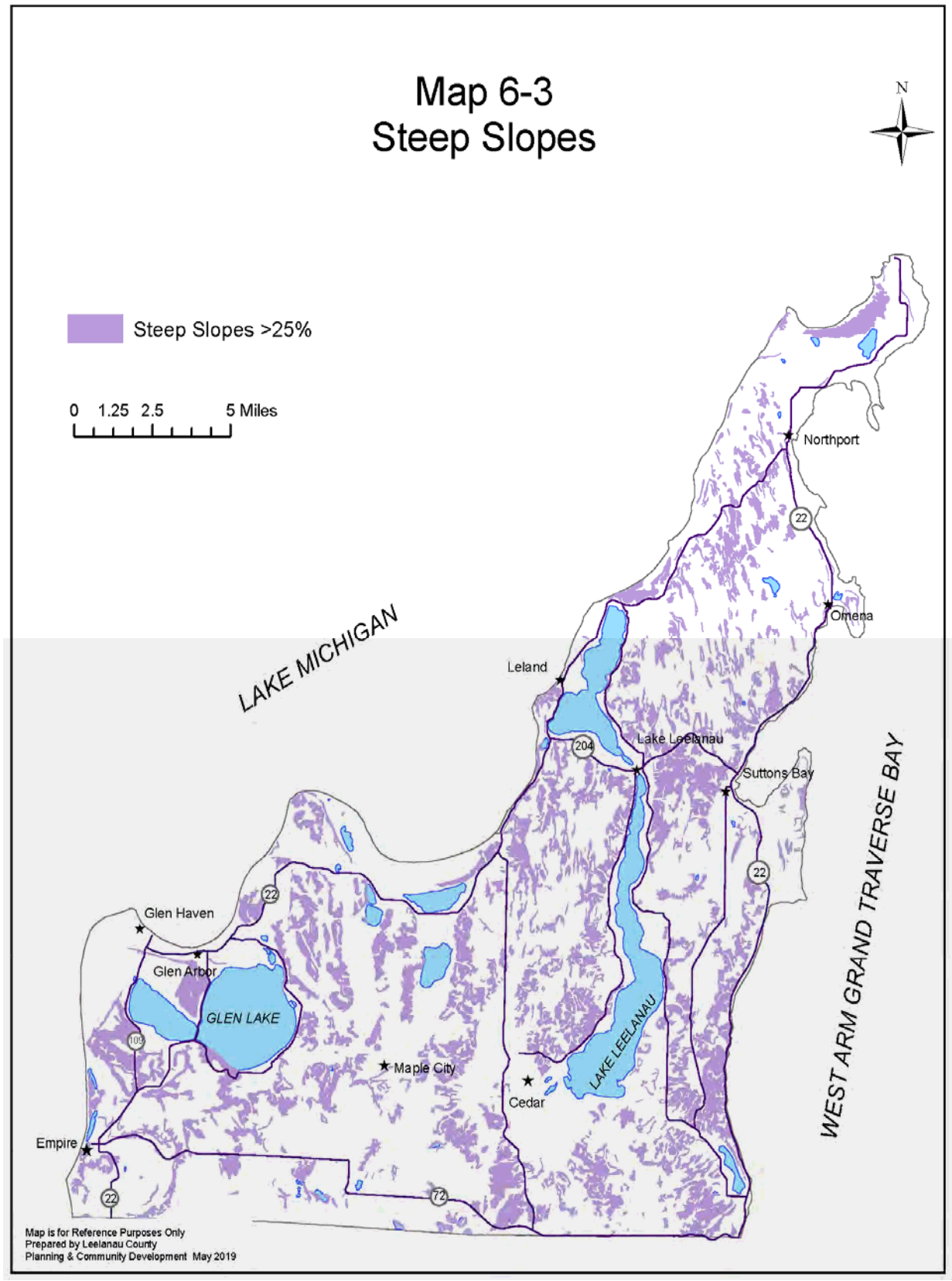
Wetlands include marshes, swamps, and other usually low areas between dry land and open water. Wetlands provide a multitude of vital benefits. They serve as filters which minimize the amount of organic materials and sediments discharged into streams and lakes while at the same time they retain stormwater runoff and limit flood impacts. Wetlands also provide ideal habitat for wildlife and are vital links in the County's overall ecosystem. The sensitivity of this resource is perhaps best illustrated by the fact that even minor changes in the water levels of marshes, swamps, and other wetland environments can dramatically impact the quality of the wetland resources and their long term viability.

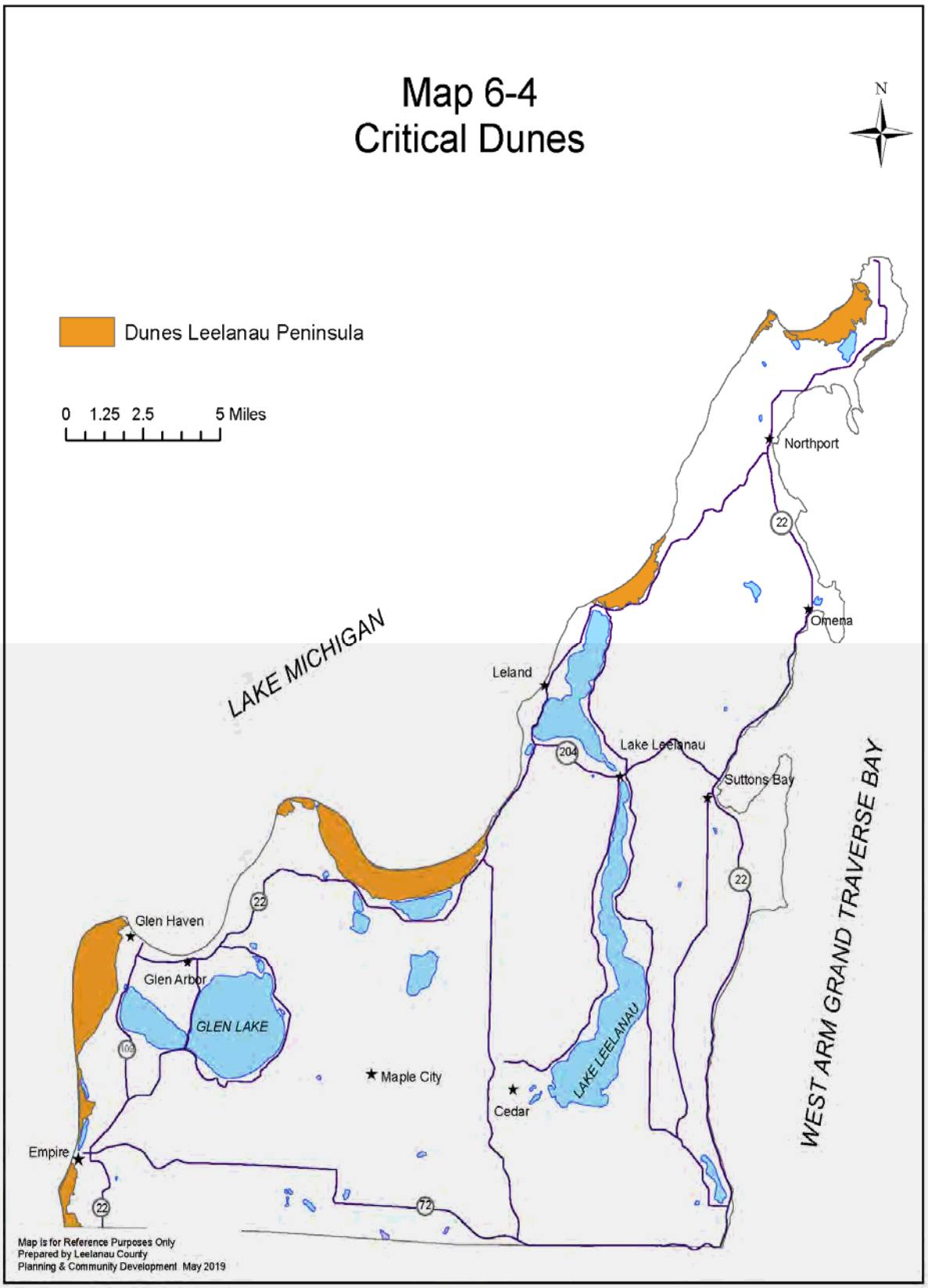
Lake Michigan shorelines (including Grand Traverse Bay) and dunes are also sensitive and unique environmental resources. See Map 6-4. Seemingly endless shorelines and monumental dunal formations epitomize the grandeur of the area. While these resources serve as critical components of the County's tourism and recreation industry, they are particularly vulnerable to wind and wave action, as well as to any land use and development activities which disturb the stability of the dunes. The clearing of vegetation along shorelines and dunes seriously increases their susceptibility to erosion, shifting, and demise. Disturbance of their natural character by land use activities heightens their vulnerability to winds and waves, and other climatic forces. Many of the County's shoreline areas and dunal formations are considered "high risk erosion areas." See Map 6-5. The significance of these areas is highlighted by their inclusion for protection under the Michigan Natural Resources Act 451. This Act serves to protect designated "critical dune areas", including Sleeping Bear Dunes and Empire Bluffs as well as less prominent dune areas.

The Lake Michigan shoreline and dunal formations harbor yet another sensitive environmental resource - threatened and endangered plant and animal species. Inventories by the Michigan Department of Natural Resources have identified numerous unique plant and animal species in the County which rely largely upon shoreline and dune areas for their survival. See Chart 5-3b in Chapter 5. Other threatened species which rely upon a more inland environment have also been identified. The fact that these plant and animal species are already considered unique due to their threatened survival emphasizes the need to prevent disturbances in the ecosystem in which they thrive.


Map 6-1
Soil Permeability
N
Rapid Permeability
Moderate Permeability
Slow Permeability
0 1.25 2.5 5 Miles
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Northport
Omena
Leland
Lake Leelanau
Suttons Bay
Glen Haven
Glen Arbor
GLEN LAKE
Maple City
Cedar
LAKE LEELANAU
Empire
22
204
109
72
Map is for Reference Purposes Only
Prepared by Leelanau County
Planning & Community Development May 2019


Map 6-2
Prime Hardwood Forestlands
Prime Hardwood Soils
N
Prime Hardwood Soils
Northern Hardwood
Lowland Hardwood
0 1.25 2.5 5 Miles
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Northport
Omena
Leland
Lake Leelanau
Suttons Bay
Glen Haven
Glen Arbor
GLEN LAKE
Maple City
Cedar
LAKE LEELANAU
Empire
22
204
72
Map is for Reference Purposes Only
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Map 6-3
Steep Slopes
N
Steep Slopes >25%
0 1.25 2.5 5 Miles
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Northport
Omena
Leland
Lake Leelanau
Suttons Bay
Glen Haven
Glen Arbor
GLEN LAKE
LAKE LEELANAU
Maple City
Cedar
Empire
22
204
109
72
Map is for Reference Purposes Only
Prepared by Leelanau County
Planning & Community Development May 2019


Map 6-4
Critical Dunes
N
Dunes Leelanau Peninsula
0 1.25 2.5 5 Miles
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Northport
Omena
Leland
Lake Leelanau
Suttons Bay
Glen Haven
Glen Arbor
GLEN LAKE
Maple City
Cedar
LAKE LEELANAU
Empire
22
204
72
Map is for Reference Purposes Only
Prepared by Leelanau County
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Shorelines of inland lakes are also sensitive natural resources. The calmer waters and areas of interface between the land and water are particularly important habitats for wildlife and plant life. Understandably, these areas are also actively sought for development and recreational use. The resulting threat to these environments through soil erosion and sedimentation, disturbance of the natural shoreline and vegetation, and leachate from faulty septic systems is a concern today and will become more significant as the County's population grows.

The incremental consumption of land for residential and other intensive land uses can be expected to encroach directly upon the County's natural resources or the ecosystems within which these resources are found. Reliance upon state and federal regulatory programs may not be adequate to assure the integrity of the County's sensitive environmental resources.

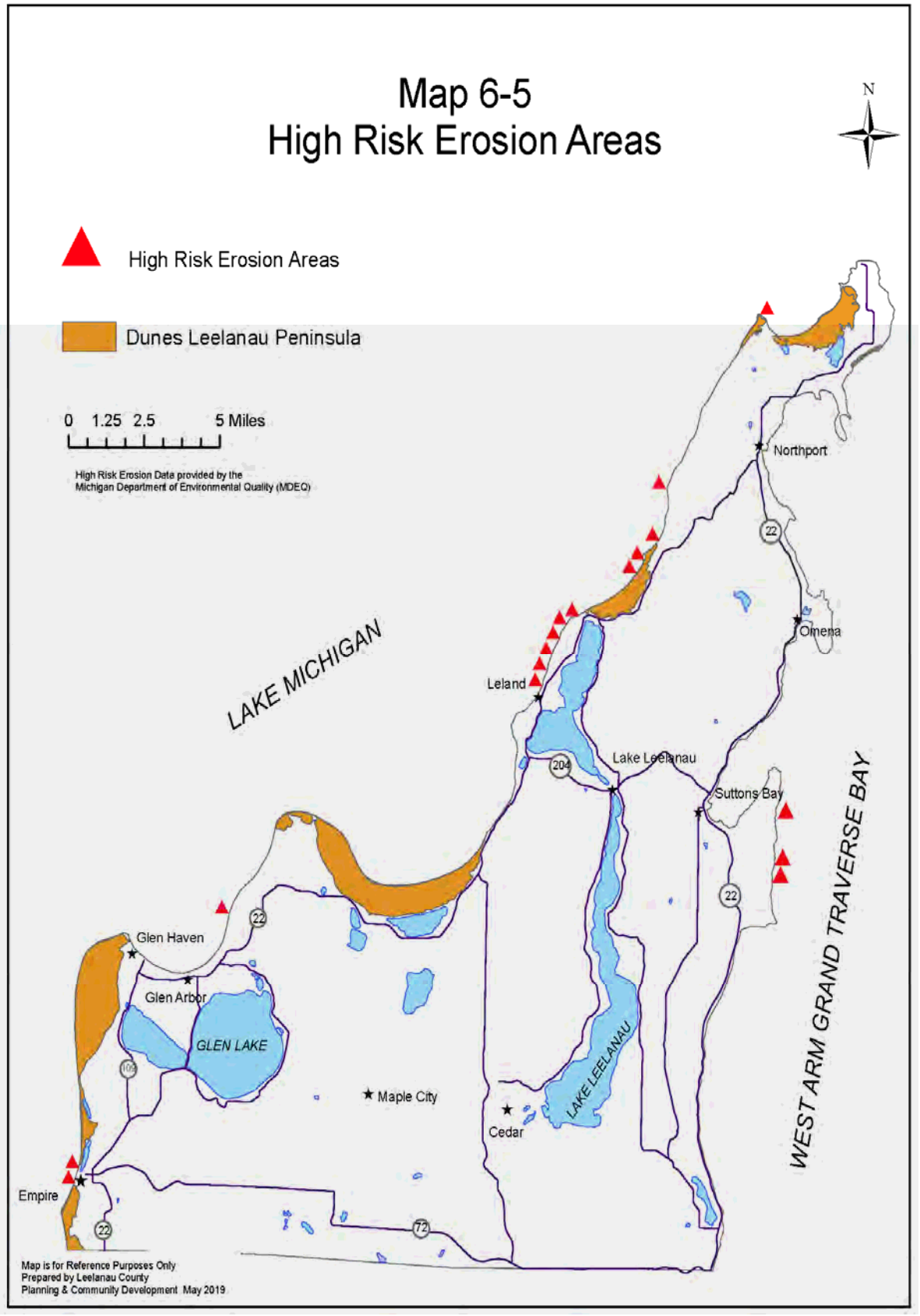
While local programs have been put in place to help protect the quality of the County's sensitive natural resources, local governments and other organizations still encounter difficulty in evaluating conditions and effectively enforcing regulations. The lack of resource base-line data, monitoring, and evaluation of the effectiveness of protection programs prevents wise future decisions regarding natural resource management initiatives and policies. At particular risk are the sensitive environmental areas at the edge of the extensive County acreage in public ownership including the Sleeping Bear Dunes National Lakeshore, Leelanau State Park, and Pere Marquette State Forest.

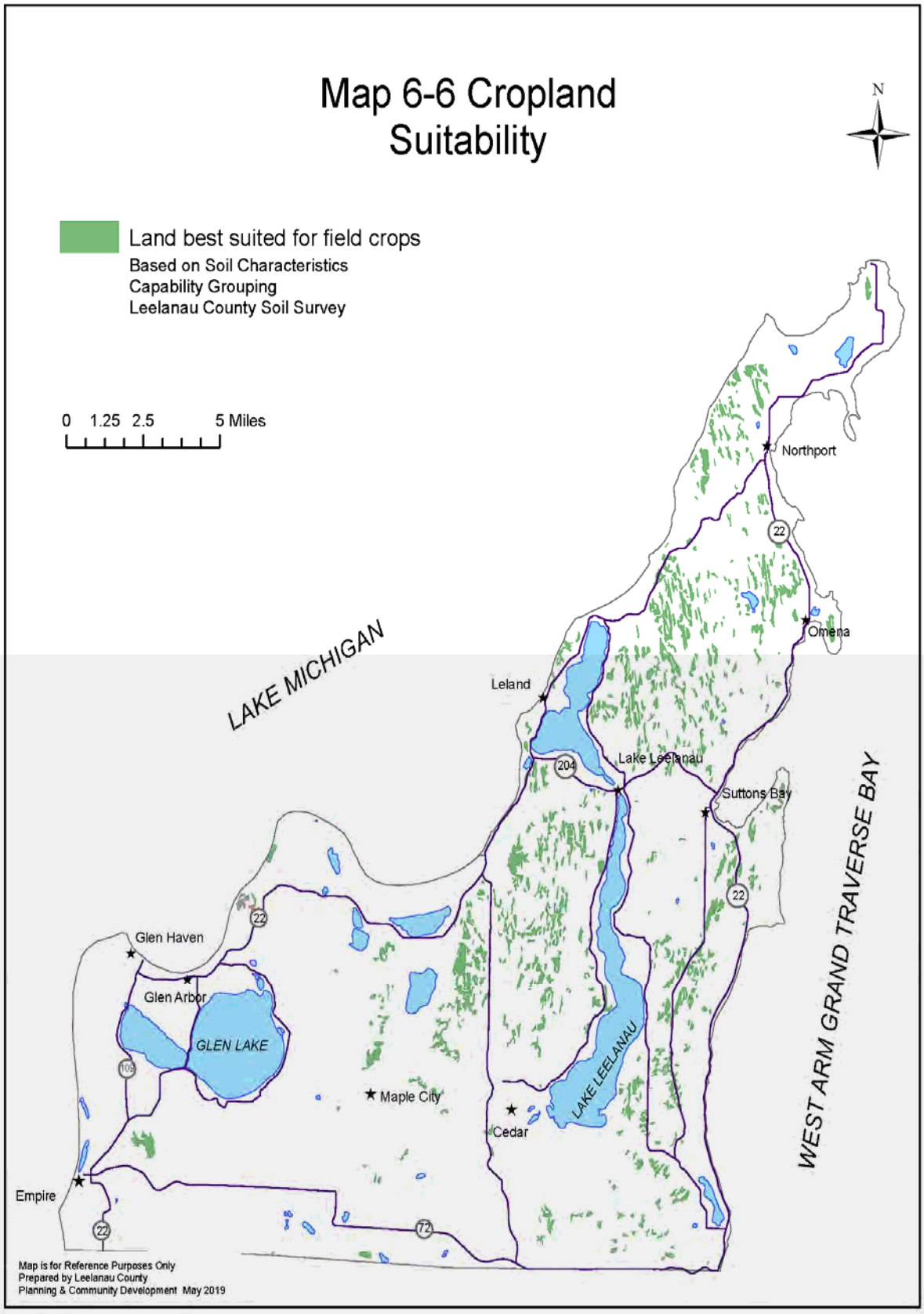
Reliance upon state and federal regulatory programs may not be adequate to assure the integrity of the County's sensitive environmental resources.

Farmland

Farmland is a special natural resource in the County. See Map 6-6. Orchards are the dominant land cover. See Map 6-7. They contribute greatly to the economic well being of the County as well as to its beauty and pastoral character. As important as this renewable natural resource is, there has been a decline in the number of acres devoted to farming over the past several decades. Once farmland is converted to another use, it rarely reverts to agriculture. Fragmentation of farmland through the splitting of large farmland parcels for residential use resulted in farmland loss as much or more than the farmland converted to actual residences, yards, and roads.

The increasingly dispersed settlement pattern across the County is the reason why this irreplaceable resource is being chipped away. Under present conditions, this pattern can be expected to continue. We must acknowledge the conflicts which will arise when farmers and other large landowners try to "capitalize" on development potential by subdividing. For many, this land is their retirement plan. However, if most of the farmland and open space in Leelanau County are converted to residential use (as current trends illustrate), much of the scenic beauty of the County will be lost for existing residents and tourists.


Map 6-5
High Risk Erosion Areas
N
High Risk Erosion Areas
Dunes Leelanau Peninsula
0 1.25 2.5 5 Miles
High Risk Erosion Data provided by the
Michigan Department of Environmental Quality (MDEQ)
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Northport
Omena
Leland
Lake Leelanau
Suttons Bay
Glen Haven
Glen Arbor
GLEN LAKE
Maple City
Cedar
LAKE LEELANAU
Empire
22
204
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Map 6-6 Cropland Suitability
N
Land best suited for field crops
Based on Soil Characteristics
Capability Grouping
Leelanau County Soil Survey
0 1.25 2.5 5 Miles
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Northport
Omena
Leland
Lake Leelanau
Suttons Bay
Glen Haven
Glen Arbor
GLEN LAKE
LAKE LEELANAU
Maple City
Cedar
Empire
22
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While local programs have been put in place to help protect the quality of the County's sensitive natural resources, local governments and other organizations still encounter difficulty in evaluating conditions and effectively enforcing regulations.

A FRAMEWORK FOR FUTURE POLICY

Trends and current conditions negatively affecting the County's natural resources have resulted from the lack of a focused resource protection program throughout the County. Residents realize that the resources are critical to their future welfare, and they recognize the need for a more responsible approach to resource protection. The **General Plan** recognizes the critical link between economic, social, and healthful well-being and protection of its natural resources. The plan seeks to establish a far more proactive approach, recognizing that long term protection must originate from a purposeful, strategic, and comprehensive conservation program.

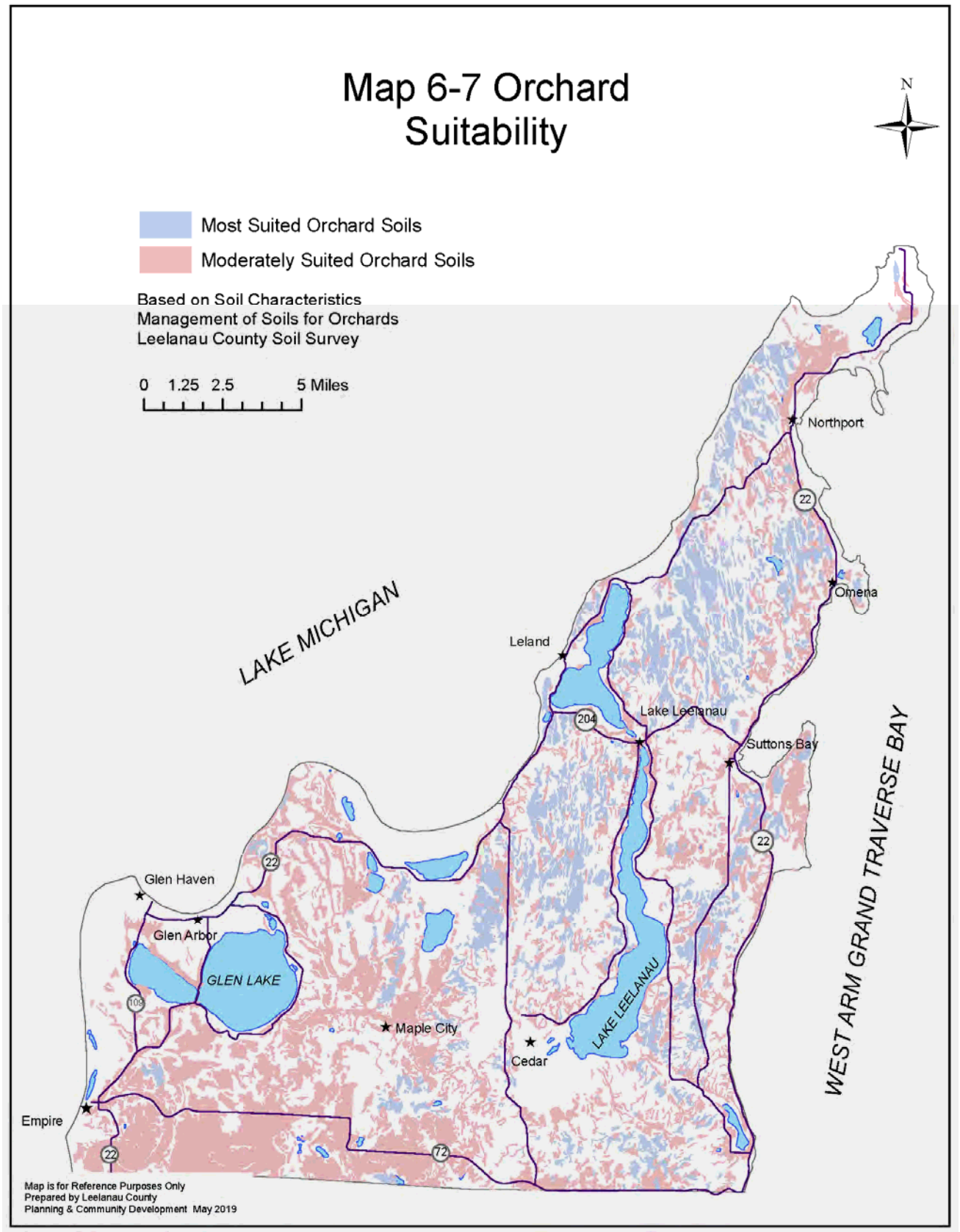
At the heart of this program is the adoption of a land and water stewardship ethic by all populations of the County including local government officials, residents, real estate brokers, farmers, students, and land developers. The future of the County depends on how its people manage its abundant natural resources. The widespread adoption of a land and water stewardship ethic requires broad public understanding of the dynamics of ecosystems, the relationship and impacts between natural resources and land use, and the County's economy as it relates to the natural environment. This understanding must be strengthened by continued research and evaluation of the dynamic relationships between environmental costs and economic gains.

The future of the County depends on how its people manage its abundant natural resources.

The **General Plan** recognizes that the quality of a single natural resource may vary across a township, and that the plan must respect the practical opportunities and constraints associated with resources of varying values. To this end, the plan calls for the identification of those resource areas in the County which are characterized by particularly high productivity and provide the basis for long term economic viability and protection.

This is especially applicable to prime agricultural (and especially orchard) lands, but should also be extended to include forestlands, mineral deposits, and other resources of economic and natural ecosystems importance.

These and other resource areas such as wetlands, dunes, shorelands, and wildlife corridors must be provided with increased protection through better coordinated local stewardship. This stewardship should be implemented through a number of strategic initiatives including: 1) preparation of model ordinances for local environmental protection, including development of environmental overlay zoning districts; 2) inclusion


Map 6-7 Orchard Suitability
N
Most Suited Orchard Soils
Moderately Suited Orchard Soils
Based on Soil Characteristics
Management of Soils for Orchards
Leelanau County Soil Survey
0 1.25 2.5 5 Miles
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Northport
Omena
Leland
Lake Leelanau
Suttons Bay
Glen Haven
Glen Arbor
GLEN LAKE
LAKE LEELANAU
Maple City
Cedar
Empire
22
204
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Map is for Reference Purposes Only
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Planning & Community Development May 2019

preservation of natural resources while still meeting the intent of the ordinances; 3) development of incentive programs for landowners to protect sensitive and productive natural resources.



Lake Leelanau Narrows

Large and contiguous open spaces should be recognized for their multi-functional values, including wildlife habitats and rural vistas, and be afforded the same protection emphasis as the County's more sensitive resources. This is not to suggest no development should occur in these areas, but that it is more desirable that it be designed to relate to, rather than against nature.

The stewardship ethic should extend to the protection of the County's air and water resources, through continuous air, groundwater and surface water quality monitoring, establishment of base line data and benchmarks, and long term management initiatives, including a County-wide water quality protection program. This program should include specific provisions to assure the adequacy of existing and future private septic systems and wells and standards for underground storage tank operations and activities. All agencies with an interest in the quality of these resources should be included in the development and implementation of the program.

The **General Plan** recognizes that these and other related natural resource protection initiatives would naturally occur within a framework of interjurisdictional coordination and cooperation to assure that the initiatives are County-wide, that they achieve a heightened level of consistency across the County, and that permitting processes are streamlined among the various levels of government.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION POLICIES AND ACTION STATEMENTS

The following goals, objectives and action statements are intended to establish the blueprint of the **General Plan's** vision for sustaining the County's natural resources. It should be noted here, as throughout, that the positions taken in the following policy and action statements were supplied directly by the citizens of the county and not drawn up by a single board, however representative and concerned.

Goal: To Balance long-term economic gain and environmental protection concerns in county and local government policies and programs.

Objective*:*
County and local policies and programs should be drafted and frequently assessed to ensure environmental protection while encouraging appropriate local economic development.

Action Statement:
County and local policy-makers shall document both the environmental and economic effects of policies under consideration.

Goal: Protect air and water quality

Objective*:*
County and local governments should initiate proactive measures to monitor and protect air, groundwater, and surface waters.

Action Statement:
County and local governments should use relevant air and water quality data to establish benchmark standards in Leelanau County. Such standards shall serve as a reference against which future data will be evaluated.

Action Statement:
Continue to maintain and update a well log and septic system database as part of the County's GIS system, using the records at the Benzie-Leelanau Health Department.

Action Statement:
Adopt programs and regulations to ensure safer and more effective on-site sewage disposal and potable water.

Action Statement:
Establish a countywide Water Quality Strategy Plan.

Action Statement:
Provide GIS and other relevant data to local governments and lake associations in the development of watershed management plans to prioritize efforts to protect water quality of inland lakes and streams.

Action Statement:
County government should provide model ordinances for local governments to adopt to protect air and water quality such as lake access and road end access.

Action Statement:
Encourage township use of the EGLE's "County and State Environmental permits checklist" and a hazardous reporting form to ensure environmental issues are adequately considered in the local zoning process.

Action Statement:

County and local governments should utilize the EGLE list of contaminated sites to offer assistance and available resources for cleanup, and provide incentives to identify and cleanup unknown sites.

Objective*:*

On-site sewage disposal and potable water.

Action Statement:

Develop, in concert with other county and local organizations, a program for water quality testing of inland lakes and streams to identify water quality change and the source of any contaminants.

Action Statement:

Work with state and local officials to streamline the process and timeline for onsite sewage and potable water for developments.

Objective*:*

To insure an adequate knowledge and information base for County and Local policy makers in areas related to Air and Water Quality.

Action Statement:

Continuously assess, develop and promote educational material related to the maintenance of air and water quality.

Goal*:* Protect environmentally sensitive areas, including wetlands, dunes, steep slopes, shorelands, and wildlife corridors.

Objective*:*

To initiate proactive measures to protect and enhance environmentally sensitive areas.

Action Statement:

Distribute information identified on the Geographic Information System (GIS) for farmland and environmentally sensitive areas, to various county agencies and local governments, and interested parties such as developers and landowners.

Action Statement:

Establish overlay zoning districts for environmentally sensitive areas through the coordinated actions of county and local government.

Action Statement:

Encourage use of incentive programs to protect environmentally sensitive areas, as well as areas with significant open space and/or scenic vistas. These incentives programs would include the acquisition of fee simple or conservation easements by non-profit organizations. The incentive program should place an emphasis on "filling gaps" between existing preservation holdings to increase ownership of contiguous areas.

Action Statement:

County and local governments should Initiate efforts to establish common protective measures for environmentally sensitive areas that fall across multiple jurisdictions.

Action Statement:

Develop and enact model flexible site development standards to minimize topographic changes, reduce the extent of paved areas, and avoid environmentally sensitive areas wherever possible.

Goal*:* Protect farmland and open space protection, including scenic vistas/corridors.

Objective:

Protect farmland and minimize consumption of open space, including scenic vistas and corridors, from loss through land fragmentation and/or development.

Action Statement:

County Planning should assist local governments by providing model regulations to encourage clustering of new residential development in order to minimize consumption of open space and scenic vistas*.*

Action Statement:

County and local governments should encourage landowners to research and utilize local programs which focus on timberland, wildlife, wildlife corridors, and other natural resources.

Action Statement:

The County should help provide information and materials to educate citizens and local governments about farmland protection options, including capturing the development value of their land.

Action Statement:

The county and local governments should establish future Land Use Plans that focus development in or immediately adjacent to existing villages.



New road construction in Leland Township

Chapter 7

TRANSPORTATION

INTRODUCTION

The daily pattern of nearly everyone's life demands the ability to get from one location to another, preferably in the shortest time possible. Whether it be for employment, recreation, schooling, or shopping, a comprehensive transportation network for vehicles, pedestrians, and bicyclists has become a fundamental necessity. Specialized needs for bulk transport and air transportation are also important. The need for personal mobility is made especially notable by the fact that nearly half of employed residents commute outside of the County to their place of employment. Of equal significance is the role of the tourism industry in the County and the additional demands for efficiency and safety it places upon the County's transportation network.

The network directly impacts the efficiency of emergency services, available personal leisure time, the appropriateness of proposed future land use patterns, and the safety of motorists, pedestrians, and bicyclists. It also affects the rate of County's growth and development, and much more. The **Leelanau General Plan** recognizes the critical role transportation plays, and recognizes that improvements to the network must be strategically planned in coordination with the achievement of other key components of the County's life and its future.

ISSUES

Road Network

Leelanau County faces a number of crucial challenges in the provision of an efficient and safe transportation network. See Map 7-1. The most fundamental challenge is maintaining the extensive road network that is already in place and where necessary, expanding the network to

Nearly half of employed residents commute outside of the County to their place of employment.

improve traffic flow, safety and efficiency. This challenge is greatly affected by the County's abundant natural resources, including its hillsides and lakes. Rolling topography and large inland lakes provide unmatched scenery and, at the same time, have resulted in a somewhat circuitous roadway network. As population increases, the result is experienced in an increase in travel times, automobile emissions, automobile and truck operation costs, and congestion in some places.

The existing roadway network is further challenged by the fact that it operates within a relatively limited hierarchy of road types. The challenging route location, with many 90 degree turning patterns and many limited sight distances greatly reduces the potential to move traffic safely and efficiently at normal highway speeds. As such, they provide less support for the system than roads built to comparable standards elsewhere.

The winding nature of the majority of the County's roads, resulting in limited sight distances, presents numerous safety hazards. Additional road use by residents and visitors will likely result in more traffic accidents. The often limited lane widths and, at places, absence of adequate shoulders increase the level of safety hazards still further. These conditions present equally unsafe conditions for pedestrians, bicyclists, and snowmobilers along the roadways. This is of particular significance as the County attracts some of the most extensive biking opportunities and biking tours in Michigan. On the other hand, these winding roads force slower speeds and provide opportunities for enjoying the unsurpassed beauty in the County.

Level of Service

Adding to the complexity of the transportation challenges is the fact that County transportation is automobile dominant. Limited opportunities currently exist for alternative modes of transportation. Alternative modes might otherwise reduce the demand upon the County's roadway network, such as the Bay Area Transit Authority (BATA) which operates a bus service in the County, including regularly scheduled, fixed-route services, a summer route program, specialty service for the seniors, and a "dial-a-ride" door-to-door service. While bike/pedestrian lanes are being developed in some areas of the County, road segments specifically designed to accommodate pedestrian and bicycle traffic are limited. According to Michigan Public Act (PA) 135 of 2010, a Complete Street provides "appropriate access to all legal users in a manner that promotes safe and efficient movement of people and goods whether by car, truck, transit, assistive device, foot or bicycle." Complete Streets is an approach to transportation planning and design that considers appropriate access for all legal roadway users in the various phases of a transportation project. Local units of government may develop and adopt a local Complete Streets policy.

According to the 2018 Planning Questionnaire, 61% of responders felt bicycling and walking paths were an important quality in Leelanau County. Bike lanes have been added to M-22 between Leland and Northport. The Sleeping Bear Heritage Trail is a

17 mile trail (mostly off-road) running from Empire to County Road 669 in Cleveland Township, with another stretch to be developed between 669 and 651. The Leelanau Trail is a 17 mile long trail along former railroad corridors running from Greilickville and ending a few miles north of Suttons Bay. Airplane facilities are limited and rail service is no longer available.

The resultant overall level of service along roadways has declined over the years as the County has experienced growth and development. The ability of the County Road Commission to maintain or improve the level of service along the network, either through general maintenance, incremental improvements, or major construction projects, become increasingly difficult if available revenues don't keep up with needs. The most needed projects in the County (rebuilding some existing roads and solving a few congestion problems) are those which require massive amounts of expenditures.

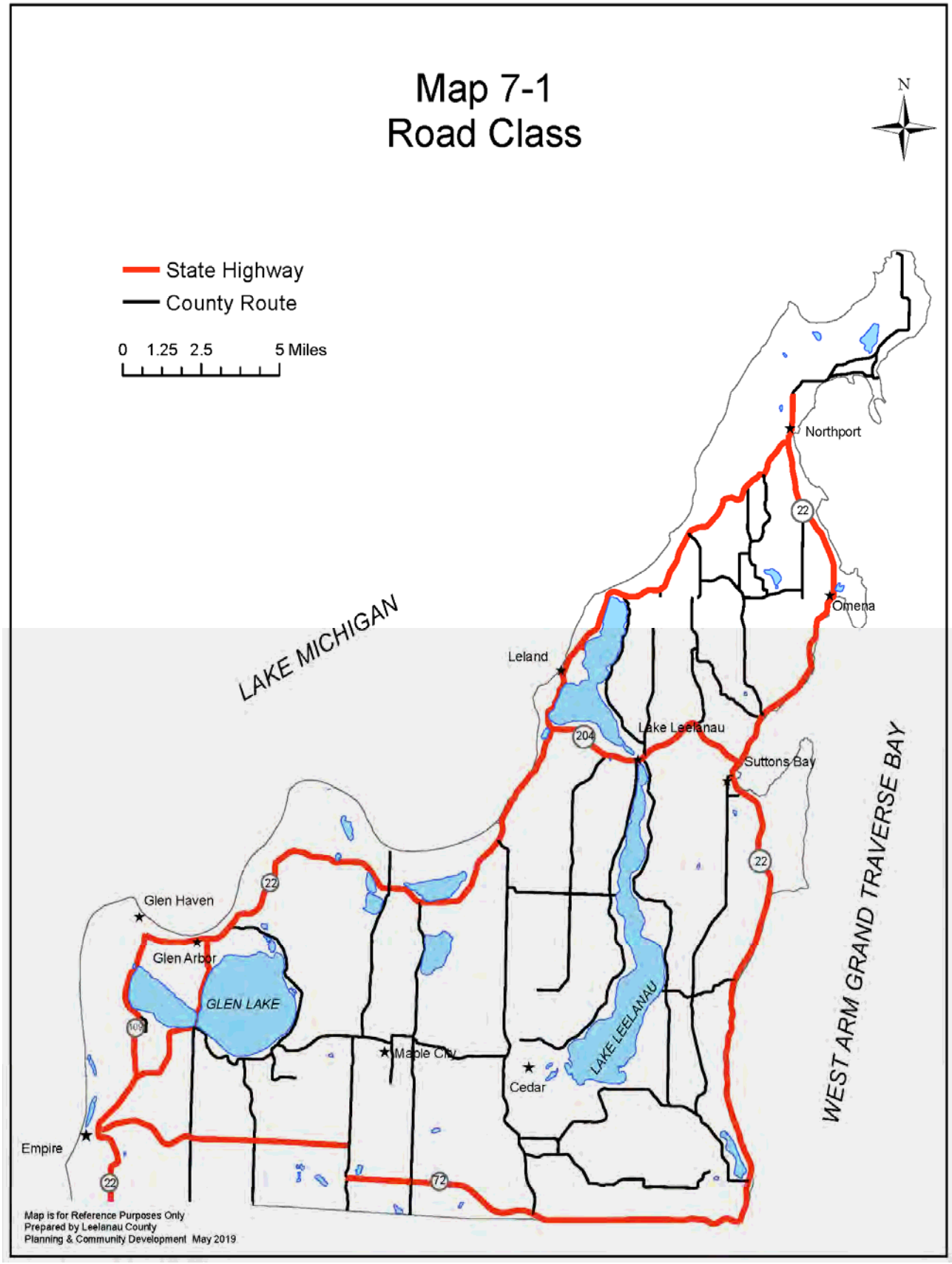
The most fundamental challenge is maintaining the extensive road network that is already in place and where necessary, expanding the network to improve traffic flow, safety and efficiency.

It can be expected that transportation conditions will worsen in the County if current trends and conditions continue. Growth and development will further increase the number of vehicles on the County's roads. These increasing demands on the roadway network will further challenge the network's level of service. Significant decreases in service may be unavoidable in some places. The resulting lower levels of service will be reflected in increased congestion, extended travel times, higher maintenance costs, higher rates of vehicular and non-vehicular accidents, and longer emergency response times.

Safety hazards along the roadways will not be a result of increased traffic levels alone, but will also be a result of the rise in the number of driveways, street intersections, and other new access points along major corridors resulting in hazardous turning patterns, stop and go traffic, and congestion. Land acquisition costs for widening road right-of-ways to accommodate road improvements will be more costly due to the high cost of land in the County as market trends boost property values. According to the 2018 Questionnaire, 80% of responders felt that the County Roads were well maintained, while 20% felt they were not.

While problems associated with population growth and development are the impetus behind many of the County's road improvements, some improvement projects sometimes fuel the development that causes these problems. Roads designed for a high volume of traffic may be viewed at times as an incentive to developers. Better roads are more attractive for development than those that are gravel or unimproved. This improvement of rural roads, and the development that typically follows, can have an impact on the County's rural character.

The road network in the County serves to get people from one place to another without the frequent delays common in urban areas. However, without improvement, some problems will worsen in the next decade.


Map 7-1
Road Class
N
State Highway
County Route
0 1.25 2.5 5 Miles
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Northport
Omena
Leland
Lake Leelanau
Suttons Bay
Glen Haven
Glen Arbor
GLEN LAKE
LAKE LEELANAU
Maple City
Cedar
Empire
22
204
109
72
Map is for Reference Purposes Only
Prepared by Leelanau County
Planning & Community Development May 2019

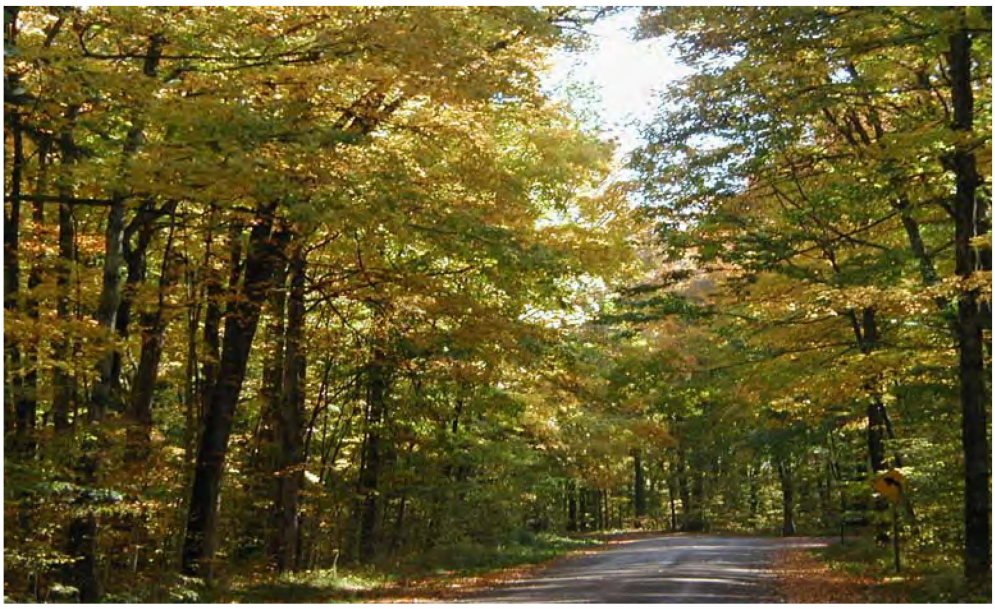
A FRAMEWORK FOR FUTURE POLICY

The transportation issues facing the County today and projected for the future if current trends continue, dictate a far more proactive stance to assure transportation needs are met. It is the intent of the **General Plan** to provide the guidance for a proactive approach to comprehensive transportation planning throughout the County.

The Road Commission develops a list of needed improvement projects for primary roads and ranks these projects in order of priority. Road work also includes culverts, rumble strips, tree removal and safety improvements. Since 50 percent of the funding for many road improvements comes from local municipalities, the Road Commission is often reluctant to initiate road projects. Instead, the Road Commission responds to requests from the townships. The requests are usually for immediate improvements. Each year individual townships prioritize projects depending on the funds that they have available. When the Road Commission improves a road, it tries to include paving wider shoulders for pedestrians and bikes.

It is very desirable that all road improvement projects should recognize the scenic character of the County's roadway corridors and attempt to preserve the natural character elements. Classification of some roads as "scenic" or as "natural beauty roads" should be pursued based upon inventory data and long range plans.

This **General Plan** proposes far more substantive efforts directed at establishing a stronger multi-modal transportation network in the County than has previously been invested. This effort will minimize demands upon the County's roadway network and improve safety. Transportation planning should recognize multi-modal trends and include provisions for the respective safety of motorists, pedestrians, and bicyclists. Programs to be established could include comprehensive County-wide bicycle systems and improved pedestrian systems in villages and other small



Bohemian Rd (Co Rd 669), Cleveland Township

settlements. These systems should be planned and designed to provide safe and functional linkages between existing villages and future settlement areas, shopping areas, recreational facilities and employment centers. New residential, commercial, and industrial land uses should be designed to provide continuity to existing and future pedestrian/bicycle systems. The systems would accommodate travel by the physically handicapped and, to the extent road right-of ways are used, should be afforded adequate shoulder and pavement construction. According to the 2018 Planning Questionnaire, 50.36% of responders (non-students) felt that bicycling and walking paths were very important and 37.15% felt they were important. And 40.87% of student respondents felt that bicycling and walking paths were very important and 46.83% felt they were important. 90.5% of respondents use a personal car to get from home to work and other activities, 30.8% walk, 10.2% bike on trails, 7.9% bike on roads, 5.4% carpool, and just 1.6% use BATA.

Minimizing demand upon the County's vehicular network should also maximize the utility of the Bay Area Transit Authority (BATA). BATA's current services and operations should be reviewed and evaluated to identify priority service areas and needs, the extent to which service needs are being met, and opportunities for improved and expanded service areas and daily schedules. Increased operations efficiency and new and alternative funding mechanisms should also be explored.

The future operations of BATA and other potential transit systems should consider linkages between neighborhoods providing affordable housing opportunities and centers providing employment to neighborhood residents. Multi-modal transportation planning should be expanded to include new opportunities for the transporting of goods. These expanded opportunities should be implemented only after careful evaluation of applicable County travel patterns including trip generation, origin-destination, and destination-location studies. Investigations should be encouraged by the private sector into ferry services for commuters and tourists. Employee transit programs should also be examined. Efforts should be directed to assure the long term continuation of commercial air services in close proximity to the County and protection of glide paths to and from existing airports.

The development of consistent County-wide private road regulations should be encouraged. Assuring adequate construction, operation, and maintenance of these roads is critical in protecting the safety and welfare of County residents and visitors and minimizing the road maintenance burden of existing residents. Access for emergency vehicles should be encouraged for private roads.

The **General Plan** recognizes that all of the transportation planning efforts within the County must occur under an umbrella of strong interjurisdictional coordination. This coordinated County-wide planning effort among local municipalities, the County Planning Commission and Board of Commissioners, the MDOT, the Road Commission, and the Grand Traverse Band of Ottawa and Chippewa Indians must address the need for a County-wide functional circulation network that meets the needs of all users. Coordination of all capital improvements, and the scheduling thereof, should be pursued to better assure the acquisition of needed rights-of-way and minimize network disruptions.

TRANSPORTATION POLICIES AND ACTION STATEMENTS



Parking problems in Leland have led to an assortment of parking regulations.

The following goals, objectives and action statements are intended to set up a blueprint for the **General Plan's** recommendations for the County's transportation system. All statements are intended as proposals, not directives.

Goal: Development of a long term road and multimodal transportation plan.

Objective:
The County Road Commission should continue to work on long-term planning for primary road improvements. Planning for long-range improvements to the local road system should be developed with significant input from each township.

Action Statement:
The County Road Commission should obtain significant input from each township to develop long-range, prioritized improvements to the local road system. Identify any new sources of funding for implementation.

Action Statement:
Work on meeting non-motorized needs, especially for an integrated network of bicycle lanes and of a pedestrian friendly sidewalk system in villages and other pedestrian areas. Plans should also be considered by the County Board, Planning Commission, townships, and villages to identify appropriate sources of funding to expand the existing network of independent non-motorized trails.

Action Statement:
Coordinate road improvement projects with neighboring counties.

Goal: Safe and adequate road network to accommodate motorized and non-motorized traffic.

Objective:
Identify and explore opportunities for safety on all roadways.

Action Statement:
MDOT and the Leelanau County Road Commission (LCRC) should commit to construction specifications including road shoulders of adequate width to accommodate bicycle and pedestrian traffic.

Action Statement:
Networks Northwest, BATA, and County and local governments should work together to investigate alternative transportation methods.

Action Statement:
The LCRC and local governments should assess the benefits of adopting local Complete Streets policy, per A 135 of 2010.

Goal: Identification and funding of the "Class A" (all-season) road network.

Objective:
The LCRC with the assistance of the County Board of Commissioners and all other municipal governments, should explore all funding sources to create and improve "Class A" (all-season) roads in the County.

Action Statement:
The LCRC should work with the Grand Traverse County Road Commission, the City of Traverse City, Traverse Transportation Coordinating Initiative (TTCI), and the Michigan Department of Transportation to review and establish the need for a beltline route around Traverse City to minimize summer traffic congestion, allow farm vehicles to travel around (rather than through) the city, and to route through traffic to avoid time delay and safety hazards associated with unnecessary trips through the center of the city.

Objective:
County government should work with the Bay Area Transportation Authority (BATA) to be sure that public transportation needs are evaluated and accommodated efficiently and economically.

Action Statement:
Leelanau County and the LCRC should join with citizens and local governments to support the operations of the Bay Area Transportation Authority as the primary mechanism for meeting the needs of mass-transit dependent individuals in the County.

Objective:
MDOT and the County Board should work with the Grand Traverse Band of Ottawa and Chippewa Indians (GTB), the Traffic Safety Commission, and other organizations to fund safety improvements along the Traverse Citye Northport Corridor.

Action Statement:
The GTB and MDOT should investigate ways to most efficiently move casino related traffic throughout the Traverse City - Northport corridor.

Action Statement

The GTB and MDOT should identify traffic hazards along the corridor, then prepare a program to correct the identified deficiencies.

Action Statement:

Support grant applications submitted by the Road Commission for road improvement projects.

Goal: Protect scenic quality of roads.

Objective:

A special effort should be made to protect the scenic character of roads when necessary road improvements are made.

Action Statement:

Road improvements should be undertaken with both the existing and expected future traffic volumes of the road in mind, in order to assure that design will function appropriately.

Action Statement:

The County should support the efforts on the part of local governments and citizen groups to inventory the scenic character of state and County roads, initiate scenic highway and/or natural beauty roads designation on key non-arterial roads or road segments and once designated as a scenic highway and/or natural beauty road, future road improvements should respect and/or enhance the scenic character of the road and immediate environs to the extent possible without compromising safety.

Action Statement:

Leelanau County governments should seek federal financial supplements for maintenance of roads within the vicinity of the Sleeping Bear Dunes National Lakeshore.

Chapter 8

PUBLIC FACILITIES AND PHYSICAL SERVICES

INTRODUCTION

Within the context of the **Leelanau General Plan**, public facilities and physical services are generally limited to the areas of recreation, libraries, cemeteries, sanitary sewer, potable water, storm sewer, administrative offices, and fire and police protection. These services differ in character from the many other so called "human" services also provided in the County by governmental agencies. Public facilities and physical services are generally very tangible services based upon land resources, capital, and/or infrastructure, such as a playground, fire truck, or stormwater retention pond. Human services have a different service delivery system and generally address personal and/or family assistance, such as employment and senior citizen programs.

The provision of public facilities and physical services to people and property directly impacts public health, safety, and welfare and, as a result, the quality of life across the County. Provision of public facilities and physical services by municipalities (including the County) in the County is not extensive. See Maps 8-1 through 8-3. Yet, the desire to possibly expand such services must be given careful consideration. Improperly planned, the expansion of public facilities and physical services can contribute to urban sprawl and uncontrolled growth - conditions which are already present and which have been identified as destructive to the County's future. The **General Plan** addresses the future scope of public facilities and services in the County within this context.

Decisions on whether and if so, where, to place/offer new public facilities and physical services is one where this plan can have a very significant impact. This is true for decisions at both the local level as well as on the County level. Where public sewer lines, water mains, schools, and government buildings are placed will have a lot to do with the nature and type of future growth that occurs. It thus becomes vital that the planning and implementation of future public facilities and physical services be done within a generally accepted framework based on intergovernmental coordination and open communication.

ISSUES

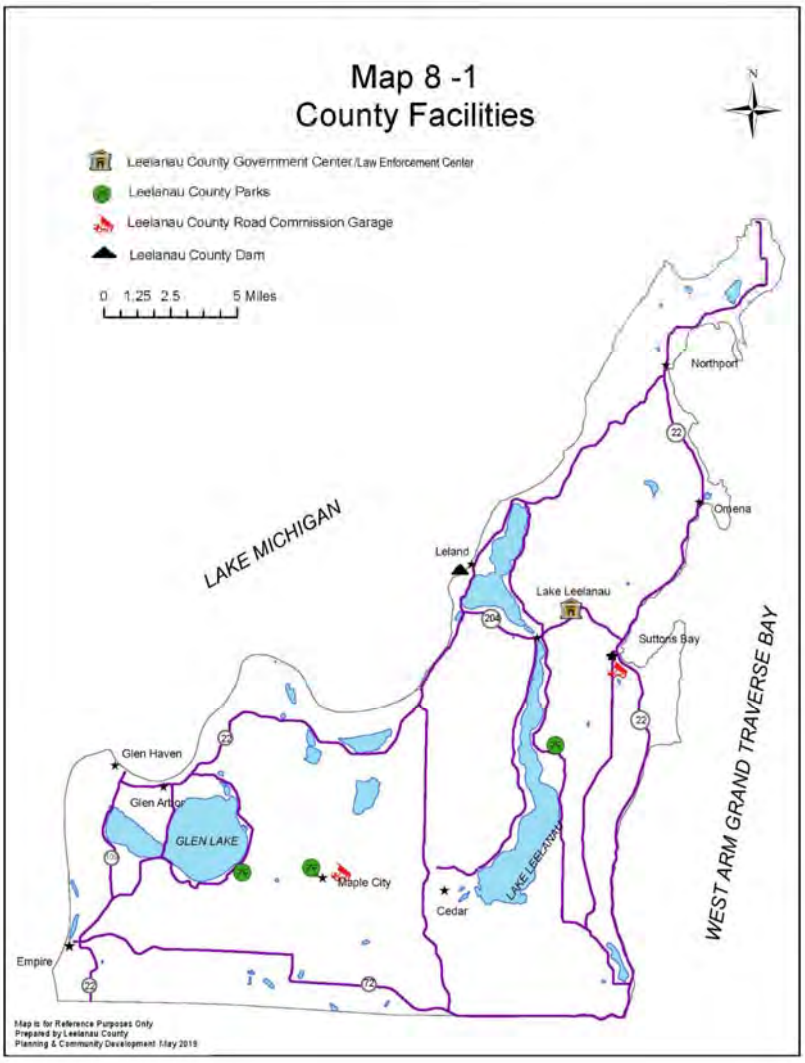
Sewage Disposal

Individual septic systems are the most common sewage disposal method in the County. On-site septic systems prevail across the County, except for parts of Elmwood Township, the Village of

Suttons Bay, portions of Leland Township, Sugar Loaf, the Homestead Resort, Village of Northport, and Peshawbestown, which operate public sewer systems. See Map 8-2. The oldest of the systems was constructed in the 1930's in Suttons Bay and it has undergone numerous improvements and expansions over the years. Leland Township's system was completed in 1993 and has undergone periodic reviews with regard to discharge levels of effluents and potential problems with the system. In 2008, Northport completed construction of a new waste water treatment system, as a joint venture between the Village and Leelanau Township. All of the systems were installed to provide a safe level of sewage disposal that was not otherwise available through on-site septic systems.

These systems permit higher development densities than on-site septic systems but may also carry a higher hookup cost than an onsite septic system. Public sewers can contribute to a more compact development pattern or, if poorly planned, to greater sprawl. Thus, how future growth is managed where public sewer service is present, is a critical quality of life consideration.

The resolution of these issues in the above communities and any others with expanded public facilities in the future may have County-wide implications due to impacts on traffic levels, tourism, and other growth stimulating activities.



Water Supply

As with on-site sewage disposal systems, nearly the entire County relies on individual private wells for potable water. The only municipalities to provide public water systems are Elmwood Township, Peshawbestown and the County's three Villages. The oldest of the systems was constructed in the 1890's in the Village of Empire and it has undergone numerous improvements and expansions over the years. Like the public sewer systems, these public water systems can permit higher development densities and a more compact development form.

Like the issues facing those municipalities with public sewer systems, the same growth management issues apply. The available excess capacity of these water systems should be managed in view of the resulting implications upon the local growth rates and development patterns. The master plans of these communities can provide guidance in the way of how, under what conditions, and at what rate water system expansions should take place.

Stormwater Management

Stormwater management was traditionally geared toward minimizing flood conditions and the resultant damage to and/or loss of life and property. It has, in more recent years, been expanded to place equal emphasis on controlling the quality of stormwater runoff before it is discharged into watercourses in order to protect them from sedimentation and water-born pollutants.

As important as stormwater management is, only one of the County's municipalities, the Village of Suttons Bay provides for stormwater management beyond storm pipes and drains along sections of main roads. The village also provides a sedimentation basin. The Village of Northport has added some storm water controls. The County has a stormwater ordinance (along with soil erosion control) that all commercial earthwork must follow—including a plan for stormwater control submitted along with a permit application.

Stormwater runoff quantities increase as vegetative cover is removed and buildings, roads and parking lots are created. Sedimentation and water pollutants also increase with stormwater, further highlighting the need for adequate runoff quality control. The impervious surfaces associated with future development will place increased demands upon existing stormwater infrastructure and may create flood conditions in those areas where such infrastructure does not exist. Current local plans and ordinances need to stress the importance of adequate stormwater management, both on a site specific scale or across the whole municipality. Despite the porous (well drained) soils that cover much of the County, stormwater management will become an issue of greater importance as growth continues.

Emergency Services

While emergency services are taken for granted in more urbanized areas, there is often increased awareness of the presence or absence of emergency services in rural areas such as Leelanau County. Emergency services take on a special importance in the County where there are few emergency medical facilities and considerable distances to travel. Fire Services are comprised of eight fire departments in Leelanau County; Northport, Grand Traverse Band, Suttons Bay, Leland, Cedar, Glen Lake, Elmwood, and Traverse City Fire. Traverse City Fire Department is responsible for the annexed area of Elmwood Township that is under the jurisdiction of Traverse City.

All departments are members of the Michigan Mutual Aid Box Alarm System (MABAS) and cooperate on the same regional team as departments from around Northern Michigan, including Grand Traverse County. Being part of MABAS, each Leelanau County fire department divides their jurisdiction into "boxes" which defines their response capabilities (i.e. areas with fire hydrants, tall

structure which would require ladder trucks, etc.). See Map 8-4. Insurance Service Organization (ISO) assigns ratings (1 to 10, with 10 being the lowest rating) to fire department jurisdictions based on the level of service capable by that department. The vast majority of areas greater than 5 miles away from any fire station receive a rating of 10. Exceptions include Suttons Bay Township (6), Bingham Township (6), Glen Arbor Township (7) and Empire Township (7). All villages and areas within 5 miles of any fire station receive ratings between 4 and 7.

All departments with the exception of Grand Traverse Band have full-time staff providing 24/7/365 coverage to their area. Glen Lake, Leland, Suttons Bay and Northport provide Advanced Life Support (ALS) emergency medical services. Cedar and Elmwood provide Basic Life Support (BLS) emergency medical services and contract ALS services through neighboring agencies. Grand Traverse Band contracts all emergency medical services through Suttons Bay.

Law Enforcement agencies in Leelanau County include the Sheriff's Office, Grand Traverse Band Tribal Police, Michigan State Police, National Parks Service, and Michigan Department of Natural Resources. The Leelanau County Sheriff's Office provides a wide scope of services including jail administration, court bailiffs, marine patrol, animal control, and deputies assigned specifically to Leelanau Township and Suttons Bay Village. The Grand Traverse Band Tribal Police are deputized by the County Sheriff to handle complaints outside of the jurisdictional boundaries of the reservation. The Michigan State Police assign 2 Resident Troopers to patrol Leelanau County. The National Parks Service patrols the Sleeping Bear Dunes National Lakeshore, which has a Leelanau District and Platte River District (Benzie County). Increases in population, both seasonal and permanent, result in increased pressure for additional law enforcement services.

Administrative Facilities

Administrative facilities throughout the County are comparatively limited. Most of the local municipalities have formal administrative offices but many of these offices have limited business hours. The only other local administrative facilities are the maintenance and/or garage facilities of the County's three village municipalities. The Grand Traverse Band of Ottawa and Chippewa Indians operates a number of offices in Peshawbestown, including public safety, tribal courts, clinical facilities, and community centers. The new administrative facility for Leelanau County was completed in 2008 just east of Lake Leelanau, with offices for the prosecuting attorney, treasurer, clerk, accounting, probate, register of deeds, district court, the Board of Commissioners, planning, equalization, inspections, commission on aging, drain commissioner, Veterans Affairs, and MSU Extension. A new jail facility, including offices for the Sheriff's Office, dispatch, and emergency services, was constructed on the same site in 2004. The Benzie-Leelanau Health Department is located nearby, in the Connie Binsfeld building. The Road Commission's administrative facilities are located in Suttons Bay.

Recreation Facilities

The present total public recreational acreage, not including state and federal facilities, exceeds the normally accepted standard of 10 acres per 1,000 persons. Available recreational activities include birding, biking, boating, fishing, hiking, picnicking, cross-country skiing, snowmobiling,

snowshoeing, swimming, and many others. However, accessibility is a problem in that many facilities are not located near population centers. The majority of facilities, including two County parks, are located on the west side of the County, away from most population centers. No public trail system exists between parks to facilitate non-road park to park access.

Library Facilities

Four of the County's municipalities operate library facilities including the Villages of Empire and Suttons Bay and the Townships of Leelanau and Leland. Library "loan programs" exist in some areas of the county such as Maple City, Cedar and Lake Leelanau. Residents can borrow books from established locations and return them when finished. Though generally accepted "volumes of books per capita" standards are met, access to the library facilities is limited. While access is convenient for those living within the village areas where the facilities are located, access to such services is far more limited to the vast majority of the County area.

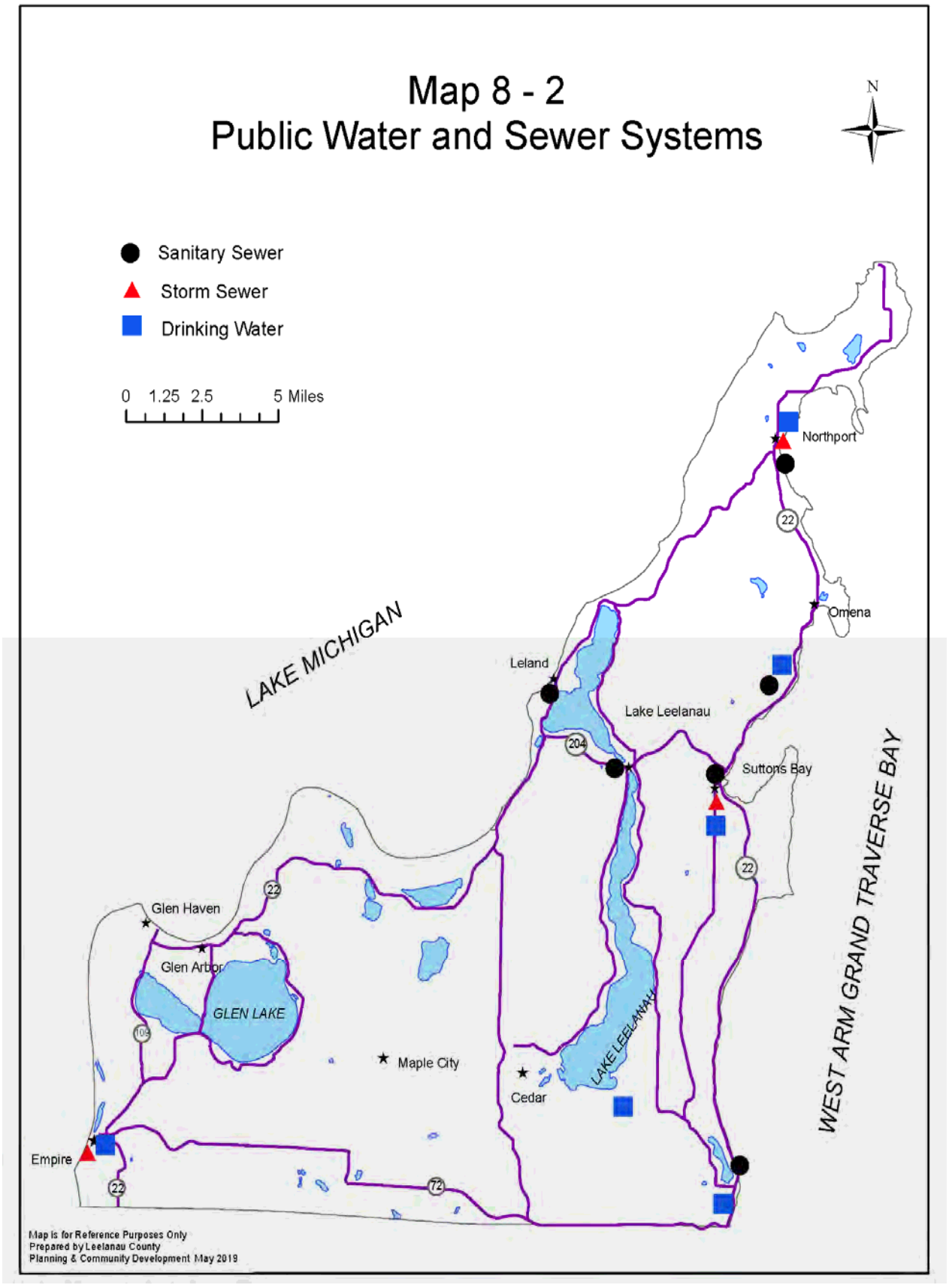
Solid Waste

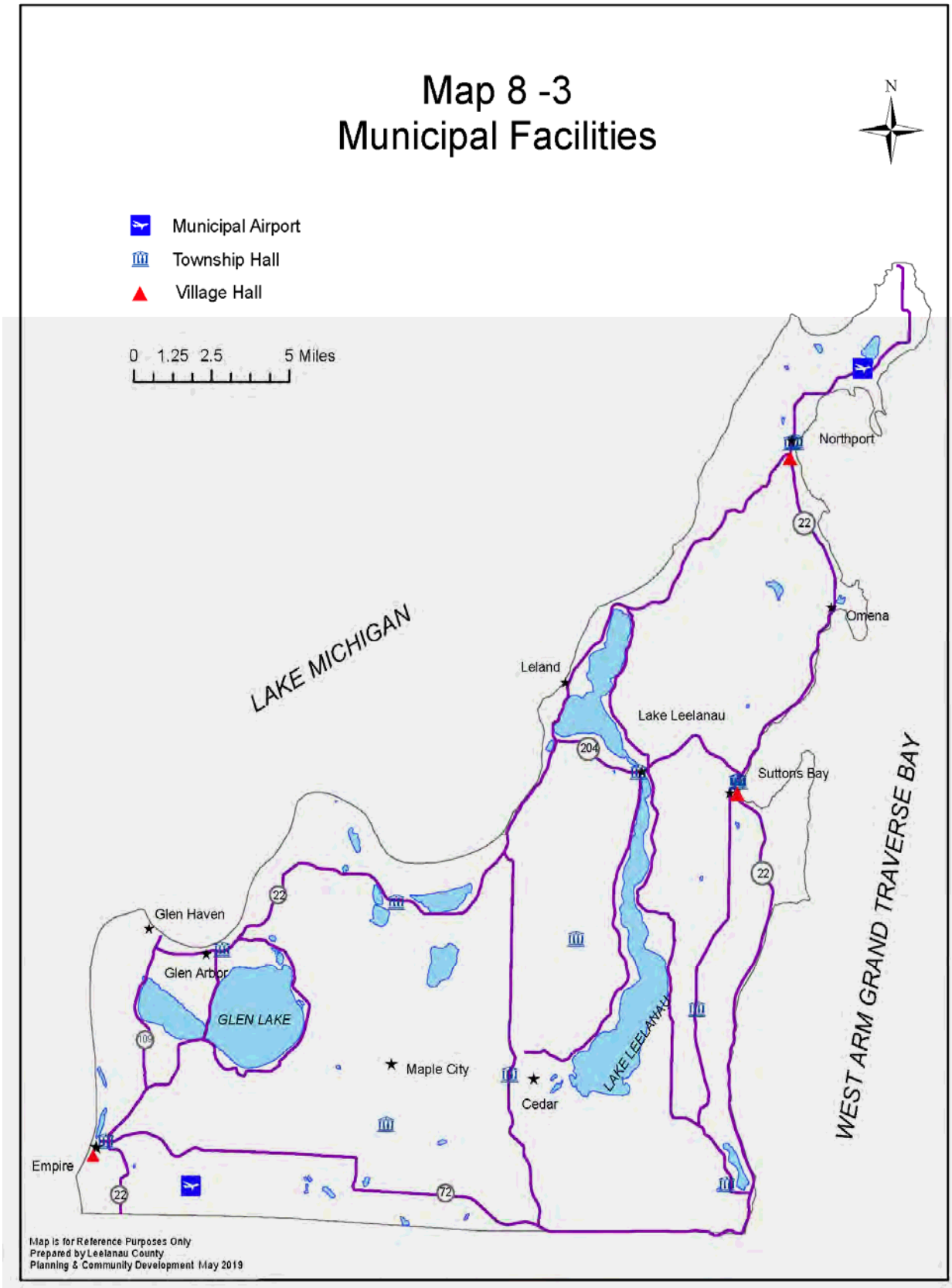
Since 1983, nearly all of the Type II solid waste collected in Leelanau County has been disposed of at Glen's Sanitary Landfill in southern Kasson Township. Glen's Sanitary Landfill, the only landfill facility in the County, has a life expectancy of over 60 years. The County is presently serviced by several solid waste haulers. Due in large part to a low population density of the County and surrounding counties, Glen's Sanitary Landfill is dependent upon regional users of its facility.

The Natural Resources and Environmental Protection Act, 1994 PA 451, as amended NREPA), Part 115, Solid Waste Management, and its Administrative Rules, requires each County to have a Solid Waste Management Plan Update (Plan) approved by the Michigan Department of Environment, Great Lakes & Energy (EGLE). In December of 1999, the Update to the Leelanau County Solid Waste Management Plan was approved by the state. The Plan includes goals and objectives, and selected alternatives.

Implementation of the selected alternatives will take advantage of, where possible, opportunities for collaboration and coordination with neighboring communities and counties in the region. This effort will focus on opportunities for disposal capacity, recycling and composting processing capacity, residential and commercial solid waste, and recycling collection programs, household and agricultural hazardous waste programs, enforcement, education and outreach.

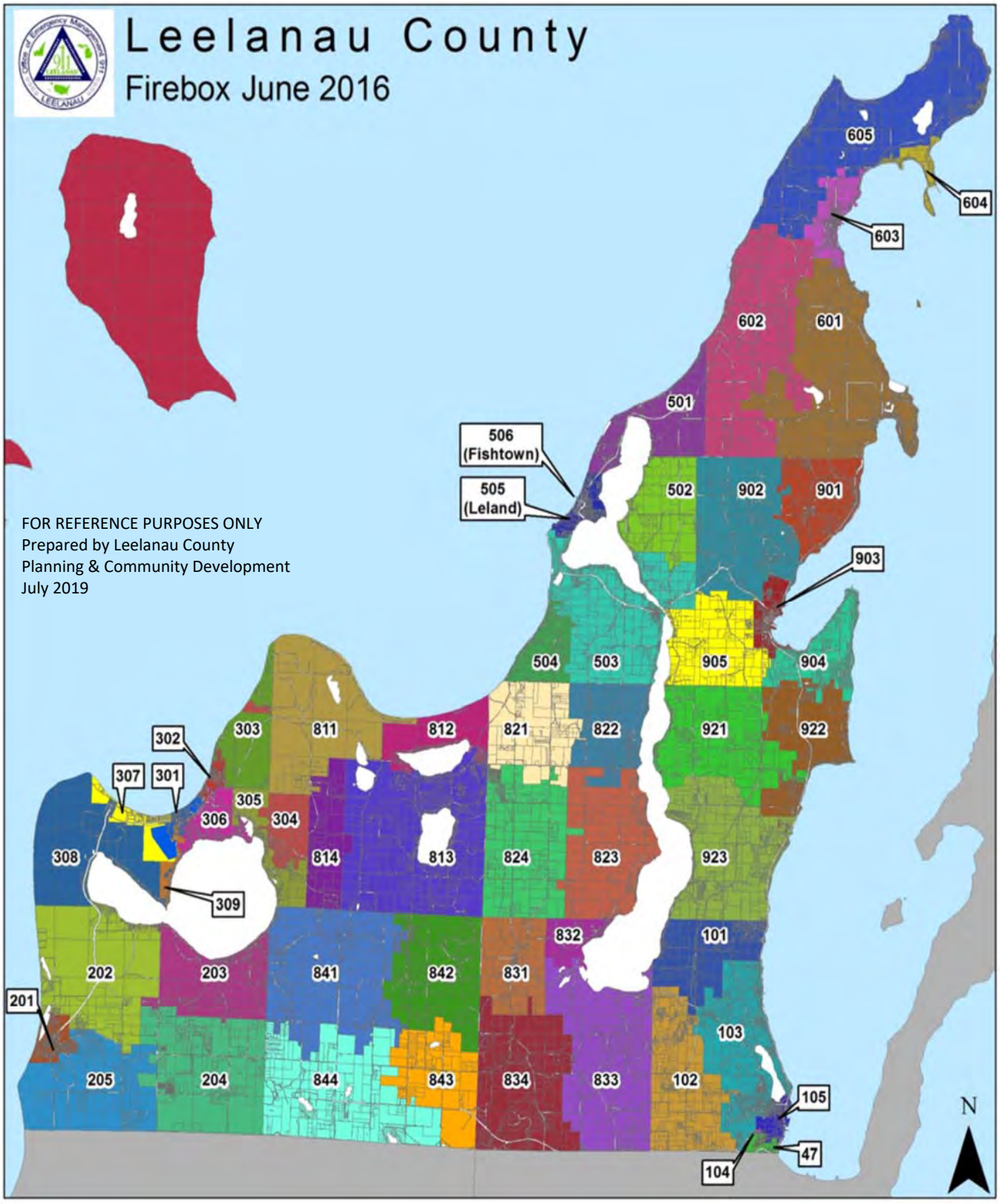
The County will need to continue a strong solid waste management program to ensure licensed facilities are available to meet its needs. It will also be important to increase emphasis on "reduce, reuse, recycle" and related education programs. Yard wastes were banned from landfill disposal by state law in 1995. At issue in the County will be the growing need to expand recycling, composting, and household waste, electronics, and scrap tire collection programs as community support grows. According to the 2018 Planning Questionnaire, nearly 70% of residents felt curbside recycling was needed in towns and villages throughout the County. These programs will require additional funding.


Map 8 - 2
Public Water and Sewer Systems
N
Sanitary Sewer
Storm Sewer
Drinking Water
0 1.25 2.5 5 Miles
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Northport
Omena
Leland
Lake Leelanau
Suttons Bay
Glen Haven
Glen Arbor
GLEN LAKE
Maple City
Cedar
LAKE LEELANAU
Empire
22
204
109
72
Map is for Reference Purposes Only
Prepared by Leelanau County
Planning & Community Development May 2019

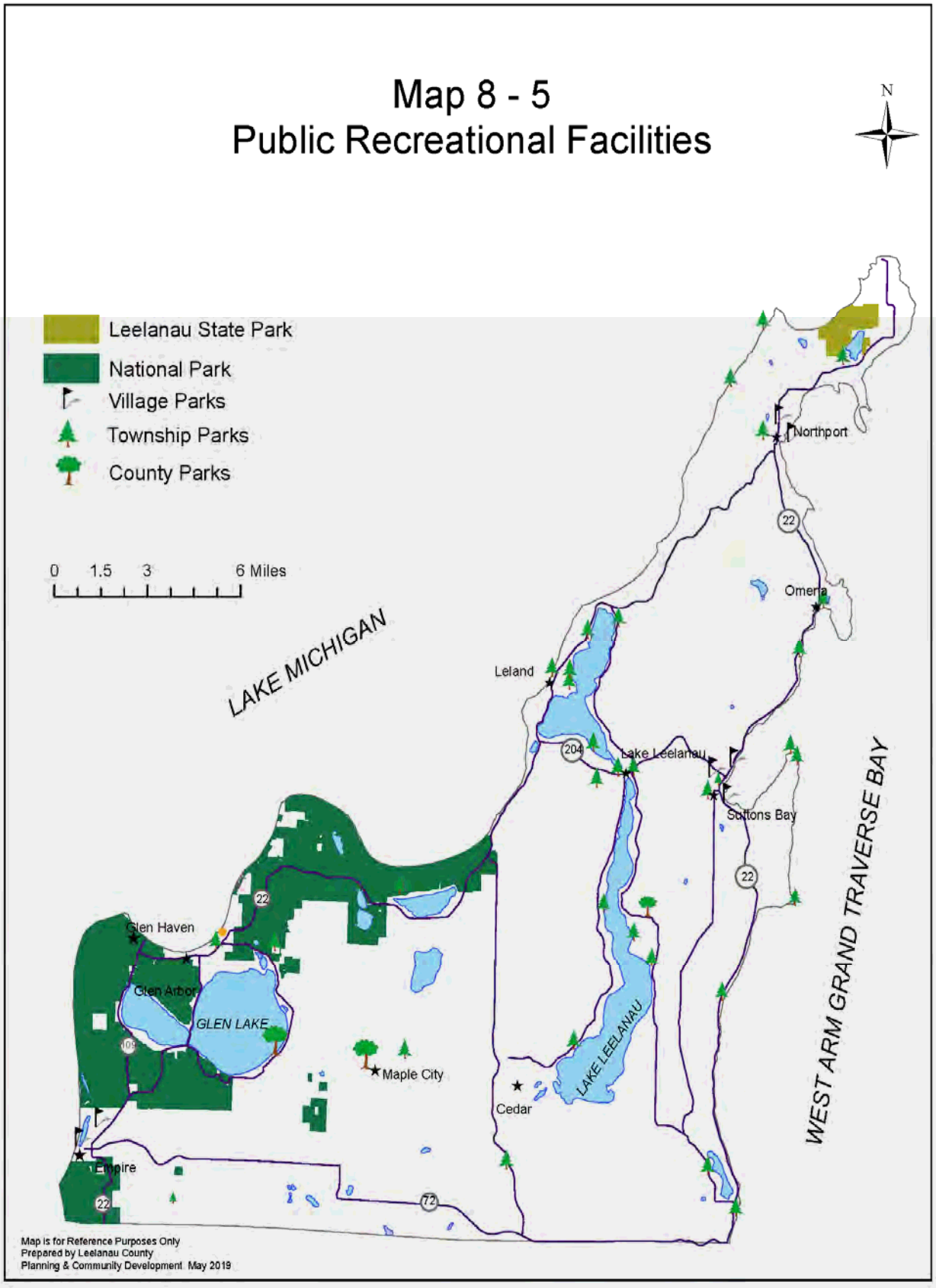

Map 8 -3
Municipal Facilities
N
Municipal Airport
Township Hall
Village Hall
0 1.25 2.5 5 Miles
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Northport
Omena
Leland
Lake Leelanau
Suttons Bay
Glen Haven
Glen Arbor
GLEN LAKE
Maple City
Cedar
LAKE LEELANAU
Empire
22
204
109
72
Map is for Reference Purposes Only
Prepared by Leelanau County
Planning & Community Development May 2019

Map 8-4

Fire/Emergency Service Areas



Map 8 - 5
Public Recreational Facilities



A FRAMEWORK FOR FUTURE POLICY

Public facilities and physical services will play a major role in shaping the future character of the County and its overall quality of life. The **General Plan** recognizes the intrinsic relationship between the County's future and the programs within which public facilities and physical services are to be provided and/or delivered.

The plan calls for the establishment of a program for the expansion and improvement of public facilities and physical services in a manner which discourages sprawl and promotes compact settlement patterns. This may be accomplished in part through specific public services districts.

Use of service districts underscores the necessity for interjurisdictional coordination and the plan calls for such cooperation as part of this public facilities and physical services program. Critical considerations in this regard include the identification of service district boundaries, the coordination of capital improvements among municipalities, and the phasing of capital improvements to the benefit of both the local municipalities and the County as a whole.

Closely linked to the interjurisdictional treatment of future County public facilities and physical services is the establishment of uniform minimum service level standards for all future new developments. "Level of service" refers to the level at which a public service is operating, or the "adequacy" of the service. By incorporating minimum level of service standards into local regulations and plans, municipalities will be able to both monitor the quality of services delivered as well as assure new development does not occur unless necessary public services to support the proposed development are in place (or in place when the development becomes operational). Minimum service level standards in a village should address: 1) adequate sewer and water service, including pipe widths, flow rates and capacities, construction, and related considerations; 2) adequate stormwater management controls including retention ponds, sedimentation ponds, erosion control, and related considerations; and 3) availability of emergency services.

Future public facilities and physical services must address the solid waste management situation and should be founded upon a periodically updated comprehensive solid waste management program. Strategies should be developed to effectively examine alternatives to reduce the waste stream and ensure backup space in other landfill facilities. In particular, the feasibility of curbside recycling in densely populated areas and ongoing recycling drop-off capabilities should be reviewed. Efforts will need to be directed at developing prototype designs for integrated solid waste management stations capable of accommodating the full scope of solid waste management operations including recycling, drop-offs, composting, and transfer stations.

Funding alternatives to property taxes, such as revenue bonds and special assessments, should be evaluated for all future public facilities and physical service improvements and expansions. Funding mechanisms should take into consideration the beneficiary of the improvement, the availability of state and federal grant dollars, user fees, and other available mechanisms.

In addition to the need for an interjurisdictional approach to the provision of public facilities and physical services on the County, this plan advocates a far more active role by the general public regarding future decisions on improvements and/or expansions of public facilities and

physical services. In addition to improving public awareness of the issues through education so more informed decisions can be made, specific steps could be taken to actively solicit public input, including more convenient access to local administration offices and municipal staff, and holding public hearings as alternative solutions are devised.

PUBLIC FACILITIES AND PHYSICAL SERVICES POLICIES AND ACTION STATEMENTS

The following policies objectives and action statements are intended to establish the blueprint for implementing the **General Plan's** recommendations for the future of the County's public facilities and physical services.

Goal: Capital Improvements Programming.

Objective
County and local governments should adopt and annually update capital improvement programs for the purpose of assuring and coordinating necessary improvements and expansions to public facilities and services compatible with local comprehensive land use plans and the **General Plan**.

Action Statement:
The County Planning Commission and Planning and Community Development office should prepare and regularly update a comprehensive listing of all proposed, under construction, and completed County and local capital improvement projects including but not limited to information on project type, location, cost, funding source, timing and implementation .

Action Statement:
The County Board of Commissioners should annually update a comprehensive capital improvements program consistent with the **General Plan**, which is first reviewed and recommended by the County Planning Commission.

Action Statement:
Local governments should prepare, adopt and annually update a comprehensive capital improvements program compatible with the policies of their comprehensive land use plans and the **General Plan**, and which is first reviewed and recommended by the local planning commission.

Action Statement:
New public facilities or major expansions or replacements of existing public facilities should be included in an adopted local or County CIP.

Goal: Protecting groundwater.

Objective:
Every effort should be made to protect our groundwater as it is crucial to protecting our lakes and streams, and to avoid the burden of supplying extensive municipal sewer and water systems in the future.

Action Statement:
The County should take a lead role in seeing that septic systems and wells are properly maintained, since this is essential to the protection of groundwater.

Action Statement:
In addition to keeping current records of septic system and well permits, the health department should update past records to the extent reasonably feasible.

Action Statement:
The County should require that septic systems and wells be certified by the health department to be in compliance with present standards, whenever property changes ownership. In time, a system of periodic inspection of all septic systems in the County should be established.

Action Statement:
Problem areas, where widespread failure of septic systems is suspected, or where failing systems may endanger a stream or lake, should be identified and mapped. These areas should be a priority for being brought up to code.

Action Statement:
All local units of government administering zoning should incorporate into their ordinances measures ensuring the protection of groundwater from hazardous materials. Model groundwater ordinance regulations should be incorporated into the local site plan review process.

Goal: Expansion of public sewer and water.

Objective:
Local governments expanding current public sewer and water facilities and services will need to coordinate in a planned phased manner with the **General Plan**.

Action Statement:
Local governments with existing public sewer and/or water facilities and services should prepare comprehensive studies regarding the current and projected conditions and capacities of the infrastructure based on alternative growth scenarios.

Action Statement:
Local governments with existing public sewer and/or water facilities and services should identify within their adopted comprehensive land use plans the current and projected conditions and capacities of the infrastructure, and establish specific policies for service expansions.

Objective:
Local governments without existing public sewer and water facilities and services should introduce such services only when and where there is a demonstrated need for such services and no other feasible or preferable alternative is available.

Action Statement:
Local governments without public sewer and/or water should include policies within their comprehensive land use plans regarding the intention, or lack of intention to introduce such services within the planning period of the plan, and under what conditions and where, the introduction of such services is to occur.

Action Statement:
Local governments without public sewer and/or water should research alternative systems to providing public sewer and/or water.

Action Statement:
Local governments should initiate low technology efforts to prevent water pollution from leaking septic tanks along inland lakes. Such efforts could include, but are not limited to, annual (or more frequent if necessary) septic cleanouts and/or inspections, mandatory inspection at time of sale, the creation of septic maintenance districts and/or prohibiting new development in areas without adequate on site septic facilities. Where low technology solutions fail, consideration should be given to creation of a limited sewer system to eliminate a health threat in a particular area.

Action Statement:
County and local governments, lake associations, and other organizations should work toward educating the public on proper ways to maintain septic systems, and prevent contamination of surface and groundwater.

Goal: Stormwater management.

Objective:

County and local governments should coordinate regulations and programs to assure the adequate management of stormwater as a result of new construction activities.

Action Statement:

The County Drain Commissioner's office should work with local governments and the County on long range comprehensive stormwater management programs for the purpose of educating the public on related issues and facilitating communication and coordination between stormwater management initiatives and projects.

Action Statement:

Local governments should adopt subdivision and related development regulations, or coordinate local provisions with any relevant County regulations. These should include provisions that comply with the Michigan Natural Resources Act, Act 451, Part 91, to protect against floods, soil erosion, and sedimentation.

Goal: Government Administration Offices.

Objective:

County and local governments need adequate and accessible government administrative centers.

Action Statement:

The County and local governments should evaluate their current and projected space and technological needs, establish a program for renovation, technological additions, and/or relocation of offices.



The Patrick Hobbins Hiking Trail at Myles Kimmerly Park, dedicated in 2003.

Chapter 9
NON-MUNICIPAL PUBLIC SERVICES

INTRODUCTION

County and local governments do not provide all of the important public services in the County. Residents and visitors also rely on natural gas, telephone, cable and satellite, internet, electric, and medical services provided by private sector businesses. The availability of these services impacts the quality of life in the County. The availability of utilities can greatly affect economic development potentials, communications, and available day to day conveniences. Availability of medical services can have a profound impact upon quality of life conditions.

Because of the importance of these non-municipal services, the continuation and expansion of them must be incorporated into the planning process for the County. These services operate hand-in-hand with many municipally provided services and with other services provided by the private sector.

ISSUES

Electric Service

Currently, electrical service is provided to the entire County through Cherryland Rural Electric Cooperative and Consumers Energy. See Map 9-1. Wolverine Power Supply provides electricity to numerous substations in the County. Cherryland Electric Cooperative distributes this electricity throughout Leelanau County. Consumers Energy is also responsible for transmitting electricity to numerous substations located in the County. There is one Wind Energy Conversion System (WECS) in Elmwood Township which is operated by Heritage Sustainable Energy and provides electricity to a few hundred homes. We encourage each municipality to identify and prioritize opportunities for electric sources that are more economical for their citizens and communities, protect our environment, and provide greater energy security.

Gas Service

Currently, natural gas service is far more limited in the County than is electrical service. According to the Michigan Public Service Commission, Natural Gas in Leelanau county is distributed by DTE Gas Company. The lack of gas service limits (especially on the west side of the County) the options available for heating and other gas burning residential and nonresidential activities. MichCon provides natural gas to Leelanau County.



Telephone & Internet Service

Telephone service is provided throughout the entire County by AT&T, Verizon, and CenturyLink. Cellular telephone service is available throughout the County. A network of towers providing cell phone service, emergency services communication, TV, radio and other communication services has been erected. See Map 9-2. Leelanau Internet Futures Team (LIFT), created by the Leelanau Peninsula Economic Foundation, launched an action plan in 2018 for provision of high-speed Internet services throughout Leelanau County. A significant majority (81%) of respondents strongly agree or agree that Leelanau County needs more access to high-speed internet. The use of county-owned towers to expand high speed Internet services was determined the best course of action. LIFT is also working with townships to discuss common zoning requirements, and working with the Road Commission on work within right-of-ways by Internet Service Providers (ISPs).

Radio Service

There are numerous radio stations servicing the County. Some have towers in the County or rent tower space.

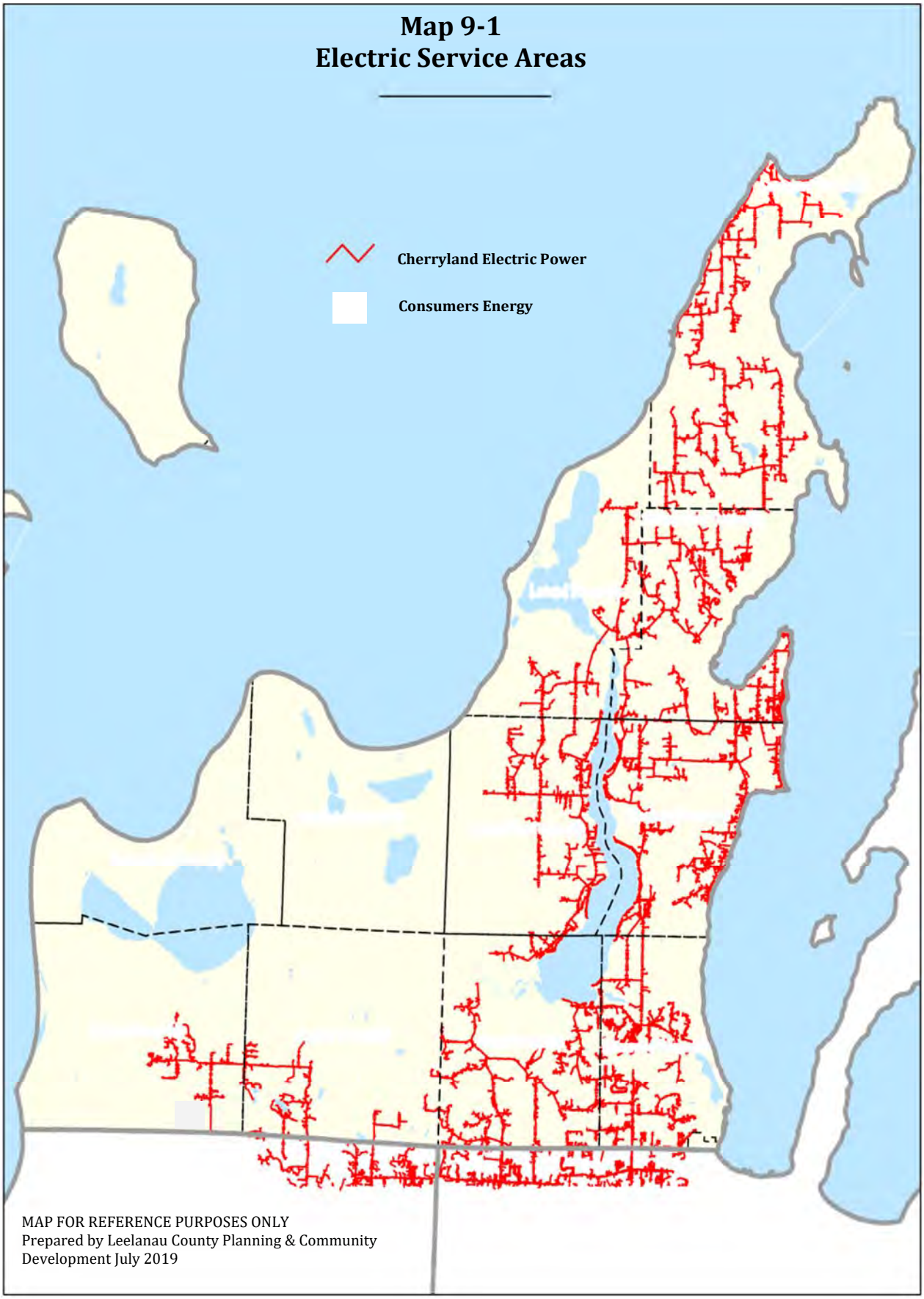
Medical Facilities

Residents and visitors to the County also have access to several dental clinics and several private clinics and doctors offering psychiatric, optometric, chiropractic and general medicine. The Grand Traverse/Leelanau Community Mental Health Services facility is located in Traverse City. The Maple Valley Nursing Home in Maple City is a private company which provides care to senior citizens. Medi-Lodge is a similar facility operating in Suttons Bay, and there are other adult care facilities located throughout the County. In addition, there is a health clinic located in Peshawbestown. Munson Medical Center in Traverse City is now the primary health care facility for the County.

The average age of the population in Leelanau County is rising. In part, this parallels national trends dominated by aging baby boomers, and in part is due to a rise in the number of retirees moving into the County. This trend will be accompanied by an increase in demands placed upon area health care facilities. This increase will undoubtedly show itself in both a heightened need for additional health care facilities and greater accessibility, and herein lies the fundamental challenge. The high and continually rising costs of health care today generally necessitates the need for larger hospitals to assure long term economic viability. Thus, whereas the County is approaching a need for increased health care facilities and greater ease of access, it is becoming increasingly difficult to provide the necessary services.

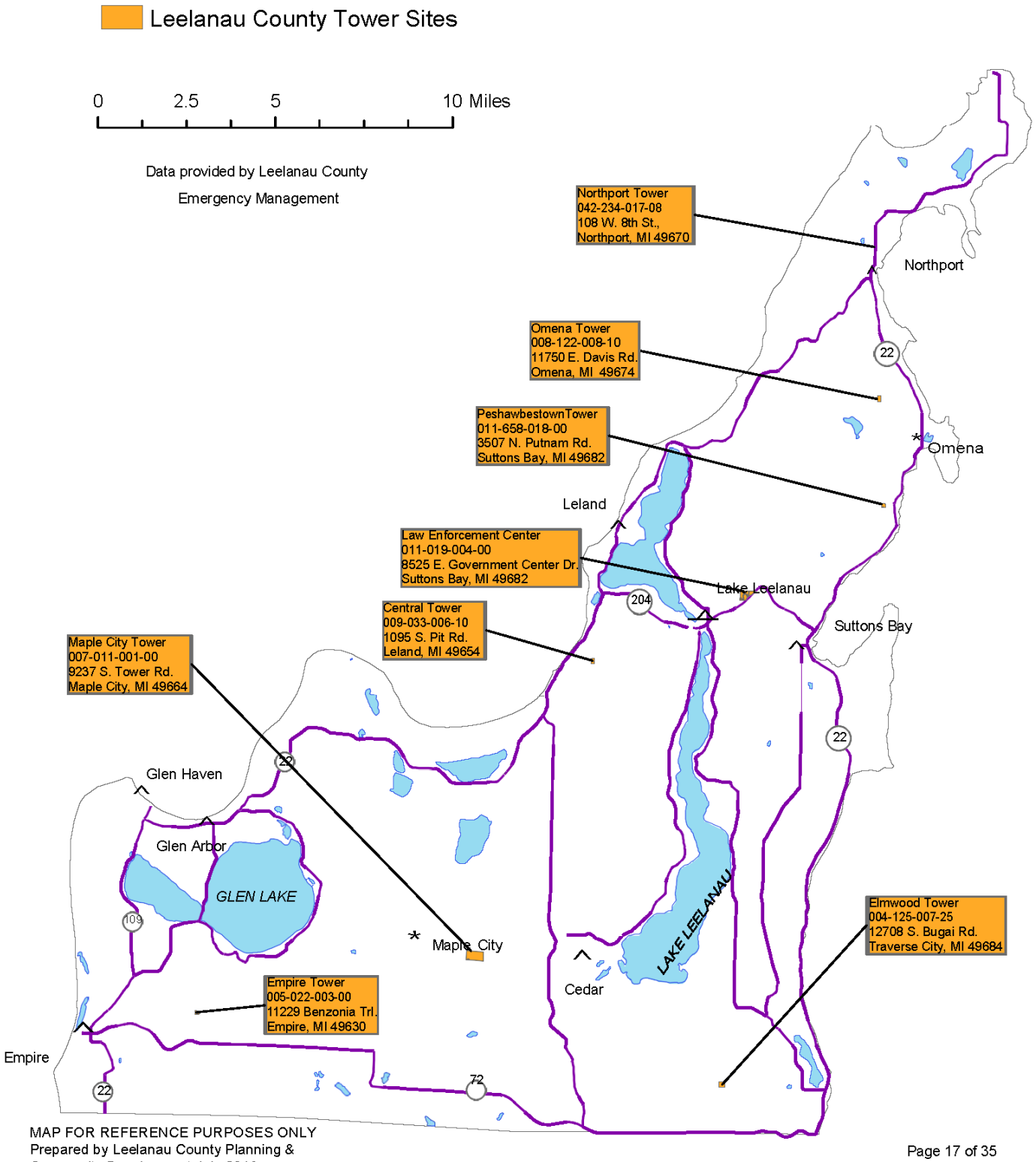
While the County is experiencing these health care needs and, to a lesser extent, natural gas and other utility expansion needs, it must be recognized that improvements in these areas will act to attract development. Improvements in health care and utility infrastructure inevitably improve local quality of life conditions. As quality of life conditions improve, the area becomes more at-

Map 9-1
Electric Service Areas



Map 9-2

Leelanau County Tower Sites



MAP FOR REFERENCE PURPOSES ONLY
Prepared by Leelanau County Planning &
Community Development July 2019

A FRAMEWORK FOR THE FUTURE

The **Leelanau General Plan** recognizes the critical link between non-municipal public services and the future welfare of the County's municipalities and its residents. In this regard, it becomes vital that the planning of future utility expansions occurs in a coordinated manner with the future growth and development programs of the individual local municipalities as well as the County as a whole. This is particularly applicable for natural gas distribution and cable service, both of which are provided in limited fashion.

Joint initiatives by the public and private sectors could be established and aimed at improving health care services in the County. Consideration should be given to an array of options to reach this end. Special health care transportation systems could be examined which might better improve access to public and private health care facilities. Other programs which might provide for a greater County-wide distribution of health care facilities while still meeting the intent of local community plans, zoning ordinances, and this plan could also be pursued.



NON-MUNICIPAL PUBLIC SERVICES
POLICIES AND ACTION STATEMENTS

The following policies, objectives and action statements are intended to establish the blueprint for implementing the **General Plan** recommendations for the future of the County's non-municipal public services and facilities.

Goal: The **General Plan** envisions goals, objectives and actions that will result, to the greatest extent possible, in the availability and adequate capacity of Non Municipal Public Services that will provide for the protection of health, welfare and safety of citizens and visitors of the County while protecting the County's natural resources, air and water quality. It is further the vision of this **General Plan** that Non-Municipal Public Services will be available and of adequate capacity to support a sustainable 21st century economy.

Goal: To have telephone, cell phone, broadband, electric, gas, and alternative energy in adequate capacity.

Objective:
Ensure environmental protection, while providing adequate utility services.

Action Statement:
County and local government should coordinate, to the greatest degree practical, all planning of and construction of capital improvement projects with the planning and construction activities of public and private utilities. Expansion of service areas should support the planned future land use pattern and timing of development as identified in local master plans.

Action Statement:
Local governments should develop policies regarding planned future land use patterns and the timing of development in coordination with existing and projected utility service areas and the Village Service districts of the **General Plan.**

Action Statement:
Local governments should adopt zoning and subdivision regulations which require the placement of utilities below ground in all cases where practically feasible, and deal with placement, construction, collocation, modification and abandonment of wireless service facilities.

Action Statement:
County and local government should take necessary steps to ensure universal access to high speed internet/broadband services for all residences in the County.

Chapter 10

ECONOMIC DEVELOPMENT



Downtown Leland

INTRODUCTION

The economy of a region is the driving force behind its evolution. However, while a strong economy does not necessarily relate to a heightened quality of life, a struggling economy almost always assures a decline in the quality of life. A fundamental element of the **Leelanau General Plan** is the establishment of policies to provide for a strong economy within the context of sustainable growth and development. Economic development does not have to occur at the expense of the natural or visual environment. Conversely, County residents do not have to settle for a lower standard of living in the name of environmental protection. A basic premise of the **General Plan** is that a sustainable, healthy economy is dependent upon a healthy environment, and nowhere is this more true than in Leelanau County.

Economic Trends

Most of the population growth experienced in the County has been the result of the in-migration of new residents, often retirees, from other counties – the number of senior citizens has steadily grown since 1960, particularly in Glen Arbor and Leelanau Townships. Others are often commuters who travel outside the County for work. Many in-migrating residents buy high-value property for retirement or seasonal homes, and many of the new residents come from urban areas with higher levels of public service. The higher property values and increased demands for public services result in greater tax burdens throughout the County, particularly impacting lower and fixed-income households. Significant year-round population increases result in the need for expanded services, such as health care and social services, and in the growth of the construction industry, in order to accommodate the demand for more homes.

A basic premise of the Leelanau General Plan is that a sustainable, healthy economy is dependent upon a healthy environment, and nowhere is this more true than Leelanau County.

This is reflected in the County's employment patterns. Most of the County's job growth in recent years has been in the construction service, and retail sector of the economy. Many of these jobs are low paying, seasonal, and fluctuate with the economy; many of these jobs remain unfilled following the housing crisis of 2008.

Table 10-1
2000-2010 Census

Jurisdiction	Population		Population Change	
	2000	2010	Number	Percent
Bingham	2,425	2,497	72	2.97%
Centerville	1,095	1,274	179	16.35%
Cleveland	1,040	1,031	-9	-0.87%
Elmwood	4,264	4,503	239	5.61%
Glen Arbor	788	859	71	9.00%
Kasson	1,577	1,609	32	2.00%
Leelanau	2,139	2,027	-112	-5.20%
Leland	2,033	2,043	10	0.50%
Solon	1,542	1,509	-33	-2.10%
Suttons Bay	2,982	2,982	0	0.00%
Empire Village	378	375	-3	-0.80%
Northport Village	648	526	122	18.80%
Suttons Bay Village	589	618	29	4.90%
Traverse City	149	192	43	28.90%
TOTAL	21,119	21,708	589	2.80%

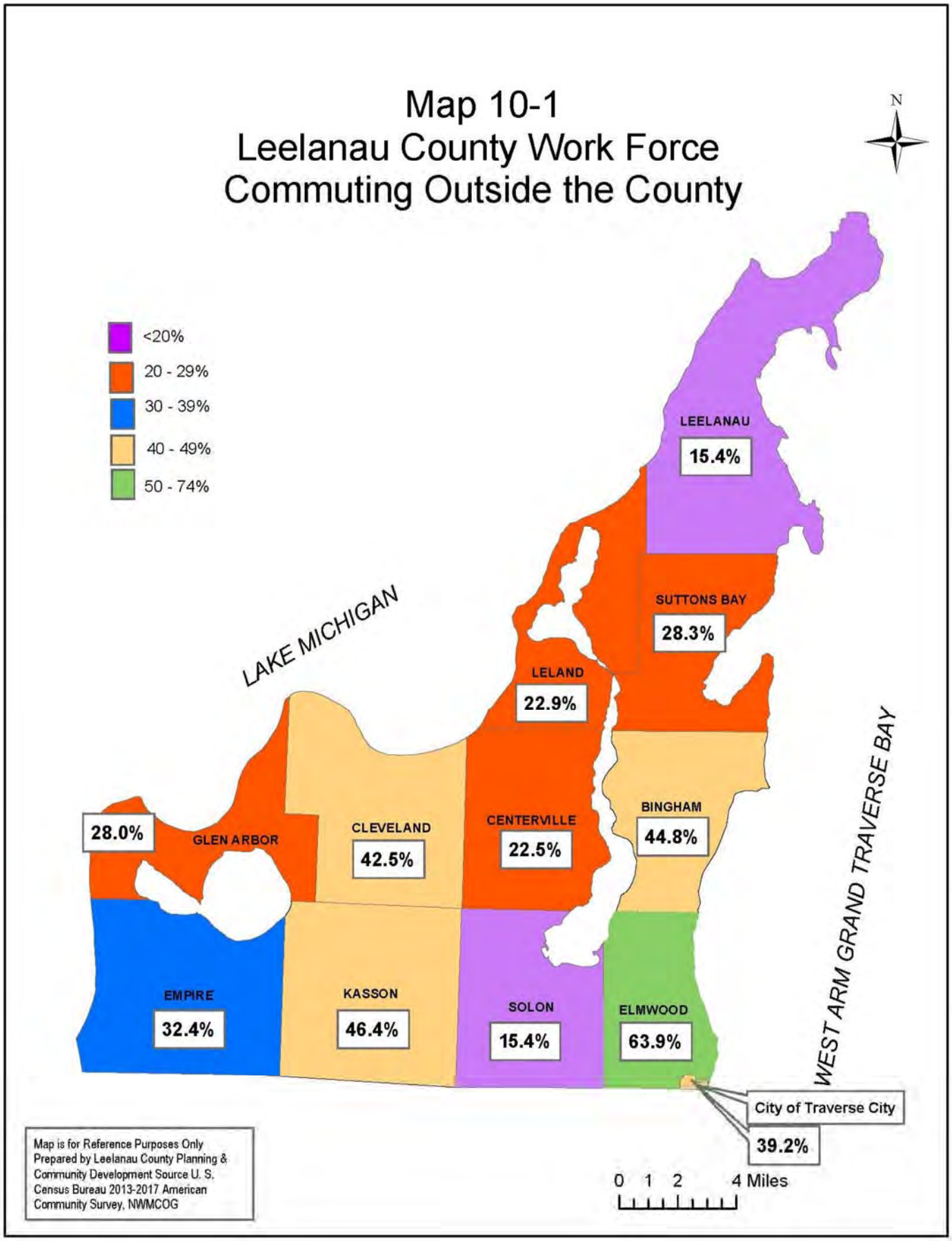
Table 10-2
Projected Population and Households

	Projected Population	Projected Households
2020	24,165	10,597
2030	26,477	11,544

With limited year-round employment opportunities found within the County, a large portion – about 46% – of the County's labor force commutes outside the County for work, mainly to Grand Traverse County. (See Map 10-1). Without diversified economic opportunities, it is likely that the trend towards commuting to work outside of the County will continue.

Importance of Tourism and Seasonal Residents

While the tourism industry is most active in the warmer months, it impacts the economics of the County all year. Many of the area jobs are seasonal and do not provide year-round income for workers nor generate year-round sales taxes. Still, tourism dollars continue to increase within the County, which indicates a growing tourism economy. However, due to difficulties in tracking seasonal populations, there is no clear understanding of the impact of tourism and how it influences individual sectors of the County's economy.


Map 10-1
Leelanau County Work Force
Commuting Outside the County
N
<20%
20 - 29%
30 - 39%
40 - 49%
50 - 74%
LAKE MICHIGAN
LEELANAU
15.4%
SUTTONS BAY
28.3%
LELAND
22.9%
BINGHAM
44.8%
CENTERVILLE
22.5%
CLEVELAND
42.5%
28.0%
GLEN ARBOR
EMPIRE
32.4%
KASSON
46.4%
SOLON
15.4%
ELMWOOD
63.9%
WEST ARM GRAND TRAVERSE BAY
City of Traverse City
39.2%
0 1 2 4 Miles
Map is for Reference Purposes Only
Prepared by Leelanau County Planning & Community Development Source U. S. Census Bureau 2013-2017 American Community Survey, NWMCOG

When discussing seasonal populations, it is worthwhile to note that many "seasonal" residents may very well become permanent residents upon retirement or other lifestyle changes. The majority of in-migrant population growth is largely attributed to retirees.

Proposal A

In March of 1994, the voters in Michigan approved Proposal A, a law which involves differences in tax rates for homestead and non-homestead properties. Properties identified as a primary residency, and properties with an agricultural exemption, are classified as homestead. Other properties, such as seasonal homes, vacant land, and second homes are classified as non-homestead.

Proposal A allows school districts to levy up to 18 mils on property classified as non-homestead, if approved by the voters in the school district. In addition, all properties are levied 6 mils for state school tax. Therefore, a non-homestead property could be levied school taxes to a maximum of 24 mils, while homestead properties pay no more than 6 mils. Homestead vs. non-homestead classifications create major disparities between tax rates of these types of properties. In some cases, owners of non-homestead properties pay over twice the taxes that homesteaders pay.

Importance of Agriculture

The primary tart cherry producing state is Michigan, accounting for nearly 74% of tart cherry production. Michigan ranked 1st in tart cherry production in 2014 with 203 million pounds, and 4th in total sweet cherry production in 2014 with 29,860 tons. *(NASS, 2015).* Leelanau County is number one nationwide for the production of cherries. In Northwest Michigan, 85% of the sweet cherries grown are grown in Leelanau County. In the nation, Leelanau County leads in cherry acreage with 12,259 acres in production and over 1.3 million trees. (MSU Extension) The County also has 26% of the tart cherry acreage and 4% of Michigan apples. The County's climate, proximity to Lake Michigan, rolling Hills (drainage), and sandy soils make it ideal for fruit production. These areas so ideally suited for fruit production are also some of the most valued properties for residential home sites.

Agriculture is a major element of the County's economy. "Agricultural tourism," such as heritage tours and visits to wineries, has become an important part of Michigan's tourist economy over the last few years, and Leelanau County has seen significant growth in that market as well.

Agricultural markets/wineries/u-picks, etc. (referred to as "value added" agriculture), play the dual role of creating greater economic opportunities for farmers while "marketing" the County and attracting additional tourism. The County is seeing increases in other types of value-added agriculture as well, such as organic farming, on-farm processing, specialty meat and cheese production, farm markets, and hydroponic farming. The growth of value-added agriculture will likely play an important role in Leelanau County's agricultural and tourist economies.

Nevertheless, agriculture is subject to a significant amount of pressure due to the instability of the agricultural economy, increased residential development, the rising market demand for rural lots, rising costs of production, and higher taxes. As these pressures grow, there is a greater incentive to sell farmland for its development value, taking more farms out of operation and reducing agricultural employment and revenues.

Geographic Isolation

The County is a destination location. Normal transportation routes do not "pass through" the County due to its geographic location. As a result, the potential pool of consumer dollars is limited to only those persons who are traveling to or living in the County. The indirect surface travel and comparatively limited air and water service further add to the challenges for economic development.

Fiscal Implications

The growth of the County's population is altering land values as well. The percentage of land in farms, by State Equalized Value (SEV) has been steadily decreasing since 1974 while residential valuation has been steadily increasing. More and more national studies suggest that new residential development, contrary to traditional thinking, does not "pay for itself" across the board, and that, in fact, the additional public services to meet the demands of the new residential development often cost more than the additional taxes collected.

This could mean higher taxes by present and future residents to meet new public service needs created by new residents. Though service, retail sales, agriculture, and construction are the County's export industries, it is clear that the comparative lack of commercial and industrial development in the County places the tourism industry in that much more of a dominant role. To provide for a more balanced economy in the County is particularly difficult as public services and infrastructure are limited.

FRAMEWORK FOR FUTURE POLICY

It is a goal of the **General Plan** to encourage a balanced County economy. This balance hinges upon the ability to realize the large economic potential of the County's resources while, at the same time, recognizing the fragile nature of these resources and taking strong protective actions to ensure their perpetuity. Sustainable growth and development, with environmental protection, and a more diversified economic base are the lynch pins for a balanced County economy. The increasing significance of income circulated by seasonal residents, and property taxes paid by them, must also be acknowledged as an important part of the economic base of Leelanau County.

To the extent that tourism continues principally as a summer activity, efforts should be directed at attracting new opportunities which are generally of low intensity, and require limited landscape alterations. The economic base should be diversified. Opportunities for additional economic development must be provided which can operate within, and be compatible with, the sensitive resource base which characterizes the County. At the same time, these resources must be recognized for their long term non-economic benefits and should be approached in a responsible manner with a strong sense of stewardship.

In striving for this economic future, a major effort should be made to create more year-round jobs in businesses and industries which have demonstrated a commitment to environmental protection or which by their nature do not pose threats to the County's environmental integrity. Location criteria should include proximity to public services, utilities, transportation, work force, and associated logistical elements. The Leelanau Peninsula Economic Foundation (LPEF) and local economic development task forces should coordinate economic development activities from within and out of the County, distributing marketing materials, and providing specialized training programs.

The increased economic development activity anticipated from these initiatives should be guided to those areas of the County planned for village development and supported by the necessary public facilities and convenient to the work force. All capital improvements should be well planned, phased, and coordinated with adjoining municipalities and County projects.

Figure 10-2
Percent Change In Housing Units

	2000 Census	2010 Census	% Change
Total Housing Units	**13,297**	**14,935**	**12.3%**
Occupied	**8,436**	**9,255**	**9.7%**
Vacant	**4,861**	**5,680**	**16.8%**
For Rent	**361**	**289**	**-19.9%**
For Sale Only	**79**	**274**	**256.0%**
Rented or Sold, not occupied	**130**	**56**	**-57.0%**
Seasonal, Recreational	**4,111**	**4,681**	**13.9%**
Migrant Housing	37	39	5.4%
Other Vacant	143	341	138.5%

Figure 10-3
2018 Total Millage for Homestead Properties in Leelanau County

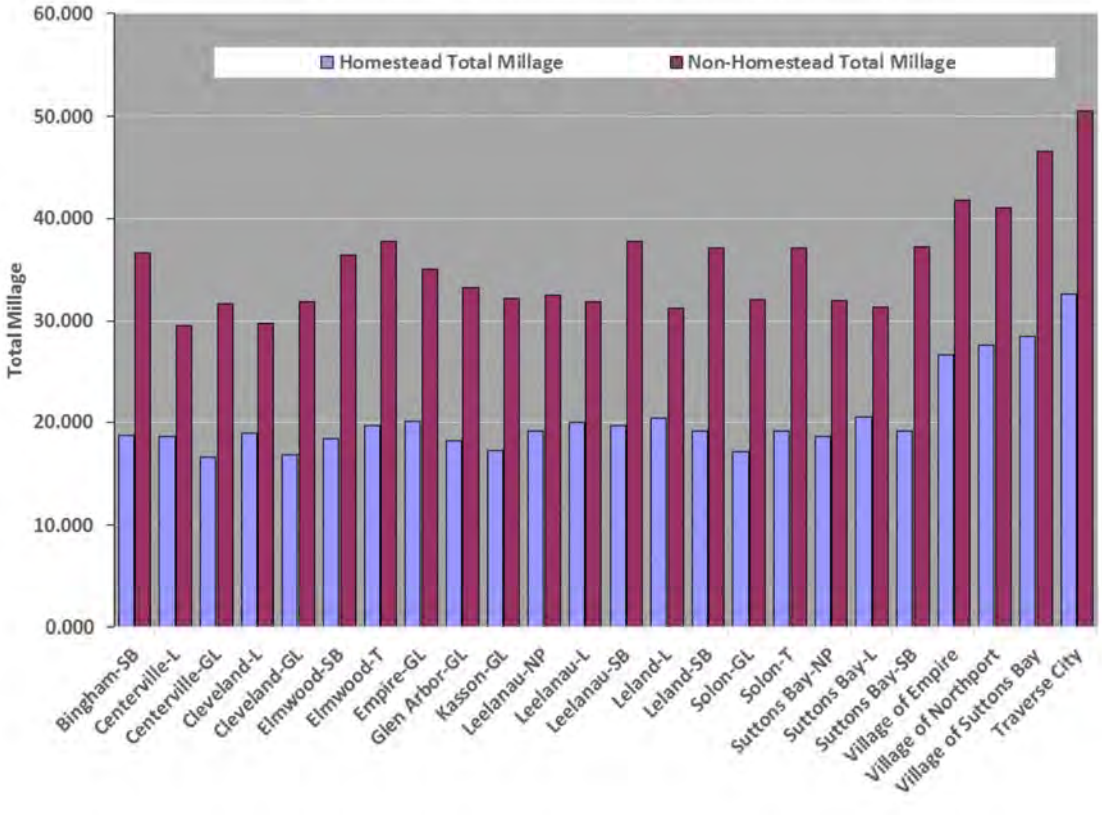
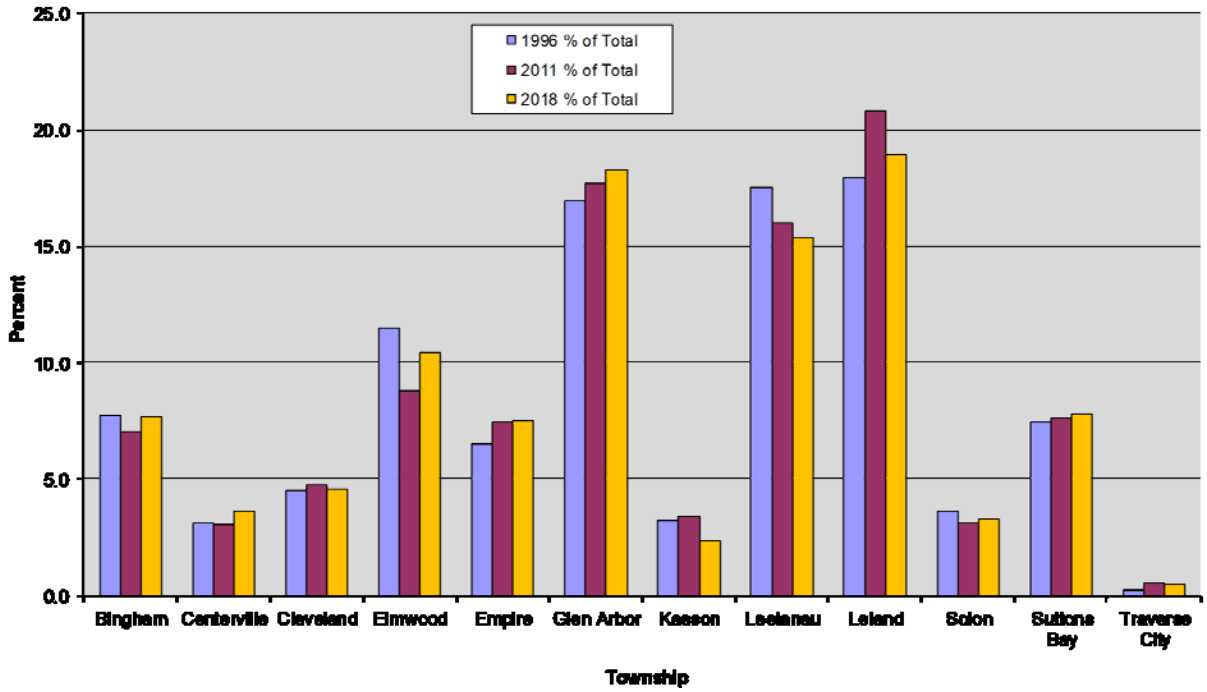


Figure 10 - 4
Residential SEV as Percentage of Total SEV Comparing 1996, 2011 and 2018



Model zoning language has been developed for planned and compatible mixed uses, small scale developments, and signage, which is sensitive to the surrounding natural and rural environment. Commercial areas should be pedestrian friendly and landscape amenities should enhance the village setting. All businesses operating with heightened risks of environmental contamination should be monitored through the development of a regular and ongoing County-wide monitoring system.

The **General Plan** calls for a program to protect the County's agricultural economy. A critical component of this program relates to the County's future land use pattern. In addition, however, the **General Plan** encourages the expansion of marketing opportunities for farmers including the promotion of locally produced farm products, mail-order businesses for farm products, farmland tourism networks and organically grown products.

The **General Plan** also encourages the development and expansion of small scale farming operations such as wineries, Christmas tree farms, small fruit operations, and Community Supported Agriculture (CSA) farms, as well as unique farming opportunities. In addition, continu-

Opportunities for additional economic development must be provided which can operate within, and be compatible with, the sensitive resource base which characterizes the County.

ous

monitoring of trends and conditions in crop production, P.A. 116 enrollments, conservation reserve programs, and other agricultural economic indicators should become routine and the data generated applied to current and future marketing initiatives.

Improved employment opportunities for many of the residents in the County will remain out of reach without improved job skills. The training needs of target industries must be identified and appropriate training provided. Satellite centers should be established to provide easier access to training opportunities.

These employment programs should not be reserved for adults only, but programs should be developed for the County's children which encourage leadership and independence. The future evolution of the economy should be supported by an improved County-wide information system.

ECONOMIC DEVELOPMENT
POLICIES AND ACTION STATEMENTS

The following policies, objectives, and action statements are intended to establish the blue-

Goal: Understand the impact and effects of tourism.

Objective: Define the optimum role of tourism and tourism development in the County consistent with protection of the natural environment.

Action Statement:
The County should cooperate with Networks Northwest in efforts to develop a data collection and monitoring system to continuously evaluate seasonal population changes as well as local impacts of tourism.

Objective: Attract tourism opportunities which capitalize on natural resources and scenic beauty while protecting and enhancing those same features.

Action Statement:
Local governments and citizens groups should work with organizations like the Leelanau Historical Society to identify historic preservation opportunities in the County and develop a formal tour or guidebooks including maps for historic features/trails.

Action Statement:
The County and local governments should explore opportunities to development additional small parks in the County, especially along lake shores, streams and ridges.

Goal: Promote economic activity and strengthen the economy of Leelanau County.

Objective: Ensure adequate workforce for Leelanau County businesses.

Action Statement:
Local governments should work with Leelanau Housing Action Committee to review and update zoning ordinances to ensure a wide variety of housing options are available to residents.

Objective: Economic development leadership should spearhead a business retention and development program for the County.

Action Statement:
The County, Leelanau Peninsula Economic Foundation (LPEF) and MSU Extension should research and promote the development of agri-tourism opportunities, such as wineries and heritage tours in the County.

Action Statement:

The LPEF should work with local communities to identify resource-friendly industries and projects that will enhance year-round employment opportunities.

Goal: Maintain the stability of agriculture in the County.

Objective: The County and local units of government should initiate proactive measures to protect agriculture and farmland.

Action Statement:

The County should work with the Leelanau Conservation District to devise an agricultural data base which more closely monitors crop production, P.A. 116 enrollments, conservation reserve programs, and other appropriate agricultural preservation/support programs.

Action Statement:

The County, local governments and economic development corporations should encourage participation in programs offered by Michigan State University Extension that provide education, training, and resources to support the expansion of economic opportunities through value added agriculture.

Goal: Commerce activity needs to be located near business and residential centers and well-served by proper services.



Suttons Bay Village Marina

Objective: Development organizations should identify business and residential centers for concentrated development that provides efficiency in energy and service delivery.

Action Statement:
The County, local governments, and economic development organizations should focus economic initiative in or close to villages (where the people are) through the use of initiatives, guidelines, and zoning regulations.

Action Statement:
Develop in the County, with local government assistance, sample ***(****model)* zoning regulations which allow for planned and compatible mixed uses.

Action Statement:
The County should promote the establishment of high-speed internet and cable services with County-wide access.

Action Statement:
Local governments should enact regulatory guidelines to integrate adequate parking with other access management techniques to minimize congestion and visual impact of commercial and industrial development.

Action Statement:
Local governments should coordinate prohibitions of strip development with zoning regulations of neighboring jurisdictions.

Objective: Promote well-designed business facilities which blend with the environment and are not overly suburbanized in appearance.

Action Statement:
Local governments should develop local site design guidelines to promote the establishment of native vegetation, wildflower fields and native grasses over sod yards in commerce centers and to encourage the use of low impact development (LID) standards.

Action Statement:
The County, Brownfield Redevelopment Authority and local governments should encourage private enterprise to upgrade and redevelop existing, aging commercial establishments and centers to arrest deterioration and maintain the appearance of the County.

Action Statement:
Local governments should adopt regulations designed to promote small scale development in service centers to blend with the rural character of the County.

Action Statement:
Local governments should adopt regulations to require the design of commercial centers to be pedestrian friendly with natural landscaping, pathway and amenity tie-ins.



Farm market along M-72 in Elmwood Township

Chapter 11

HUMAN SERVICES AND FACILITIES

INTRODUCTION

Within the context of the **Leelanau General Plan**, human services and facilities include an array of services typically aimed at providing specialized assistance to individuals and families to improve their productivity as members of society and/or improve their quality of life. These services are characterized by programs for the elderly, employment services, financial assistance, domestic violence intervention, shelters, mental health services, and similarly related support assistance.

Human services and facilities are critically important to the County for a variety of reasons. Availability of strong health and human services is essential to a community vested in thriving, stable families. Many of the services offered enable individuals to become active and productive residents of the County and thus limit the demand on revenues for long term public assistance due to unemployment, disabilities, mental illness, and other difficulties. This can result in both higher level of services delivered as well as more



Benodjenh Headstart/Daycare Center and Strongheart Civic Center in Peshawbestown

revenues available for other needed services and programs. The County's health and human services target all families including young families, middle aged families, and elderly. Furthermore, services target migrant farm workers who temporarily reside in the County during the growing and harvesting seasons and who, by their transient nature, may be in particular need of special services and programs. Without these services, agricultural operations could not be competitive.

ISSUES

Health and Human Services Data

There are approximately 21,564 persons in Leelanau County 3,689 of those residents are under 18 years of age. (American FactFinder). Approximately 90.8% are Caucasian, 2.8% are Native American, <1% Black, <1% Asian and 3.3.0% are of Hispanic origin. (Michigan State University Extension 2015). In 2010, there were 171 births in Leelanau County and 1 infant death. In 2017 there were 175 births.

Health status is related to the social-economic status. In Leelanau County, the median household income for 2017 was $62,646, while the poverty rate was 7.73% (DataUsa). This is lower than the national average of 13.4% living below the poverty line. The largest demographic living in poverty are males 25-34, followed by males 18-24 and then females 55-64. The unemployment rate for the County was 3.3% in May of 2019 (U.S. Bureau of Labor Statistics). Additionally it is important to note that family income and employment is affected by seasonal fluctuation due to service occupations that are related to tourism.

Nearly twenty-five percent (25%) of the residents of Leelanau County are 65 years of age or older (US Census, 2010). This population is commanding a growing share of the national, state, and County population. The elderly are faced with numerous day-to-day challenges which, in turn, challenge the human services delivery system. Economic stability, health and nutrition, transportation and mobility, medication management and self-sufficiency are all very real and pressing issues which must be addressed. Insufficient income to meet living needs often faces the elderly on a fixed income. The very aged are more prone to mental illness and similar to the rest of the country, the elderly in Leelanau County are experiencing Alzheimer's disease.

Nearly 3000 Leelanau County residents currently receive health and/or human services support annually. (DHS green book, May 2019) The County includes a large percentage of families qualifying for free or reduced school lunches. Many Leelanau residents struggle to access childcare, health care, housing needs (rent, utilities, heat, etc.), transportation, access to agency resources and the ability to feed and adequately clothe their families.

Leelanau families with young children are typically low wage earners. Far too many Leelanau County families lack resources, have limited access to necessary support services, and cannot afford, or find, childcare.

- Families with young children are typically low wage earners—they are often not settled into a career, and have the added stress of living in an area with limited economic opportunity for the typical wage earner (Leelanau County's 2017 average weekly wage was $561, ranking #69 out of all Michigan counties.).

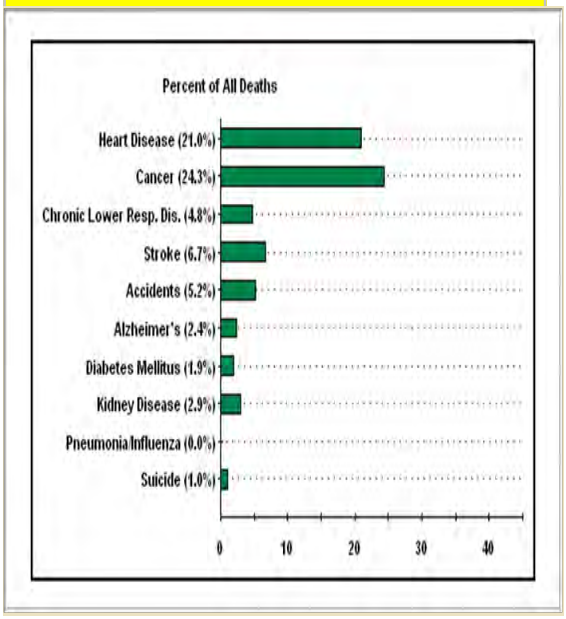
- Families with young children often live in the isolating condition of rural communities and many lack adequate transportation.

- Families with young children may not even speak English- and an increasing population of Latino families has settled in Leelanau County.

- Parents often have difficulty accessing supportive services, because the bulk of such resources are housed in Traverse City.

Figure 11-1

Leading Causes of Death, Leelanau



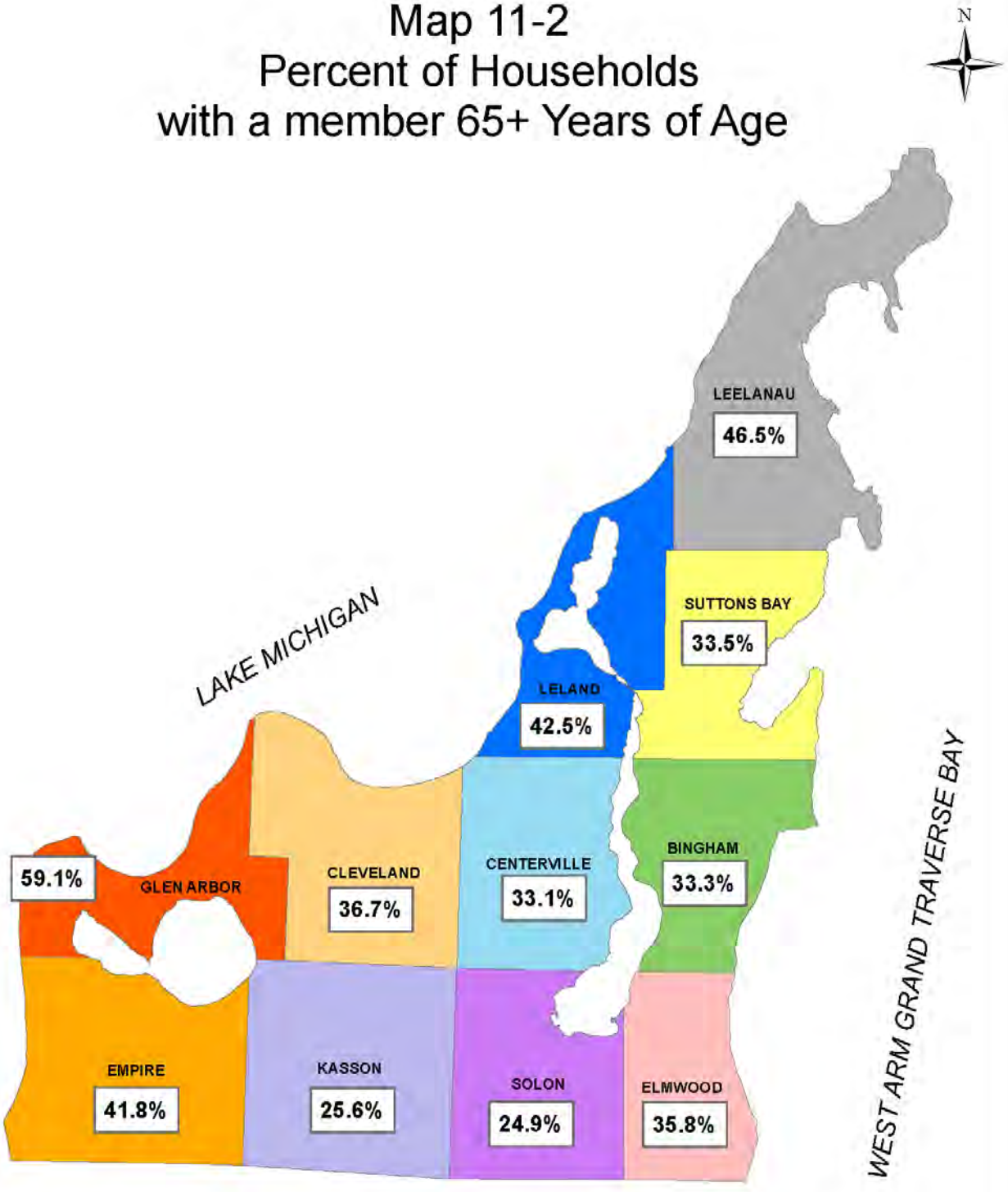
- Many Leelanau young children receive childcare in unregulated settings because their parents cannot afford the higher quality care, and yet they earn too much to qualify for Head Start or other funded programs.

Other statistics to be considered in developing a long-term plan for Leelanau County include:

- Nearly half of all Michigan students qualify for free or reduced lunches.
- Weekend and summer food programs (such as Blessings in a Backpack) provide food for youth on weekends during the school year, and during the summer months.
- Each year in the 5 county region (Grand Traverse, Benzie, Leelanau, Antrim and Kalkaska), there are over 200 youth experiencing homelessness, and addition 200 currently at-risk for becoming homeless. It is often the youth sleeping on a friend's couch, camping, sleeping in the baseball dugout, or sleeping in a car because they are aged out of the foster care system. Youth homelessness is often invisible to the community. (Northwest Michigan Coalition to End Homelessness)
- Records from Leelanau Probate Court reveal investigations for child abuse and/or neglect, as well as single parent families unable to collect court ordered child support payments.

In addition, students responding to the 2018 Planning Questionnaire stated **housing availability and cost** was very important (57%) or important (38%) and **availability of continuing educational opportunities** was very important (37.5%) or important (48%) in their decision to stay or leave the Grand Traverse region after their education. A significant majority (83%) of respondents to the 2018 Planning Questionnaire strongly agree or agree that housing is too expensive for first-time home buyers and young families in Leelanau County.

Map 11-2
Percent of Households with a member 65+ Years of Age



Map is for Reference Purposes Only
Prepared by Leelanau County
Planning & Community Development July 2019
Source U. S. Census Bureau
2010 Decennial Census

Transportation consistently is a barrier to services. Many families have no vehicle or only one vehicle that may be in questionable working order. While Traverse City is the urban hub located in Grand Traverse County, travel to Traverse City is inhibited by an unreliable car or lack of gas money. With 2.5% of the population of Hispanic origin, health and human service providers do face some barriers to service with Spanish only speaking clients. As required by law, health and human services facilities consistently use a contracted interpreter or the Language Line to facilitate appropriate services.

Chronic diseases – including heart disease, cancer, stroke, diabetes, and respiratory diseases – share major risk factors including tobacco use, unhealthy diet, physical inactivity, and lack of access to preventive care. Reports for Benzie-Leelanau County Health Department show that 31% of adults are considered obese and 64% are considered overweight or obese (MDCH). 19% adults report heavy drinking, 14% of adults report that they smoke (2018 County Health Rankings and Roadmaps). Furthermore, 13% of pregnant women in Leelanau County smoke during pregnancy (MDCH, 2007-2010). Thirty-eight (38%) of our students in high school report that cigarettes are easy to obtain, 65% said that alcohol is easy to obtain, 42% said that marijuana is easy to obtain. (Michigan Profile for Healthy Youth (MiPHY 2017-2018)

Access to medical and dental care continues to be a challenge for Leelanau County residents. County Health Rankings from 2018 show that 9% of our residents are without health/medical insurance. Many residents without insurance forego regular dental care. There are no publicly funded mental health services available within the County.

HEALTH AND HUMAN SERVICES FACILITIES

Health Care facilities located within the County include the Lake Leelanau Office of the Benzie – Leelanau District Health Department, primary care physician offices, dentists, long term care facilities, Grand Traverse Band of Ottawa and Chippewa Indian Medicine Lodge Clinic and 1 urgent care facility. Since no physical offices are located within the County, residents receive mental health services from Great Lakes Community Mental Health, Third Level Crisis Center, Catholic Human Services, and Pine Rest Counseling Services located in Traverse City.

The Leelanau County HelpLink program, located at the Glen Lake Community Reformed Church, and Leelanau Christian Neighbors are member organizations of the Leelanau County Family Coordinating Council (CFCC) and provide services to Leelanau County residents.

There are no shelters located within the County, although close coordination with the Women's Resource Center, Children's Advocacy Center, Goodwill Inn, Safe Harbor, and Third Level Crisis Center assures that families are referred to shelters in Grand Traverse County. Leelanau County has 4 public school districts, St. Mary's private/parochial school, Leelanau School, and PathFinder School, several preschools, a Tribal Head Start Program and a children's center.

A FRAMEWORK FOR FUTURE POLICY

The foundation for the future delivery of human services in the County should continue to be based upon valid baseline data and an understanding of specific human service needs. Services should continue to be based upon clearly identified needs, and to this end detailed needs assessments, strategic plans and evaluation should continue to be developed and implemented.

The ongoing refinements to the County's health and human service delivery system, in response to this base data, should direct special attention to the needs of children, low income families and the elderly. The County's future largely rests with the health and vitality of its children. Yet, it is the County's elderly who are the fastest growing segment of the population. The County's health and human service delivery system should respond to the particular needs of these populations through collaborative programs. Similar efforts should be pursued in regard to services for abuse, domestic violence, health, mental health, early childhood development and other human service's needs, including special programs for migrant workers.

While addressing the needs in the paragraph above, special emphasis should be directed to the basic health and nutrition needs of the entire County before other services can be effective and worthwhile. Affordable and convenient access to health and nutritional care must become paramount. Improvements to the County's human services delivery system should continue to be based upon interjurisdictional and inter-agency coordination and, more importantly, on collaboration. This collaboration should be particularly aimed at preventing unnecessary duplication of services and creating the most cost effective service delivery system. Other efforts should focus on periodic review and monitoring to identify unmet needs, and to finding the most appropriate organization (s) to address the need, as well as ways in which resources can be redirected to higher need services.



Chapel at Old Settlers Park

Health and Human Services
Objective and Action Statements

Health and Human Services provide assistance to all persons in Leelanau County including individuals, children, immigrant farm workers, elderly, those with low incomes, and families in need. Assistance from these services and facilities enable individuals to become active and productive, thereby reducing the demand on long term public assistance due to unemployment, disabilities, mental illness, and other difficulties.

The following goals, objectives and action statements are intended to establish the blueprint for the **General Plan** recommendations for the future of the County's health and human services.

Goal: Reduce duplication and/or gaps in health and human services.

Objective:
Stewardship of public resources dictates that the County and local governments and human service agencies should exert every possible effort to make sure that there is a reasonable match between the needs and services.

Action Statement:
Any resources devoted to program areas designed as "over-met" should be redirected to service areas identified as "under met".

Goal: Accommodate special needs of children.

Objective:
County and local governments will assure that children have their basic needs met and have access to developmentally appropriate early childhood care and programming.

Action Statement:
The member organizations of the Leelanau County Family Coordinating Council and the Early Childhood Development Commission and the County school systems should continue to periodically provide a comprehensive identification of the special needs of children in the County, along with community need assessment of available services and delivery systems in order to compare the special needs of children with services delivered.

Action Statement:
Leelanau Parenting Communities will continue to provide services that emphasize the various aspects of parenting and healthy family function using a variety of delivery methods.

Action Statement:

In partnership with the peer based Parenting Communities program, the health department will continue to provide home visiting services to families, as well as health services through the WIC program and immunization programs.

Action Statement:

The district health department will continue to provide home visits services to children 0-26 years of age with chronic, debilitating conditions through the Children's Special Health Care Services Program.

Action Statement:

The Early Childhood Development Commission should continue to identify mechanisms for assuring quality programming and support for families in Leelanau County.

Goal: Provide options for Pre-school/Headstart Education.

Objective:

The County, local jurisdictions and school districts should support and encourage programs for Preschool/Headstart as well as programs which provide a good, basic education for all children and families, including low income, high-risk, minorities, and students requiring special needs (including gifted and talented children).

Action Statement:

The County, local jurisdictions, human service agencies, and schools shall seek out and utilize all available funds and facilities to provide such programs.

Action Statement:

Human service agencies shall place more emphasis on educational programs which stress early education for those students with special needs.

Goal: Accommodate special needs of the elderly.

Objective:

Provide human service programs, sponsored by Leelanau County that will facilitate self-sufficiency of elderly residents. Such programs should assist individuals to achieve their full potential and protect and enhance their personal health and enjoyment of life.

Action Statement:

Abide by all ADA (Americans with Disabilities Act) requirements and when possible, strive for UA (universally accepted) facilities to assist the physically challenged to promote self-sufficiency by all appropriate means.

Action Statement:

Support human service programs, to facilitate self-sufficiency of elderly County residents. Such programs should assist individuals to achieve their full potential and protect and enhance their personal health and enjoyment of life. In addition, support the involvement of volunteers, community-based organizations, non-profits, and senior citizens in mounting service and educational programs.

Action Statement:

The Leelanau County Senior Services should continue to provide services that will permit senior citizens to remain in their own homes and to minimize their dependence on institutional care. Programs such as nutrition programs, homemaker aid, public transportation, respite care and others are appropriate means for achieving this goal. Continue to provide preventive services for the elderly, including but not limited to contact, physical facilities, and congregate meals.

Action Statement:

Support the involvement of volunteers, community-based organizations, non-profits, and senior citizens themselves in mounting service and educational programs.

Action Statement:

Establish funding guidelines that consider state, County and local appropriations as well as fee and charitable gift revenues.

Goal: Accommodate the needs of the physically challenged citizens.

Objective:

Leelanau County will assure no barriers to physically challenged individuals.

Goal: Accommodate the special needs of migrant agricultural workers.

Objective:

Recognition should be given that migrant workers are key members of the County's agricultural community and attention should be given to their needs during their annual residence in the County.

Action Statement:

The district health department will continue to provide migrant WIC services to pregnant and parenting migrant farmworker families.

Action Statement:

The district health department and member organizations of the LCFCC will continue to assure access to health services for migrant farmworker families through referral to the Northwest Michigan Health Services Clinic (migrant clinic).

Action Statement:

The member organizations of the Leelanau County Family Coordinating Council will identify special housing, health care, education and human service needs of migrant farmworkers and develop ways in which existing programs could be strengthened to cost-effectively meet those needs.

Goal: Support domestic violence and substance abuse prevention.

Objective:

Reduce cause and effect of domestic violence and shelter needs.

Action Statement:

The County and local governments should continue to provide information to County citizens as to where to find help in cases of domestic violence.

Action Statement:

Maintain efforts to encourage referral to Traverse City based domestic violence shelters.

Action Statement:

County and local governments should cooperate with various agencies to encourage provision of safe havens from domestic violence.

Objective:

County and local governments should maintain their efforts to prevent and treat substance abuse.

Action Statement:

Health and humans service agencies will refer families for prevention and treatment of substance abuse to agencies such as Third Level Crisis Center and Alcoholics Anonymous.

Goal: Provide County based options for mental health services.

Objective:

Assure a range of mental health services which address the mental health needs of Leelanau County residents and coordinate programming with other state, County, and local agencies providing similar services or serving common clients.

Action Statement:

Conduct an annual review of the community mental health plan and ensure a reasonable relationship between the plan and the annual appropriations and needs for community mental health services in the County.

Action Statement:

The County, health department and the member organizations of the Leelanau County Family Coordinating Council will advocate for mental health services that are based in Leelanau County, and available to Leelanau County residents.



Maple Valley Nursing Home, Maple City.

Goal: All residents of Leelanau County will have access to health care services.

Objective:

The district health department in partnership with other health and human services providers will promote access to health care through direct services to families, advocacy, and home visiting.

Action Statement:

In partnership with Munson Medical Center, the Health Department administrators will continue with regional planning work with the goal to increase the number of primary care and dental providers in the region that will serve Leelanau County residents, improve and expand health promotion/prevention activities, improve and expand home visiting in the region.

Action Statement:

The Health Department and the member organizations of the Leelanau County Family Coordinating Council, will partner with Munson Medical Center and Priority Health to engage the community in discussions about obesity prevention.

Action Statement:

Within the context of the WIC program, staff of the health department will conduct nutrition counseling, promote breastfeeding and promote access to healthy foods, specifically targeting those children at risk for being overweight or obese.

Action Statement:

Within the context of the WIC program and home visiting programs, the health department staff will continue to assess and counsel pregnant women regarding smoking cessation.

Action Statement:

The Health Department will continue to be an active member of the Traverse Area Tobacco Coalition, impacting broad public health policy as it relates to tobacco use.

Chapter 12
BALANCED GROWTH

INTRODUCTION

Land use change is inevitable in Leelanau County. Just over half (56%) of respondents felt Leelanau County was growing too quickly according to the 2018 Planning Questionnaire. New homes, businesses, public buildings, and agricultural operations (among other land uses) are likely and desirable. The primary issues facing the County ~~are~~ is where, when, and what type of land use change will occur, and whether the necessary public services that will be required are currently in place to meet the needs of new development. These growth management issues are fundamental to achieving the desired balance between economic development and environmental protection proposed by this plan.

For the last few decades, the primary development activity in the County has been the construction of new single family homes

For the last few decades, the primary development activity in the County has been the construction of new single family homes. These are largely for seasonal occupancy and/or occupancy primarily by new County residents who work outside the County. Large areas of land are being converted to residential use. See chapter 6. The new businesses and other land use changes that will occur in response to this trend will have a dramatic impact on the character of the County for decades to come. It will be up to coordinated action by County and local governments to guide this new development so as to minimize detrimental resource, safety, and visual impacts. Part One of this plan describes the basic strategy for achieving these goals. This chapter focuses on specific policies and action statements for addressing change in the County.

ISSUES

Land Use Change

Land use patterns dramatically shape the character in the County and the quality of life it offers. Land use affects the character of the County visually, financially, and environmentally. As land is developed, the appearance of the parcel, the surrounding vista, and the transportation corridor within which it is located, are altered.

This results in a transition from a mostly rural character to a more urban or suburban appearance. As land is developed, natural resources associated with the development area are often lost or reduced in quality and/or quantity. The new use usually increases demands upon existing public services and infrastructure. The cumulative effect is often a rise in

taxes to provide the necessary additional services and/or infrastructure. Once land is developed, it rarely reverts to a less intensive use and, where natural, renewable resources are at stake (such as prime farmland), the conversion is permanent.

Leelanau County is particularly vulnerable to the potential negative impacts of land use changes and development. Poorly located and designed development often stands out as a "sore thumb" in contrast to the County's rural and scenic character.

The dramatic effects of land use on the character of the County underscore the necessity that future land use and development patterns be purposely planned and guided, rather than left to evolve by chance.

Leelanau County can be generally described as a "water wonderland" with a landscape dominated by rolling terrain, crop and orchard farms, open spaces and woodlands. The western half of the County is dominated by woodland areas, inland lakes and associated wetland environments, and a spattering of farms. The eastern half of the County is dominated by farmland with intermixed woodland and wetlands. Within this patchwork of rural life rests a few settlement areas of more urban character, including the Villages of Suttons Bay, Northport, and Empire, and the small communities of Leland, Glen Arbor, Cedar, Maple City, Greilickville and the Grand Traverse Band Reservation Area.

Leelanau County land use pattern is a reflection of the competing land use demands placed upon its landscape. There is a wide range of population density. See Table 12-1. The County has traditionally been dominated by vast areas of crop and specialty farming with equally vast areas of special natural resources, including woodlands, wetlands, shorelines, dunes, lakes, and hillsides. The growth of the tourism industry and the influx of seasonal residents have affected the agricultural and natural resource base of the County. In addition, the growth in the County's population has complicated the effective protection of these resources.



Condominiums in Suttons Bay

Table 12-1
Population Per Square Mile

	Leelanau	Benzie	Grand Traverse
1940	24.2	24.7	50.4
1950	25	26	62
1960	27	25	73
1970	32	27	85
1980	41	34.8	117.8
1990	48	38.9	139
2000	60.6	49.8	167
2010	62.5	54.8	187.3

Source - US Census Bureau

Residential Sprawl/Development Pattern

Possibly the most evident impact result of this population growth has been the evolving pattern of sprawl and associated dispersed population. The one time County-wide pattern of large acreage farmland parcels is being replaced in some areas by five to ten acre parcels used for residential purposes.

Residential development drives nearby farmland property assessments higher, followed by increased property taxes. The farmer is faced with a rising property tax bill without the benefit of increased agricultural income to offset the disparity. Ultimately, the farmer may be pressured into selling off small lot splits from his original acreage to increase his income, to offset the rising taxes. Once started, this sprawl cycle increases in intensity and rate.

The resulting pattern of encroaching residential development fragments farmland and other resource acreage. The smaller the acreage of other natural resources, (such as woodlands) the less valuable they become as habitat for wildlife, as elements of the County's rural character, or as income generators for managed timber operations. The loss of the farmland and other natural County resources seriously effect the County's natural and cultural uniqueness.

The traditional large lot zoning scheme (a minimum lot size of 10 acres or less), often employed to protect agricultural lands, is not producing the desired effect across the nation. Yet it is widely practiced throughout the County. More often than not, five to ten-acre parcels are created for the sole purpose of establishing a residence. The result is that one (or two) acres of the lot are used for a house and yard and the remaining acres are left idle. The net result is a loss of acres of productive farmland (or woodland, or mineral resources). The cumulative impact result on productive resource land is affected, though it does protect a certain amount of wildlife.

The resultant lot pattern dramatically increases the cost of public services and emergency response times, as increased amounts of infrastructure need to be constructed and maintained, and greater distances have to be traveled to address the needs of relatively few.

Also, this lot pattern has greatly contributed to the demise of the County's rural character. When developed, these individual lot splits are often characterized by residences lined up along the county road frontage. Not only does this development pattern conflict with the safe and efficient movement of traffic due to increased driveway access points and turning patterns, but views of the rural landscape are effectively hidden and replaced with homes, front yards, garages, mailboxes, and driveways. The sense of rural character within a community is largely derived from the visual experience one has as he or she moves through the community along its roadway corridors. The experience is dramatically reshaped when the visual foreground is dominated by strip residential development.

Increased environmental degradation has become evident as more and more residential development has occurred along the peripheries of and within the County's natural resource areas. This is particularly evident along shoreline areas and hillsides and in some wetlands, with an increasing trend as well toward extensive developments along ridgelines.

Commercial and Industrial Development

Similarly, commercial development has occurred in locations previously dominated by open spaces and a strong pastoral setting. Though the County's principal commercial development is located within village areas, it has begun to encroach into the more rural settings. This disrupts the resource value of surrounding lands and serves as a magnet drawing other nonresidential uses. This spot commercial development can be seen along principal roadway corridors as well as within some of the more interior areas of the County. In a few cases, development was for industrial land uses. This encroachment has the effect of reducing the sense of rural character, increasing the fragmentation of valuable natural resources, increasing traffic demands and hazards along roadways, and generally disrupting the traditional land use pattern which had previously been supportive of its agricultural, open space, and natural resource foundation. It also is occurring in areas not easily provided with public service.

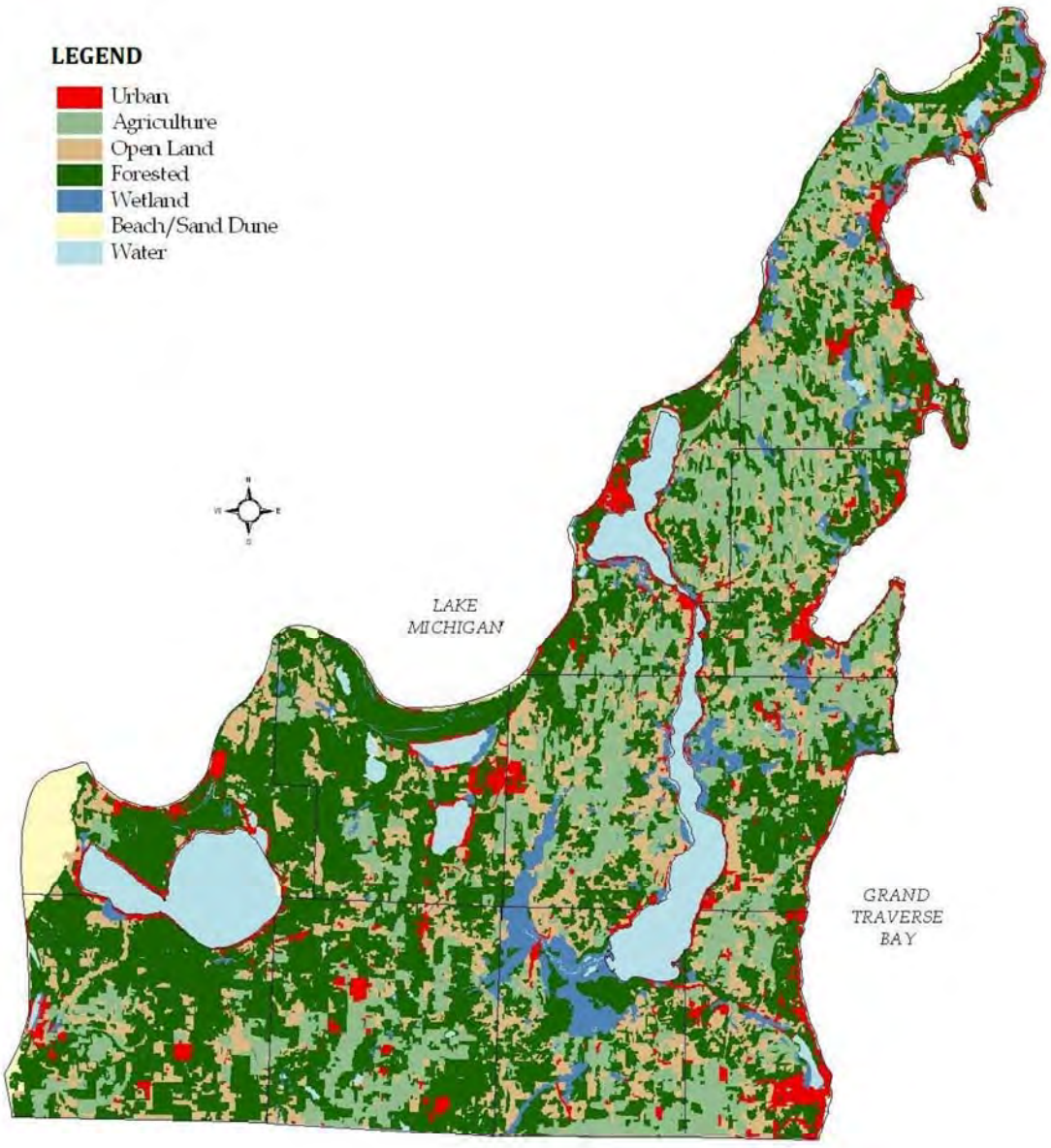
Inadequate County and Local Planning Programs

The above conditions and trends have largely been a result of historically inadequate land use planning and zoning programs throughout the County. Prior to the adoption of the **Leelanau General Plan** in 1995, local municipalities worked from plans that were later considered to have been ineffective in managing new development and population growth. These plans were characterized by: 1) weak planning processes, whereby the general public had minimal effective input into the preparation of the plan; 2) limited mapping of local conditions, thereby increasing the difficulty of analyzing critical local trends and conditions upon which recommendations were made; 3) counterproductive policies regarding long term agricultural, open space, and natural resource preservation; 4) the absence of policies or regulations regarding the preservation of sensitive natural resources; and 5) the inclusion of policies which generally resulted in the loss of the County's rural and historic character through encouragement of a dispersed development pattern.

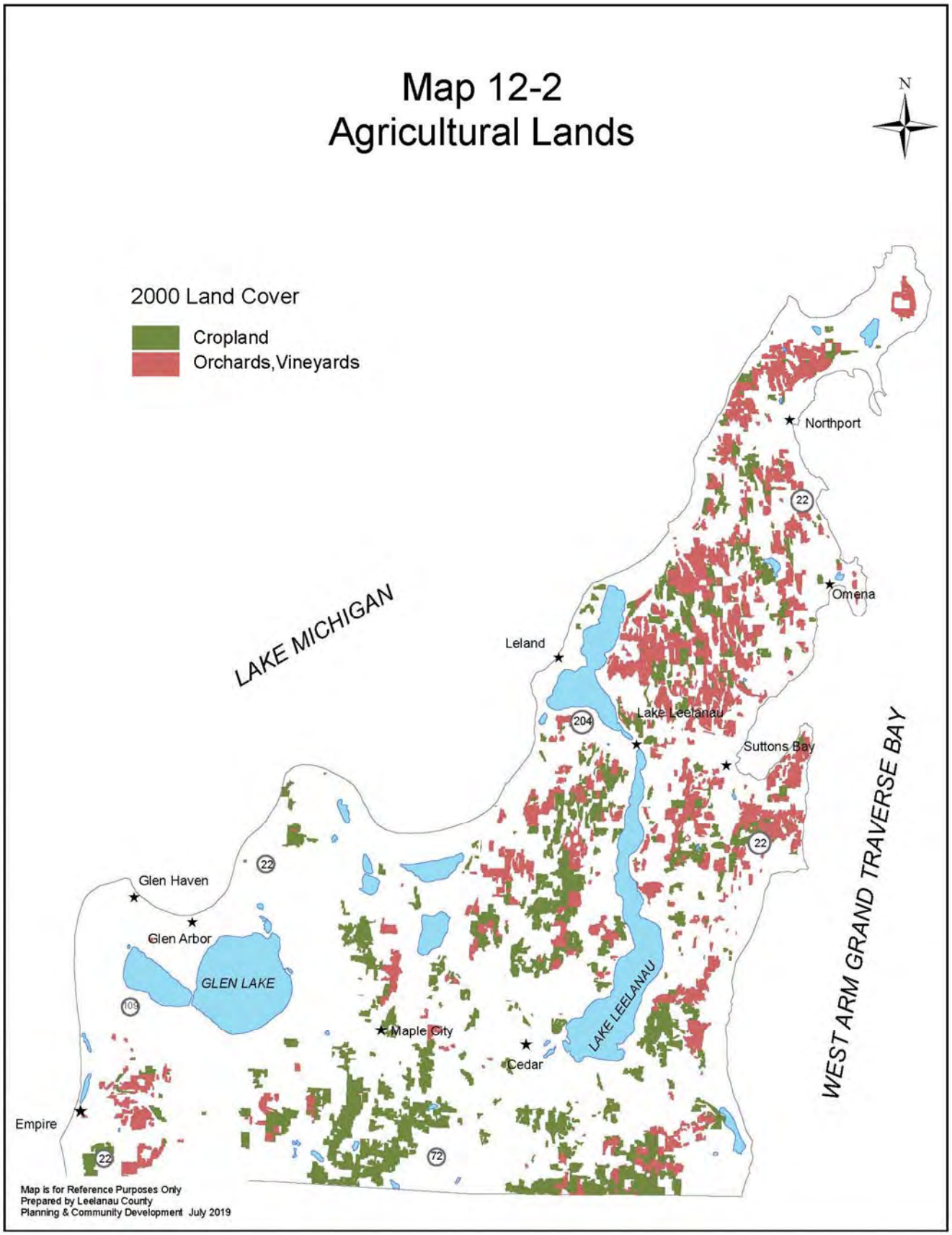


Cherry blossoms, Suttons Bay Township

Map 12-1
Leelanau County
2000 Land Cover



MAP FOR REFERENCE PURPOSES ONLY
Land cover data from analysis of 2000 digital orthophotos.
Prepared by Leelanau County Planning & Community
Development Office. July 2019


Map 12-2
Agricultural Lands
N
2000 Land Cover
Cropland
Orchards,Vineyards
LAKE MICHIGAN
WEST ARM GRAND TRAVERSE BAY
Northport
Omena
Leland
Lake Leelanau
Suttons Bay
Glen Haven
Glen Arbor
GLEN LAKE
LAKE LEELANAU
Maple City
Cedar
Empire
22
204
109
72
Map is for Reference Purposes Only
Prepared by Leelanau County
Planning & Community Development July 2019

Accordingly, locally adopted plans (including the prior County plan and zoning ordinance) were considered to have accommodated development while doing little in the way of managing growth in the County. While some of the locally adopted plans provided direction in the type and location of future land uses, none of those plans addressed the appropriate rate and timing of new development, adequacy of public services at the time new development became operational, or the total amount of appropriate new development.

Table 12-2
Land Cover in Acres, 2000

	Acres	Per-
Urban/Developed	15,957	7.3%
Agriculture	41,767	19.3%
Open Land	38,117	17.6%
Forested	96,223	44.5%
Wetland	3,064	1.4%
Sand Dune	3,410	1.6%
Water	17,825	8.2%
Total	**216,363***	**100%**

However, after the adoption of the **General Plan** in 1995, all of the County's local governments developed new master plans. Many initiatives outlined in the **General Plan** were later incorporated into the newly adopted local plans in an attempt to address the County's myriad land use issues. With assistance from private consultants and the County, most municipalities undertook comprehensive planning activities, including extensive analyses of current conditions through mapping and public surveys. Policies such as clustered housing options, lower overall densities in agricultural districts, environmental protection, and higher densities near lakeshores and villages were included in these plans. And, with the passage of amendments to the planning enabling acts in 2001, local governments are under further obligations to seek input on their plans, update them every 5 years, and link their zoning ordinances directly to their plans. In short, the last ten years have seen a much greater commitment to planning on the part of local governments, with substantial effort being made to balance the County's natural resources with inevitable residential development.

Table 12-3, Agricultural Lands in Acres, 2000

Cropland	18,528	44.4%
Orchards, Vineyards	20,515	49.1%
Other Ag Land (including pasture)	2,724	6.5%
Total agricultural land	**41,767**	***100%***

Note: Table 12-2 DOES NOT include easements/right-of-ways acreages in the total County acreage.

Inadequate County and Local Zoning Programs

The planning efforts that took place after the adoption of the **General Plan** are visible as well in local zoning ordinances, which have been updated to reflect policies advanced by local plans. Many local governments have taken advantage of special development techniques which are geared toward effective resource protection and that are specifically provided for in the state zoning enabling acts. These techniques include: 1) approval of special land uses within a particular district, provided they undergo a special review procedure and meet special and more stringent standards than otherwise applied to "uses by right"; 2) the submittal of project site plans for review and approval prior to the establishment of the development in question; and 3) "planned

Figure 12-1

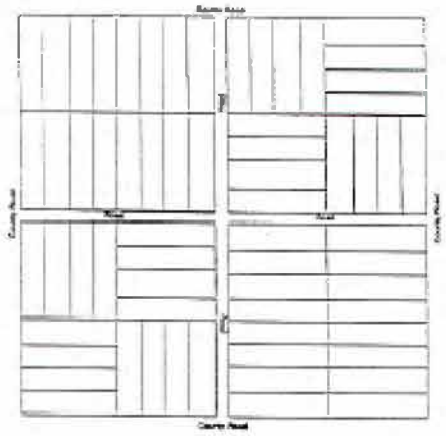
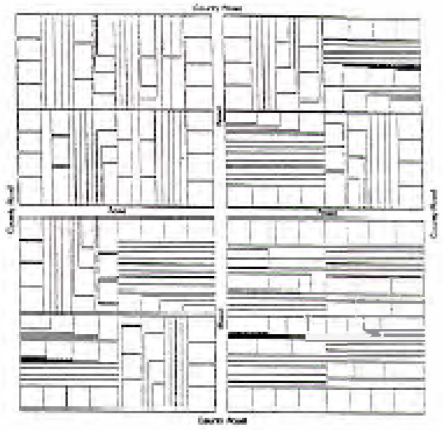


Figure 12-2

1 Section , Second Division



preservation opportunities through more flexible land use and site development than is normally permitted by traditional district standards.

Some zoning issues that created problems in the 80's and 90's are still present today, however. Municipalities in the County still struggle with allowable densities in agricultural districts. Local governments have significant difficulty in designating lot sizes that will be small enough to make building sites both affordable for buyers and profitable for land owners, yet large enough to limit densities in rural areas. And, while the vast majority of the County is zoned into agricultural districts, the predominant minimum lot size in these agricultural districts varies widely between jurisdictions, from 2 acres to 10 acres. Further, a great deal of property that is not in actual agricultural use is nevertheless zoned agricultural. This zoning scheme does little to advance the causes of agriculture or managed growth. "Agricultural zoning" in effect functions as low density residential zoning.

In 1990, the County Planning Department prepared a "build-out" analysis of all zoning then in place in the County. A build-out analysis calculates the total population of a jurisdiction if all undeveloped, but buildable land, is developed at the maximum density permitted "by right" under the zoning ordinance. The County's build-out population, under 1990 zoning, would have been about 285,000 people. Since that time, most townships have revisited residential densities in their zoning ordinances. As a result, the build-out potential under 2004 zoning regulations was reduced to about 153,550 people. This is a significant decrease in development potential; but nevertheless illustrates a continued permissiveness in local zoning regulations.

While a realization of the County's full buildout potential is unlikely, the fact remains that local zoning is designed in such a manner that it accommodates – and in some cases, encourages – vast population growth.

Efforts are being made to funnel some of this population growth into planned communities, through the use of open space and cluster housing regulations. These zoning tools allow landowners to design more compact, aesthetically pleasing residential developments on large tracts of land, as an alternative to simply splitting off the maximum number of lots allowed by zoning. These developments have the advantage of permanently preserving larger tracts of open space, and include design elements that help retain rural character and protect sensitive environmental features. While open space/cluster zoning regulations are currently on the books in most townships, some difficulties remain in actually developing these types of communities. They are typically allowed as "special uses" and are thus subject to different application and approval processes than traditional lot splits. And, because they usually involve high densities in rural areas, they generate a great deal of public outcry. Open space/cluster housing proposals often result in lawsuits, particularly when large acreages are involved. Despite the design controls inherent in planned developments, many residents protest that high densities, and their accompanying population increases, are inappropriate in rural areas. This phenomenon is a testament to the fact that many of the same problems that arise with scattered residential development – such as traffic, service issues, and increased taxes – occur in cluster developments as well. In order to address some of these issues, many townships have recently begun examining alternative zoning techniques, such as "conservation zoning" plans, which can permit developers to apply maximum densities while preserving rural character.

Efforts are being made to funnel some of this population growth into planned communities, through the use of open space and cluster housing regulations.

These density and development issues are common to all jurisdictions in the County. They do not, however, translate into consistent regulations across the County. There are 15 municipalities and a sovereign nation found in the 350 square miles in the County, all with their own land use regulations. The extreme variability among local zoning ordinance fragments the County and upsets the geographic and visual wholeness of the County and its local municipalities. Inconsistent standards encourage fragmented and disjointed development patterns, and establish inappropriate or unplanned growth areas.

Subdivision Regulations

Until the Land Division Act of 1997, which amended the Subdivision Control Act of 1967, there was a lack of regulations for lot splits in the County. The Subdivision Control Act allowed four splits every 10 years, plus an unlimited number of land splits if each parcel sold was over 10 acres. These regulations have been blamed for retail and residential development sprawling into areas of farmland. The Land Division Act changed the rules for splitting land. The Land Division Act, adopted in 1997, regulates the number of splits based on the size of the original parcel (the 'parent parcel'). Prior to the Land Division Act, parcel splits resulted in inappropriately shaped lots, unbuildable lots, lots with inadequate drainage and other public services, lots without adequate access, lots which unnecessarily fragmented important resource areas, and other undesirable conditions. Many examples can be found around the County.

Today, all townships have a designated person who reviews and approves all lot splits to make sure they conform to the Land Division Act. Townships have also adopted regulations such as site plan review, private road standards, and site condominium regulations which allow more input and guidance from citizens and township officials regarding the shape and location of new lots.

Farmland Preservation

The Leelanau Conservancy offers a program which allows for the purchase of development rights (PDR) on eligible farms. The program, which is voluntary, allows a farmer to sell some or all of the development rights on an active farm, in order to capture part of the monetary value of their land while permanently preserving active farmland. The development rights are purchased with a combination of federal, State, and local dollars.

The State of Michigan also utilizes a program to award funding for the purchase of development rights. Criteria for the program includes the eligibility and economic viability of the farmland, as well as the degree of local commitment to the preservation program. When considering "local commitment," the State looks at things such as the amount of land designated for preservation; the percentage of townships that have opted into the program; the presence of matching funds; and planning and zoning policies that are supportive of agriculture.

There are 15 municipalities and a sovereign nation found in the 350 square miles in the County, all with their own land use regulations.

Cumulative Impacts *Results* of Current Trends

Leelanau County's population increase will result in a far more accelerated rate of sprawl, land and resource fragmentation, extensive residential developments in rural areas, consumption of agricultural lands, disturbance of natural resource areas and sensitive resource areas, and traffic problems. Accompanying this trend will be the continued loss of the County's rural character as rural roadway corridors evolve into linear urban forms with strip residential development that effectively screen those rural qualities previously visible from the road. With the incremental loss of rural character, the area tourism industry may well suffer.

A sprawl development pattern in the County will generate an increasing level of local concern regarding present conditions and what the future may hold. Local planning and zoning programs will have an increasingly difficult time providing guidance in addressing pressing issues. Ultimately, the public will increasingly call for local government to provide adequate direction for the coexistence of competing land use demands.

A FRAMEWORK FOR FUTURE POLICY

The local plans of municipalities should include policies regarding the planned future land use pattern and public services delivery program which support comparable policies of the Leelanau **General Plan**. This plan recognizes that a degree of uniqueness is desirable to be main-

tained among local municipalities and that there should be a corresponding degree of flexibility between a local plan and the county-wide plan. However, flexibility should not weaken the foundation of mutual concern in the General Plan or otherwise fundamentally diverge from what is considered most appropriate for the county as a whole. In addition, each local plan should specify substantive policies addressing the issues of growth according to type, location, rate and timing, total amount, and the provision of public services to meet project needs prior to new development becoming operational. Local plans should be property specific while the county plan will be area specific.

Agriculture, forest land and open space protection should play a leading role within the planned future land use pattern of each local Township. To this end, farmland and forest land which is considered economically viable on a long term basis and worthy of protection should be identified. Parcel size and soil suitability should be key determinants in this identification.

Consistent ordinances could be created throughout the County, to establish a regulatory program aimed at effective long term protection of agricultural and forest land. The premise of these regulations should be the prevention of land fragmentation where prime renewable resources exist. Local plans and zoning ordinances should provide for adequate buffers between residential and resource areas, based upon uniform county-wide standards, to better ensure the long term viability of these resources.

Equally proactive measures can be taken to preserve the county's other open spaces. A flexible open space zoning ordinances can provide an alternative to the traditional large lot zoning approach. These regulations should provide for residential development, preserve important open spaces and sensitive lands, and minimize the visual impact ***outcome*** of the new residential development. Permitted development would be directed toward those open spaces not characterized by prime farmland soils. Open space zoning can be applied only to those areas where the preservation of renewable resources is not the principal intent. For renewable resources, preservation programs should be used instead.

At the heart of open space, farmland, and forest land protection programs would be a research and education initiative to identify and protect valuable productive and environmentally sensitive lands. This would include adequate public facilities are in place to meet the immediate needs of such development. Such policies can be clearly stated within local plans and carried forward into local zoning ordinances. Particular attention should be given to new proposed resort developments. Large resorts are commercial in nature and generate impacts ***issues*** beyond the immediate municipality. Accordingly, such projects should be reviewed on a multi-jurisdiction basis including the municipality in question, adjoining municipalities, and county agencies. Efforts should also be made to create opportunities for value-added agriculture, which will provide year-round jobs while supporting the agricultural economy.

Special consideration should be given to providing affordable housing opportunities in close proximity and/or in association with full service commercial centers including cultural, child care, and employment opportunities.

Strip residential development can be very strongly discouraged through local land use plans and regulations that encourage a more compact and less destructive settlement pattern. Potentials for such developments can be identified early through model project review procedures. The same considerations equally apply to strip commercial development. Where new commercial development cannot be incorporated into the county's existing village centers, new small compact centers should be provided consistent with local zoning regulations.

Public service districts are proposed in Part One as a key element of the plan implementation strategy. They are intended to identify the future limits of public services, and associated urban development, within a specified time period. Thus, a "village" services district, or similarly named district, would identify the bounds within which a local municipality intended to introduce new or expanded public services to support a village development pattern. On the other extreme, a "rural" services district would identify the bounds within which no substantial introduction or expansion of public services would occur and within which the continuation of the existing rural character is planned.

A "partial" or "limited" services district could provide for a level of public services somewhere between the village and rural services districts. The determination of the service district boundaries would be critically linked to the planned future land use pattern in the municipality and county.

The implementation of service districts better ensures that the county and its local municipalities will have a compact development pattern and managed growth rates. The implementation of the service districts also enables municipalities to more effectively plan and prioritize capital improvements, as well as to minimize unnecessary public service cost*s*.



Farm and Orchard

Implementation of the service districts will ultimately need to be rooted in the master plans adopted by the local municipalities . These plans should identify the boundaries of each service district, the planned future land use pattern within each district, the intended levels of public

services planned for each district, the basis for the locations of each district, and conditions whereby changes to the district boundaries would be appropriate

Local plans and regulations should be enhanced to provide for increased protection of the county's special resources. Land use demands placed upon inland lakes would be minimized through adoption of keyhole regulations *and greenbelt regulations.* Extraction of the minerals should be based upon local plans and regulations which provide for the protection of priority sand and gravel resources and the surrounding environments and the reclamation of extraction sites.

To support this proactive approach to future land use across the county, the county should provide technical and other assistance to municipalities working with the Leelanau General Plan. This is especially true where legal challenges are initiated. Similarly, the county should assist local municipalities in the development of consistent local regulations based upon previously prepared county model regulations. And, with the passage of legislation that stresses regional cooperation, local governments should also be encouraged to take advantage of grant programs and other opportunities to create consistent plans and zoning regulations. Continuity in implementation of local plans and regulations would be achieved through the training of new planning commissioners, zoning board of appeals, township board and village council members. The basis of the Leelanau General Plan and the role that each local official can play in its implementation should be included in the training program.

LAND USE POLICIES AND ACTION STATEMENTS

The following Goals, Objectives, and Action statements are intended to establish the blueprint for the General Plan's vision for future land use:

Goal: To preserve Agricultural and Forest land to the greatest extent possible by protecting the economic viability of farming and allowing farmers to capture the development value of farmland without creating scattered suburban developments which cannot be serviced economically.

Objective:

County and local governments should initiate proactive measures to protect farm and forest land.

Action Statement:

Maps and records should be created of those farm areas most likely to remain economically viable for renewable resource management (contiguous land units at least 40 acres in size with prime farm, orchard, and forest soils) and those areas most threatened with conversion to other uses, to be updated every 10 years.

Action Statement:

The County Planning Commission should work together with local governments to create model ordinances (such as open Space Residential and PUDs) to reduce land fragmentation of renewable resource lands and conversion to non-farm or non-forested activities.

Action Statement:
Local governments, with the assistance of the County, should adopt coordinated zoning provisions which provide adequate buffers between agricultural and adjacent land uses to protect the future viability of the farmlands.

Action Statement:
Open space zoning should be adopted by local governments to supplements existing large lot zoning districts as a means of residential development outside of villages. Open space zoning should not be encouraged in areas where more exclusive techniques better designed to protect sensitive environments, prime farm or forest lands could be used. Encourage adoption of open space zoning, such as clustered housing, by local units of government to supplement existing large lot zoning districts as a means of residential development outside of villages.

Action Statement
Non-prime resource lands should be encouraged by local zoning to be used for new development wherever feasible as long as sensitive environments (such as wetlands, dunes and floodplains) are protected. Encourage new development on non-prime land, where feasible, as long as sensitive environments such as wetlands, dunes and floodplains are protected.

Action Statement:
The County Planning Commission and Planning office should initiate a study examining the impacts of open space/cluster housing developments on rural areas. The study should include an evaluation of the benefits and problems associated with these developments, an overview of existing open space development regulations, and recommendations as to the most appropriate situations for such developments.

Objective:
Residential development patterns throughout the county should reflect economical and efficient use of land and be especially mindful of the value of protecting renewable resource lands from premature conversion or land fragmentation. In particular, development patterns should be consistent with the need for a variety of housing types and lot sizes and consistent with existing average densities of development when in villages. It should also minimize conversion of productive farmland and where non-prime land is not available, incorporate new homes as part of an open space zoning development.

Action Statement:
The County Planning Commission, with the assistance of the local governments in the county, should establish model land development standards to achieve the average densities proposed in this plan. In particular, special attention should be given to establishment of zoning standards to continue traditional village development patterns when villages are enlarged or if new village settlements are created.

Action Statement:
Provide for a variety of housing types and lot sizes consistent with existing average densities of development, when in villages.

Action Statement:
Encourage development patterns that minimize conversion of productive farmland. Where non-prime land is not available, incorporate new homes as part of an open space zoning development.

Goal: Encourage commercial development that is reflective of the character of Leelanau County.

Objective:
Discourage strip commercial development and promote compact and cluster development patterns through local land use plans and regulations.

Action Statement:
Local governments throughout the county should adopt plans and regulations which discourage (or better, prohibit) strip commercial development and spot zoning practices. Regulations should encourage the development of mixed-use commercial and residential centers in a way that is pleasing, conforming and reflective of the character of Leelanau County.

Action Statement:
Local governments should implement and adhere to objective site plan review standards for development proposals.

Action Statement:
Encourage local units of government to implement access control regulations throughout the county as a tool to better control access in emerging commercial areas and prevent the spread of a strip commercial pattern.

Action Statement:
Local comprehensive land use plans and zoning regulations should focus new commercial and industrial development in planned locations with a "Class A" road (or equivalent) and other adequate public facilities and in the amount necessary to meet immediate as opposed to speculative needs.

Action Statement:
Local comprehensive land use plans and zoning regulations should focus new commercial and industrial development in existing villages or existing commercial service centers except where careful planning has identified the need for and public benefits of locating new commercial or industrial facilities elsewhere.

Action Statement:
Existing commercial centers should be supported by flexible zoning practices that encourage flexibility and support zoning practices that encourage retention of existing businesses as well as adaptive reuse of existing buildings. Allow existing buildings and commercial centers to be used for a new use.

Action Statement:
New commercial development that cannot be accommodated in existing village centers should be encouraged by local zoning to locate in multiuse commercial centers: small commercial centers surrounded by residential areas rather than in strip malls or other forms of strip commercial development.

Action Statement:
New large resort development should be considered a commercial use of land that has impacts of greater than local concern. As such, approvals for new resort development should be reviewed and evaluated by adjoining local governments and county agencies prior to a decision by the local government having the development approval authority.

Objective:
Village, partial and rural service districts should be established for sewer, water, and roads to prevent sprawl and to economically provide only the services necessary for the average development densities established by the Leelanau General Plan and implemented ***as determined*** by local plans and zoning regulations.

Action Statement:
Local comprehensive land use plans, local zoning regulations, and both local and county public facility decisions should reflect conformance with the village, partial, and rural service districts established in this Leelanau General Plan (see action statements which follow).

Action Statement:
Village service districts are established in this plan to identify the future extent of public services for new sewers, water, and roads within the next twenty years in those areas abutting existing villages in the county. An urban service area should be designated in that urban portion of southeast Elmwood Township abutting Traverse City.

Action Statement:
Special areas in the county, such as around an inland lake, that may benefit from some limited public service, such as a sewer system to solve a water quality problem, may be established as a partial services district. Such service areas should not be developed or designed so as to accommodate more intensive future development unless redesignated as a village service district. Where less capital intensive solutions are possible (such as a septic tank maintenance program) they should be used.

Action Statement:
The portion of the county not in an urban service district, a village service district or a partial service district, should be in a rural service district.

Action Statement:
Local governments without existing public sewer and water facilities and services should introduce such services only when and where there is a demonstrated need for such services and no other feasible or preferable alternative is available.

Objective:
Local comprehensive land use plans and development regulations should include buffer standards between residential land uses and agricultural, commercial or industrial land uses to minimize the nuisance impacts of one use upon the other.

Action Statement:
Local governments should establish appropriate buffer standards between land uses and promote common use of these standards throughout the county, and distribute educational materials to promote wide understanding and application of buffer standards.

Action Statement:
Local zoning regulations should require the land developer to provide the buffer, not the adjoining farmer or other landowner.

Objective:
Low density compatible uses should be encouraged by the creation of flexible zoning and incentive programs for private landowners who commit their land to uses which enhance the scenic resources and the public investment in parks.

Action Statement:
Local governments should create incentive programs which have the effect of decreasing residential density on appropriate land adjacent to public parks. Acquisition of conservation easements could be used as the preferred method for preserving scenic land in private ownership near the parks.

Action Statement:
Local plans and zoning ordinances should recognize the importance of preserving scenic open space near parks. Local government units may create ordinances which encourage low density and/or clustered development and quality commercial development in villages adjacent to parks. Such zoning should be compatible with incentive programs to preserve land and should include site plan review provisions for new development near existing parks.

Objective:
Regulations to protect inland lakes from the effects of keyholing and shoreline erosion and fertilization should be established and implemented.

Action Statement:
Keyhole regulations should recognize the importance and legitimacy of public access to inland lakes and not work to thwart efforts to increase public access promoted by other policies in this plan. Different types of public access can be provided for (e.g., for recreation, or for fire trucks to draw water in an emergency).

Action Statement:
Local governments should adopt greenbelt regulations for lakes and streams that require setback areas with native vegetation and limited tree removal.

Action Statement:
Local governments, with the assistance of the County, should work to develop keyholing and greenbelt regulations that are consistent across jurisdictions.

Objective:
Economically viable sand and gravel resources should be identified and protected from surface conversion to other uses prior to initiation of extraction activities. Extraction should always be based on an approved reclamation plan which focuses on the future land use after extraction activities are complete.

Action Statement:
Local governments should include protection of priority sand and gravel resources in local comprehensive land use plans and zoning regulations.

Objective:
Training programs which, a) outline the purpose and goals of the Leelanau General Plan, b) describe the responsibilities of local Commission and Board members and, c) provide case studies of various zoning issues that demonstrate the need for objectivity and consistency in decision making, should be conducted/coordinated periodically by the county.

Action Statement:
The County Planning Department and Planning Commission should administer the creation and presentation of annual training programs.

Action Statement:
County and local officials should participate in formal training programs such as the Citizen Planner program and Certified Zoning Administrator program offered through MSU Extension.

Objective:
Local governments should adopt zoning regulations that promote energy conservation as a part of new land use and development activity.

Action Statement:
The County Planning Commission should develop a model ordinance that ensures protection of solar and wind access rights for application in local site plan reviews.

Action Statement:
The County and local governments should encourage use of energy saving technology in new construction and site design.

Objective:
In preparing land use plans and zoning regulations, local governments should provide for a variety of housing types.

Action Statement:
The County and Housing Action Committee (HAC) should assist local governments in identifying the overall need for different housing types, with emphasis on requirements of populations such as the elderly, infirm, migrant workers, young families, workforce housing, and low income.

Action Statement:
Local zoning ordinances should provide for a variety of housing types including small lot single family homes, multiple family dwellings, and condominiums.

Action Statement:
The permitting and plan approval review processes for housing developments should be simplified as one means of reducing housing costs.

Action Statement:
Zoning and other land use regulations should have the flexibility to accommodate practical and affordable housing options.

Action Statement:
The county and local governments should support initiatives for congregate housing for elderly and other special needs populations.

Action Statement:
The County should maintain its housing rehabilitation and replacement program through the Planning and Community Development office.

Action Statement
The County, and the HAC should participate with the nonprofit Leelanau REACH (Resources for Economical and Accessible Community Housing), Homestretch, and Habitat for Humanity, in order to continue efforts to add to the County's affordable housing stock. Efforts should include new construction and the facilitation of donations of homes to relocate to new lots.

Action Statement:
The County should utilize programs of the US Department of Housing and Urban Development, Michigan State Housing Development Authority, and other related programs for technical and financial assistance.

Action Statement:
The County, HAC, local governments, and non-profits should cooperate and coordinate efforts to add affordable housing to the County's housing stock.

Chapter 13
LOCAL AND COUNTY LAND USE ISSUES

INTRODUCTION

This chapter advocates continuance of the traditional practice of most land use decisions being made at the local level of government, however, it also acknowledges the appropriate role of County policy makers in issues of greater than local concern.

The current legal structure for land use decisions in Michigan places authority for most land use decisions with the local unit of government (if the local unit wishes to exercise this authority). This is usually exercised through local comprehensive (land use) plans and zoning regulations as authorized by several enabling statutes. In some areas, counties make these decisions if local governments choose not to exercise their authority, as with County zoning.

Other land use decisions are made at the County or state level. Examples include decisions on prisons, landfills, and hazardous waste facilities. In some cases authority can be shared or transferred between state and County or local governments, as with the administration of dunes, high risk erosion, wetlands, or natural river zoning provisions. In each of these examples, a separate state statute defines the respective procedures and responsibilities of the decision making entities.

At the local level, there is a greater opportunity for input in the democratic processes associated with land use decisions. Local officials are also likely to have a far greater familiarity with particular properties and land uses than are government officials far away. As such, as a general principle, land use first and most obvious, is evident where exclusively local decisions prevent consideration of broader public concerns. This is most apparent in a situation where a community is attempting to be exclusionary, as in prohibiting the establishment of low cost housing (like a mobile home park) or is attempting to prevent the creation of a needed public facility like a prison or recycling station. Obviously, if every local government took the same position, affordable housing, prisons, or recycling stations would never be established anywhere.

Second, this principle also fails where a local government does not have the fiscal, administrative, human, legal, and/or other necessary resources to adequately administer local regulations. Without trained personnel, and the fiscal resources to pay them, and to defend attacks on local regulations, then unequal treatment and inconsistent application of regulations will occur. This undermines the legal validity of local regulations and may ultimately result in their being set aside by the courts. This will prevent achievement of the public policy objectives the regulations are intended to implement.

A third problem is evident when seemingly innocuous individual land use decisions cumulatively add up to a very serious and negative result. Thus, while most land use decisions are made, and should remain being made at the level of government closest to the people affected (city, village, or township), efforts should be made to improve, enhance, and coordinate local land use decisions across the entire County.

This **General Plan** advocates an improved institutional relationship between the townships and villages and the County, as well as improved support services from the County to local governments, relating to planning and zoning programs.



Sutton Bay Village Marina

Chapter 14

STRUCTURE FOR LAND USE DECISION MAKING

INTRODUCTION

The **Leelanau General Plan** was developed in the 1990's with an unprecedented level of inter-jurisdictional cooperation and participation from governments and citizens alike. It has been reviewed and updated several times since it was first developed. Together, residents of Leelanau County worked together to develop this plan; and its implementation and success will depend on their continued support. Intergovernmental communication, cooperation, and coordination will be crucial in achieving success.

Institutional Structure

Fundamental to successfully working together in the implementation of the **General Plan**, is having a clear understanding of the respective roles and responsibilities of County and local governmental agencies. Following is a description of the institutional structure for implementing the **General Plan.** The role of each of the major "players" is also described.

Mutual Respect and Mutual Support

This institutional structure, which effectively began in 1995 with the adoption of the **General Plan**, is based on the responsibilities imposed on the County and its local governmental bodies by existing state law and historical traditions. But to be successful, it will need mutual respect where their responsibilities overlap and mutual support where they are separate.

As local plans are updated and adopted, they should be more specific with regard to land use, and focused on local concerns. The local governing body should be more involved with planning, as it also may approve the plan adopted by its planning commission. Local plans should be updated at least once every five years. Local plan compatibility with the **General Plan** will continue to be the focus of the County Planning Commission, as required by Michigan Planning Enabling Act (Act 33 of 2008)

The County Planning and Community Development Office and Board of Commissioners will continue to provide a variety of local support services to local government efforts**,** in order to implement elements of the local plan that are compatible with the **General Plan**, and will not oppose local planning and regulatory efforts compatible with the **General Plan**. Likewise, local governments should support Planning Commission and County Board of Commissioners efforts to implement the **General Plan.**

Local Planning Commissions and Governing Bodies

All of the traditional roles and responsibilities of local planning commissions and governing bodies remain.

Local units of government will continue to be responsible for local planning, and the administration of zoning, subdivision regulations, decisions on local zoning requests, and the issue of local land use permits. They could, however, if they so wish, share this administration with other local units of government, or contract to have it done by a private party, or even by the County. There will be stronger involvement by the governing body in preparation and maintenance of the local comprehensive (or master) plan as the governing body may approve the plan following adoption by the local planning commission.

All local zoning ordinances must be consistent with the local plan and should be updated at least once each five years. Local plans and zoning regulations (including village plans which are now statutorily required to be reviewed by the county) are submitted to the County Planning Commission for review and comment prior to adoption.

Local planning commissions, working in concert with their governing body, are called to participate in the preparation of (and thereafter annually update) a 6-year capital improvement program (CIP). The CIP should indicate the type and location of new capital improvements (new facilities, land, or major additions/changes to existing facilities). The CIP should indicate when the project will be initiated, the cost, method of financing and how long it will take to finish.

The local governing body should make a special effort to appoint qualified people representing important interests, to serve on the local planning commission and to provide adequate financial resources and professional services to the planning commission so that it can appropriately complete its responsibilities. It should also work with the planning commission in the preparation and/or updating of the local master plan and capital improvements program, as well as on development regulations. It may formally approve the local comprehensive (or master) plan following adoption by the planning commission.



Citizens and local government representatives attend a training session at the Government Center.

County Planning Commission

The principal duties to be performed by the Planning Commission are listed below. All are authorized by the Michigan Planning Enabling Act (Act 33 of 2008).

- **Prepare and maintain the General Plan**. The **General Plan** is reviewed at least once every five years. The **General Plan** serves as a guide for long-range development of local comprehensive plans with respect to the pattern and intensity of land use and the provision of public facilities, as well as for any long-range fiscal plans for such development.

- **Review local plans and zoning regulations**. The County Planning Commission will continue to use the **General Plan** in its review of local plans and zoning proposals (including new ordinances, amendments and rezonings).

- **Guide public facility decisions**. The County Planning Commission is directed to maintain the **General Plan** so that it may be used as a guide to city, village, township, and County facility decisions as well as joint County/local government investment decisions. Decisions on new County public facilities will be made by the County Board of Commissioners, but only after receiving a recommendation and approval by the County Planning Commission as to consistency with the **General Plan** and the current capital improvements program.

  The statutory authority requiring County Planning Commission review and approval of public works proposal was initiated with the adoption of the **General Plan** by the County Board of Commissioners and the Michigan Planning Enabling Act. This applies to the expenditure of funds by a County board, department or agency for acquisition of land, the erection of a structure or extension, correction or improvement of any physical facility, including roads or drains, until the County Planning Commission has reviewed the proposed location and extent of the project and reported back to the County Board and/or the department or agency submitting the proposal. If the project or proposal is consistent with the adopted capital improvements program and the **General Plan**, then it will be recommended for approval.

- **Coordinate planning and growth management activities with other public and private agencies (especially as relates to issues of greater than local concern).** The County Planning Commission is charged with cooperating with all state, federal (including the National Park Service), and local governments and other public agencies (such as schools, Leelanau Conservation District, etc.) as well as with the Grand Traverse Band of Ottawa and Chippewa Indians, and will seek to coordinate with their programs in the County. The County Planning Commission will be encouraged to coordinate planning efforts with private agencies as well, such as utility companies, chambers of commerce, etc.

- **Seek grants and other financial assistance.** In addition to the powers allowed by other provisions of the County Planning Act, the County Planning Commission, with approval of the County Board may apply for, receive and accept grants from any governmental agency, or from the federal government, and agree to and comply with such terms and conditions as may be necessary, convenient or desirable.

- **Provide technical assistance**. As a part of their coordination function, and in order to ensure implementation of the **General Plan**, the County Planning Commission will be authorized to assist in structuring technical assistance services to public agencies and citizens. These activities will be largely provided through the County Planning Department and will be dependent on budgeted funds and/or fee for service arrangements.

- **Support the Maintenance of a Data Center in the County Planning Office**
  The Planning Commission will assist County government in providing policy assistance in the maintenance of the County's geographic information system (GIS) and County-wide website. The website, which includes a wide range of information on subjects including population, land use, and government services, is used by County departments, local governments, and citizens. As such, all County departments, as well as local governments, will continue to play a role in the maintenance of this system.

- **Prepare and Promote Model Ordinances**
  The County Planning Commission, with staff support, is charged with the responsibility to propose standards, criteria, and suggested model ordinances to regulate the use and development of land and water within the County. These will be developed through subcommittees with input by interested and affected parties. The Planning Commission will use these to help encourage the development and implementation of uniform regulations throughout the County.

- **Arrange and Promote Education Opportunities on Planning and Growth Management**
  The County Planning Commission is charged with the responsibility of ensuring that each of its members has basic and advanced training in the exercise of their responsibilities as County Planning Commissioners. Being aware of new planning approaches and implementation tools to address emerging problems and opportunities in the County is of special interest. In fulfilling this responsibility, the County Planning Commission is encouraged to promote and arrange, as feasible, convenient educational opportunities for planning commissioners, zoning board of appeals members and members of governing bodies in local units of government in the County. The County Planning Commission is encouraged to conduct an annual day-long conference for local government officials on a variety of issues of contemporary interest in the County.

  The County Planning Commission provides summary and other educational materials for broad public distribution. These materials focus on describing plans, planning concepts, regulations, and/or special programs in terms suitable for easy understanding by a wide audience.

- **Carry Out Specially Delegated Responsibilities of the County Board of Commissioners**
  In addition to the above duties, the County Planning Commission from time to time, also undertakes special studies, or advises on special studies or special issues assigned to them by the County Board of Commissioners.

All Planning Commission decisions are expected to be in writing with supporting documentation. The County Planning Commission is expected to maintain (and update as necessary) rules of procedure (or bylaws) and use them as a guide to its conduct and procedure.

A report of Planning Commission activities accompanied by a work program and budget for the next year is annually prepared.

Local Planning Commissions

Planning commissions in cities, townships, villages and the County are organized under the Michigan Planning Enabling Act (Act 33 of 2008). Some of their principal responsibilities include:

- Creating, adopting and maintaining a local comprehensive plan to guide future land use change and to serve as the legal basis for the local zoning ordinance.
- Creating, maintaining and administering responsibilities under the local zoning ordinance adopted pursuant to the Michigan Zoning Enabling Act (Act 110 of 2006)
- Advising the local governing body on proposed rezonings, text amendments, plats, capital improvements and related planning or zoning decisions.
- Educating citizens on the values and benefits of planning.
- Welcoming citizens and citizen comments on local planning and zoning issues and acting upon or referring those comments as appropriate.
- Conducting required public hearings prior to acting on zoning, subdivision or infrastructure development matters.
- Considering the recommendations of the County Planning Commission and/or County Planning and Community Development Office on planning and zoning issues.
- Working with property owners in order to try to achieve good development/redevelopment.
- Initiating amendments to ordinances as necessary and soliciting advice.
- Learning about and staying up to date on their responsibilities as planning commissioners and on various tools available in implementing local plans.
- Making recommendations on special projects or delegated responsibilities (e.g., zoning ordinance enforcement).

Local Governing Body

The local city or village council and township board of trustees also have specific planning and zoning responsibilities. These include:

- Appointment of qualified persons representing important interests, to serve as members of the planning commission and zoning board of appeals.
- Adoption of ordinances recommended by the planning commission for implementation of the master plan, including but not limited to a zoning ordinance and subdivision regulations.
- Providing an adequate budget for the planning commission to carry out its responsibilities, including keeping the plan and zoning ordinance current, and receiving proper training on their roles, responsibilities and new tools, and techniques for improving the community.
- Receiving and acting on citizen input and complaints about planning and zoning issues as appropriate referring matters to the planning commission for action.

County Planning Commission Structure

The County Planning Commission was created by the County Board of Supervisors on January 13, 1970, pursuant to the requirements of the County Planning Act, PA 282 of 1945. Initially it also had responsibility under PA 183 of 1943 to prepare and implement a county zoning ordinance. This responsibility was suspended in December 1992 as the last township in the County without its own zoning ordinance adopted an interim zoning ordinance (Suttons Bay Township) and then adopted a new zoning ordinance and master plan. In May of 2011, a new ordinance was approved by the County Board of Commissioners to comply with the new Michigan Planning Act. The 11-member County Planning Commission includes representation in accordance with the Planning Act.

Standing Subcommittees

In order to broaden input in consideration of key issues of greater than local concern, the County Planning Commission may establish standing subcommittees to advise it.

Role of the County Planning and Community Development Office

The principal responsibilities of the County Planning and Community Development Office include those listed below. However, none of the current responsibilities listed in the sidebar are proposed to be dropped even if not mentioned below:

1. **Providing Staff Assistance to the County Planning Commission**
   The County Planning Department will continue to provide the principal staff assistance to the County Planning Commission in the discharge of each of the ten major duties described above.

2. **Providing Staff Assistance to the County Board and other County Agencies**
   The County Planning Department will continue to provide staff assistance to the County Board of Commissioners and other County departments as directed or requested (and as financial and personnel resources permit).

3. **Provision of Technical Assistance Services to Local Governments**
   In addition, it provides expanded technical assistance services to local governmental units in support of actions to implement the **General Plan**. The County Planning Department is permitted to offer these services on a fee or other basis pursuant to guidelines proposed by the County Planning Commission and approved by the County Board of Commissioners.

4. **Maintenance of a Data Center**
   A special responsibility of the County Planning Department in conjunction with other County departments, is the continued development and maintenance of the County website and geographic information system (GIS). A wide range of local, County, state and federal data sets will continue to be gathered and maintained for use in the website and GIS.

5. **Represent the County on Various Committees**
   The County Planning Department will continue to represent the County on various committees (both inside and outside of the County), and provide staff support to ongoing County committees such as: Solid Waste Council, Housing Action Committee, etc.

County Board of Commissioners Role

As relates to planning and efforts to better guide growth in the County, the primary responsibilities of the County Board of Commissioners include:

1. **Appoint Qualified Members of the County Planning Commission**
   It is very important to ensure that as new Planning Commissioners are appointed, that persons capable of representing both County-wide interests and their own jurisdiction be appointed. A mechanism for local input by citizens and local government officials in each jurisdiction will be established to generate a list of qualified candidates prior to making any appointments.

2. **Maintain a Qualified Professional Planning Director and Planning Staff**
   The policies and action statements of the **General Plan** will require continued employment of a qualified professional planning director and additional planning staff. A job description for the director requiring, at a minimum, a degree in urban or regional planning or a closely related field, and certification as a professional community planner (Michigan) or via American Institute of Certified Planners (AICP), or at least 5 years of professional experience as a planning director in an agency with comparable services will be maintained. This will help ensure the continued high quality professional service the County has grown to enjoy from its Planning staff. In addition, as County planning staff responsibilities grow, so must staff resources to meet those needs.

3. **Provision of Technical Assistance Services to Local Governments**
   As critical as maintaining trained and experienced staff is, the maintenance of an adequate budget to support activities of the County Planning Commission and County Planning Department in support of the **General Plan** and technical assistance services is as critical. The annual report and work program will assist in identifying the necessary funding requirements. Opportunities will continue to open to provide maps and other services on a fee basis. These should be explored as supplemental revenue, but not at the exclusion of completing other required responsibilities.

4. **Making Decisions on County Initiated or Financed Infrastructure**
   With the adoption of the **General Plan**, and the revision of the current annual capital improvements programming (CIP) it is possible to make better informed decisions on future public facility and infrastructure issues. These decisions should be based on input from the County Planning Commission and the general public.

5. **Help With Local Government Efforts Compatible with the General Plan**
   Professional services to local governments who desire to modify/update local plans or development regulations to be compatible with the **General Plan**, may be initiated. Professional services, maps and data from the County Planning Department should go a long way to helping local governments do the best possible job with local planning and zoning programs.

6. **Approve the Leelanau General Plan**
   Following adoption of the **General Plan** by the County Planning Commission, it will be important for the County Board of Commissioners to formally approve the **General Plan**, and thereafter approve any amendments to it. No other action will more graphically demonstrate continued County Board support for this important growth management tool.

TYPICAL DUTIES OF THE LEELANAU COUNTY PLANNING AND COMMUNITY DEVELOPMENT OFFICE

The County Planning and Community Development Department provides a variety of technical support functions to:

- The County Board of Commissioners
- The County Planning Commission
- Solid Waste Council
- Brownfield Redevelopment Authority & Land Bank Authority
- Leelanau Clean Water
- As necessary, special boards and commissions of the County.
- Local units of government.
- Other County departments.

Specific responsibilities include:

- Representing the County in County-wide committees, task forces and special groups.
- Providing County representation in regional planning and economic development groups.
- Responding to data requests from citizens, outside interests, local units and County entities.
- Maintaining County-wide socio-economic, census and environmental data bases, and a computerized mapping system.
- Providing technical and administrative support for the County Solid Waste Plan implementation efforts.
- Spearheading special studies, projects and reports for the County board and/or other entities as assigned.
- Preparing staff reports on various requests from local units of government (rezoning, amendments, plans, etc) and transmitting analysis on these to the County Planning Commission.
- Monitoring hot topics in planning and land use issues and proposing regulations and land use plan text amendments based on updated knowledge.
- Conducting background studies and making recommendations for a variety of planning needs in the County.
- Conducting and participating in education seminars, meetings and other community outreach efforts to both educate the public and strengthen planning staff skills.
- Administration of the County's affordable housing program.
- Monitoring state and federal policies and programs that influence County planning efforts.
- Budgeting and other administrative functions for the Planning Department.
- Administration of the Brownfield Redevelopment Authority, and U.S. EPA grants and Michigan Department of Environmental Quality (EGLE) loans/grants.
- Participation in the Land Bank Authority.
- Administrative functions for Leelanau Clean Water (LCW).

Role of Other Governmental Agencies

A special effort will be made by the County Board of Commissioners, County Planning Commission and County planning staff to establish formal, regular communication with the County Road Commission, County Drain Commission and Health Department in the pursuit of mutual objectives under this plan. All new public facilities proposed by these agencies are to be included in the annual County CIP according to procedures adopted by the County Board of Commissioners.

The County Planning Department is responsible for establishing and maintaining, as necessary, liaison with state and federal agencies whose decisions could impact on the successful implementation of the **General Plan.**

Relationship with Citizens and the General Public

Ultimately all public services are established and maintained for the benefit of the present and future citizens and visitors of the County. As this new institutional structure is refined and implemented, it is important that existing opportunities for public input and assistance not be reduced, and that as feasible, they be expanded to include people not presently represented. Opportunities will include not only those required by law at public hearing, but also other less formal opportunities as resources become available or the need becomes more apparent.

The role of the citizen has been instrumental in providing guidance in the development of this **General Plan**. It is intended that the citizen continue to have ready access to the planning process and information and policies developed as a result of it.

Chapter 15
GENERAL PLAN IMPLEMENTATION



INTRODUCTION

Achievement of the principal goal of this **General Plan** requires an effective program of coordinated local and county efforts. The principal institutional components of this program were presented in Chapter 14. This chapter describes the general process to be followed. Key priorities for inclusion in short range action programs and budgets are also identified. A more detailed process for implementation will need to be developed after adoption of the **General Plan** for annually updated work programs tied to local and County budgets.

As important a benchmark as this plan represents, the initiatives proposed in the **General Plan** will not implement themselves. It will take the concerted efforts of citizens, elected officials, local and County planner, and other administrative officials to bring this plan from concept into reality. It will take continued support and commitment for many years. However, the goals of this plan and the actions proposed to implement it offer the promise of a much better future than that likely to occur if existing trends continue unabated.

The central ingredients to successful implementation will be commitment by citizens, by the County Board of Commissioners, and by support from local units of government. Benefits to all groups will be most visible in terms of lower infrastructure and maintenance costs for public facilities and retention of the rural character of the landscape (so cherished by residents and visitors). Many indirect benefits will also occur. For example, local plans and development regulations will be easier and less costly to prepare and maintain because the information in the Planning and Community Development Department's "County data center" can easily be updated and displayed on maps from the Geographic Information System and on the County-wide website. In working in partnership with the County in a manner compatible with this plan, local governments will be able to justifiably provide for a narrower range of land uses in their plans and zoning regulations.

This could eliminate the continued scattering of commercial and industrial uses in inappropriate locations while improving the success of businesses established in appropriate locations. These and many other benefits previously identified will result from implementation of this **General Plan**.

As this **General Plan** explains, County concerns related to growth and development issues are most significant on issues of greater than local concern. Such issues, while numerous, do not include the full range of land use issues that must be addressed by local communities, but they do overlap on certain issues. This should not be viewed as negative, or an obstacle to progress, but rather as an opportunity to insure that both local and County-wide issues are adequately addressed before making decisions on issues of greater than local concern.

Process Leading to Plan Implementation

There are two basic steps that need to be addressed in implementing this **General Plan.** They are:

- Plan adoption process.
- Establishment of a process for updating the plan.

As important a benchmark as this plan represents, the initiatives proposed in this General Plan will not implement themselves.

Plan Adoption Process

The plan proposes adoption by the County Planning Commission, with approval by the County Board of Commissioners. The County Planning Commission needs to conduct a public hearing(s). The plan will be submitted to each local governmental unit in the County and public notices will announce the review period. Any suggestions for revisions that are received during the public review period, will be forwarded to the County Planning Commission. Additional refinements may occur as a result of this process and prior to adoption. Following adoption of the **General Plan** by the County Planning Commission, it will be formally submitted to the County Board of Commissioners. The County Board has the option of final approval of the document, if they pass a resolution to that affect.

Mechanism for Updating the General Plan

An annual report on actions taken to implement the plan should be made to the County Board of Commissioners, along with adoption of any necessary amendments by the County Planning Commission. Periodically, and at least once each five years, the **General Plan** should be thoroughly reviewed and updated.

Key Priorities

The most important priorities identified should be included, wherever feasible, in work programs and budgets by the appropriate organization(s). This list should be annually updated and supplemented. Action statements should be considered as priorities :

The central ingredients to successful plan implementation will be commitment by the County Board of Commissioners and support from local units of government.

Top Priority Actions:

- A County capital improvement programming process (CIP) that is annually updated.
- Continued development of the "County data center" within the County Planning and Community Development Department and the County-wide website.
- Expansion of technical assistance services of the Planning Department to meet growing needs by County agencies, local governments, businesses, and citizens in the County. A special emphasis of expanded services should include priority service to communities acting in partnership with the County in implementation of the **General Plan**.
- Continued support for new legislation to provide new tools to better guide growth and manage change.



Vineyard in Suttons Bay Township

Appendix

2018 Leelanau County Questionnaire Final Report

September 25, 2018

This report was prepared by the
Land Information Access Association (LIAA)

BACKGROUND

In 2018, the Leelanau County Planning Commission contracted with the Land Information Access Association (LIAA) to assist in the development and facilitation of an online county-wide questionnaire. The results of the questionnaire will be used by the Planning Commission to help inform the development of a new Master Plan for the County.

This report offers detailed results of the questionnaire. The report shows the survey results for each question, with a number of tables representing different subgroups of the survey respondents. A full copy of the questionnaire can be found in *Appendix A*.

In addition, results of the questionnaire were tabulated for:

- Each individual jurisdiction: *Appendix C*
- Each individual school and all schools combined: *Appendix D*

ABOUT THE QUESTIONNAIRE

On May 10, 2018, the online questionnaire was officially opened for public interaction at *www.MyLeelanau.info*.

On May 30, 2018, postcard invitations (see *Appendix B*) encouraging participation in the online questionnaire were mailed to 17,149 addresses throughout Leelanau County. In an attempt to reach as many homeowners and residents as possible, the postcards were mailed to all property owners and registered voters within the county.

In an effort to solicit opinions from the youth of Leelanau County, a link to the survey was also provided to the superintendent and/or principal of each public/private middle school and high school within Leelanau County.

The online questionnaire was officially closed on June 26, 2018. In total, 1,607 questionnaires were started and 1,412 were fully completed.

There were 295 questionnaire respondents that identified themselves as students (though only 275 respondents completed the student section of the questionnaire). The other 1,312 respondents most likely came from the postcard mailing, a response rate to the postcard of greater than 7.5%.

Demographics

The following tables summarize the demographic information of the respondents to the questionnaire.

Question 1. Please choose the best description of yourself from the following list:

Table 1. Question 1 for All Respondents

	Percent	Total
I am a student in middle school, high school or college	18.40%	295
I live year-round in Leelanau County	49.47%	793
I live seasonally in Leelanau County	17.59%	282
I own property in Leelanau County but do not live in Leelanau County	14.54%	233

If the respondent answered *I am a student in middle school, high school or college* in question one, the respondent was then asked to answer four additional questions (questions 2, 3, 4 and 5).

Question 2. Are you a student in?

Table 2. Question 2 for Student Respondents

	Percent	Total
Middle School (6th, 7th or 8th grade)	17.39%	48
High School (9th, 10th, 11th or 12th grade)	80.80%	223
College	1.81%	5

Question 3. Which school do you currently attend?

Table 3. Question 3 for Student Respondents

	Percent	Total
Leland Public School	45.82%	126
Glen Lake Public School	24.00%	66
Northport Public School	0.00%	0
Suttons Bay Public School	18.55%	51
Pathfinder	0.00%	0
Leelanau School	0.00%	0
St Mary School	9.45%	26
Homeschool	0.73%	2
Northwestern Michigan College	0.73%	2
Other College or University	0.73%	2

Question 4. After finishing your education, how likely are you to do the following? Please choose the one option that most closely matches your opinion for each item.

Table 4 shows the results for Question 4 for all student respondents. Several key results from the questionnaire are listed below.

- Roughly 60% of student respondents are *very likely* or *likely* to live in Leelanau County upon finishing their education.
- Roughly 45% of student respondents are *very likely* or *likely* to live in the Grand Traverse region upon finishing their education.
- Just under half (48%) of student respondents are *very likely* or *likely* to begin working in Leelanau County upon finishing their education.
- Just under half (48%) of student respondents are *very likely* or *likely* to begin working in the Grand Traverse region upon finishing their education.
- Roughly 63% of student respondents are *very likely* or *likely* to move away from the area upon finishing their education.
- Roughly 76% of student respondents are *very likely* or *likely* to travel upon finishing their education.

Table 4. Question 4 for Student Respondents

	Very Likely		Likely		Unlikely		Very Unlikely		Total
	Percent	#	Percent	#	Percent	#	Percent	#	
Live in Leelanau County	14.84%	38	46.09%	118	31.25%	80	7.81%	20	256
Live in the Grand Traverse region	9.35%	23	36.59%	90	42.28%	104	11.79%	29	246
Begin working in Leelanau County	14.92%	37	33.47%	83	40.73%	101	10.89%	27	248
Begin working in the Grand Traverse region	11.20%	27	37.34%	90	37.76%	91	13.69%	33	241
Move away from the area	26.15%	68	37.31%	97	28.08%	73	8.46%	22	260
Travel	29.20%	73	47.20%	118	17.60%	44	6.00%	15	250

Question 5. As you approach a decision to stay in or leave the Grand Traverse region after your education, how important are the following things to your decision-making process? Please choose one option that most closely matches your opinion for each item.

Table 5 shows the results for Question 5 for all student respondents. Several key results from the questionnaire are listed below.

- A significant majority of student respondents indicated the following factors are either *very important* or *important* in their decision to stay in or leave the Grand Traverse region after their education: available jobs in your area of interest (94%); wages and the ability to earn a living (95%); housing availability and cost (95%); and the availability of urban services such as health care, shops and restaurants (90%).
- A majority (68%) of student respondents indicated that rural character of the region is either *very important* or *important* in their decision to stay in or leave the Grand Traverse region after their education. However, it was the lowest rated factor of the 10 options listed.
- Roughly 28% of student respondents indicated that proximity to the Great Lakes or inland lakes and rivers was *very unimportant* or *unimportant* in their decision to stay in or leave the Grand Traverse region after their education.
- Roughly 23% of student respondents indicated that the availability of nightlife or places for social interaction was *very unimportant* or *unimportant* in their decision to stay in or leave the Grand Traverse region after their education.

Table 5. Question 5 for Student Respondents

	Very Important		Important		Unimportant		Very Unimportant		Total
	Percent	#	Percent	#	Percent	#	Percent	#	
Available jobs in your area of interest	57.20%	155	37.27%	101	4.06%	11	1.48%	4	271
Availability of continuing educational opportunities	37.50%	99	48.11%	127	13.26%	35	1.14%	3	264
Wages and the ability to earn a living	64.75%	169	31.03%	81	2.68%	7	1.53%	4	261
Availability of nightlife or places for social interaction	30.68%	81	45.45%	120	20.45%	54	3.41%	9	264
Housing availability and cost	57.03%	150	38.78%	102	3.04%	8	1.14%	3	263
Location of family members or friends	38.20%	102	42.70%	114	17.60%	47	1.50%	4	267
Availability of outdoor recreation experiences	33.59%	88	48.09%	126	15.27%	40	3.05%	8	262
Proximity to the Great Lakes or inland lakes and rivers	32.21%	86	38.95%	104	23.60%	63	5.24%	14	267
Rural character of the region	18.46%	48	50.38%	131	24.23%	63	6.92%	18	260
Availability of urban services (e.g., health care, shopping or restaurants)	40.60%	108	49.62%	132	7.14%	19	2.63%	7	266

Question 6. In which municipality do you live or own property?

Table 6. Question 6 for All Respondents

	Percent	Total
Bingham Township	8.78%	137
Centerville Township	6.02%	94
Cleveland Township	7.11%	111
Elmwood Township	12.24%	191
Empire Township	6.53%	102
Glen Arbor Township	9.74%	152
Kasson Township	4.93%	77
Leland Township	11.34%	177
Leelanau Township	11.92%	186
Solon Township	3.97%	62
Suttons Bay Township	9.35%	146
Village of Empire	0.96%	15
Village of Suttons Bay	2.82%	44
Village of Northport	2.88%	45
Not Sure	1.41%	22

Table 6b. Question for All Respondents, by Jurisdiction

	Percent	Total	Est. Population*	Percent Response
Bingham Township	8.78%	137	2,498	5%
Centerville Township	6.02%	94	1,311	7%
Cleveland Township	7.11%	111	1,093	10%
Elmwood Township	12.24%	191	4,530	4%
Empire Township	6.53%	102	1,221	8%
Glen Arbor Township	9.74%	152	625	24%
Kasson Township	4.93%	77	1,424	5%
Leland Township	11.34%	177	2,205	8%
Leelanau Township	11.92%	186	1,874	10%
Solon Township	3.97%	62	1,612	4%
Suttons Bay Township	9.35%	146	2,991	5%
Village of Empire	0.96%	15	363	4%
Village of Suttons Bay	2.82%	44	540	8%
Village of Northport	2.88%	45	556	8%
Not Sure	1.41%	22		

* 2012 – 2016 American Community Survey (ACS) Population Estimates. US Census Bureau

Question 7. Are you a registered voter in Leelanau County?

Table 7a. Question 7 for All Respondents

	Percent	Total
Yes	50.48%	783
No	49.52%	768

Table 7b. Question 7 for All Non Student Respondents

	Percent	Total
Yes	59.76%	762
No	40.24%	513

Question 8. What is your age group?

Table 8 shows the results for Question 8 for all respondents. Several key results from the questionnaire are listed below.

- Roughly 68% of all the respondents were 51 years old or older.
- Roughly 32% of all the respondents were 50 years old or younger.
- Roughly 19% of all the respondents were under 18 years old.

Table 8. Question 8 for All Respondents

	Percent	Total
Under 18	19.13%	296
18-25	1.62%	25
26-35	2.52%	39
36-50	8.79%	136
51-65	33.48%	518
Over 65	34.45%	533

Question 9. What is your employment status?

Table 9. Question 9 for All Respondents

	Percent	Total
Full-Time Student	13.11%	201
Employed, Full-Time (not self-employed)	23.03%	353
Employed, Part-Time (not self-employed)	9.20%	141
Self-Employed	13.63%	209
Unemployed and Seeking Work	0.85%	13
Unemployed, not Seeking Work	1.17%	18
Retired	39.01%	598

Question 10. Where do you work?

Table 10 shows the results for Question 10 for all respondents. Just over 35% of respondents noted they physically work outside of Leelanau, Grand Traverse and Benzie counties. Of the respondents who answered "other," 12% live year-round in Leelanau County, 37% live seasonally in Leelanau County and 46% own property in Leelanau County, but don't live in Leelanau County.

Table 10. Question 10 for All Respondents

	Percent	Total
Leelanau County	36.47%	260
Grand Traverse County	16.69%	119
Benzie County	0.70%	5
Other	35.34%	252
Work from home, but company located outside Leelanau, Grand Traverse and Benzie Counties	10.80%	77

Question 11. Approximately how far is your commute from home to work, one way?

Table 11 shows the results for Question 11 for all respondents. Several key results from the questionnaire are listed below.

- Roughly 59% of all the respondents travel 10 miles or less one way from home to work, or roughly 20 minutes of daily commute time.
- Roughly 8% of all the respondents have more than a 30-mile commute one way from home to work, or roughly an hour (or more) of daily commute time.

Table 11. Question 11 for All Respondents

	Percent	Total
Under 5 miles	37.01%	248
5 to 10 miles	21.94%	147
10 to 20 miles	19.70%	132
20 to 30 miles	13.43%	90
30 to 40 miles	3.13%	21
Over 40 miles	4.78%	32

Question 12. What is your household income?

Table 12a shows the results for Question 12 for all respondents. Table 12b shows the results for Question 12 for all respondents over 51 years of age. According to median household income statistics from the 2012-2016 US Census American Community Survey, the Median Household Income for Leelanau County is $59,018. Roughly 28% of all respondents have a household income of less than $60,000. Roughly 71% of all respondents have a household income more than $60,000.

Table 12a. Question 12 for All Respondents

	Percent	Total
Under $20,000	3.63%	45
$20,000-$39,999	10.65%	132
$40,000-$59,999	13.96%	173
$60,000 or above	71.75%	889

Table 12b. Question 12 for All Respondents 51 Years and Older

	Percent	Total
Under $20,000	2.19%	21
$20,000-$39,999	8.86%	85
$40,000-$59,999	13.24%	127
$60,000 or above	75.70%	726

Question 13. How many children under 18 years old are living in your household?

Table 13. Question 13 for All Respondents

	Percent	Total
None	80.47%	1,071
1	7.21%	96
2	6.91%	92
3	3.76%	50
More than 3	1.65%	22

Table 13a. Question 13 for All Respondents, Except for Survey Responders Identified as "Students" and "Retired"

	Percent	Total
None	72.90%	460
1	10.78%	68
2	10.62%	67
3	3.96%	25
More than 3	1.74%	11

Question 14. How many children over 18 years old are living in your household?

Table 14. Question 14 for All Respondents

	Percent	Total
None	85.44%	1,138
1	10.14%	135
2	3.38%	45
3	0.60%	8
More than 3	0.45%	6

Question 14. How many children over 18 years old are living in your household?

Table 14a. Question 14 for All Respondents, Except for Survey Responders Identified as "Students" and "Retired"

	Percent	Total
None	81.62%	515
1	13.31%	84
2	4.12%	26
3	0.63%	4
More than 3	0.32%	2

Leelanau County's Character

Question 15. What are the most important qualities of Leelanau County?
Please choose the one option that most closely matches your opinion for each item.

Table 15a shows the results of Question 15 for all survey respondents. Tables 15b and 15c show the results of Question 15 for student and non-students respondents respectively.

In general, a large percentage of all survey respondents identified water quality (86%) and access to Lake Michigan and inland lakes (75%) as *very important* qualities of Leelanau County. These two characteristics ranked the highest for both student and non-student questionnaire respondents.

For non-student respondents, scenic views (69%) ranked the third highest *very important* quality, quiet (65%) ranked the fourth highest *very important* quality, and dark sky (62%) ranked the fifth highest *very important* quality.

For student respondents, local food (51%) ranked the third highest *very important* quality, family-owned businesses (45%) ranked the fourth highest *very important* quality, and seeing and hearing lots of wildlife (44%) ranked the fifth highest *very important* quality.

Nearly half of all survey respondents identified gravel and unimproved roads as an *unimportant* quality (39%) or *very unimportant* quality (10%) of Leelanau County. About 43% of survey respondents

identified hunting and fishing opportunities as either an *unimportant quality* (30%) or *very unimportant* quality (13%) of Leelanau County. Wineries and vineyards ranked the fourth-lowest *unimportant* quality (23%) for non-student respondents and second-lowest *unimportant* quality (34%) for student respondents, respectively.

One of the biggest differences between responses from students and non-students was the quality listed as "civic events, celebrations and festivals," where 31% of student respondents ranked it as *very important* but only 14% of non-students ranked it as *very important*.

Table 15a. Question 15 for All Respondents

	Very Important		Important		Unimportant		Very Unimportant		Total
	Percent	#	Percent	#	Percent	#	Percent	#	
Access to Lake Michigan and Inland Lakes	75.28%	1,142	20.83%	316	3.36%	51	0.53%	8	1,517
Access to Sleeping Bear Dunes National Lakeshore	55.88%	846	34.15%	517	8.85%	134	1.12%	17	1,514
Forested Hills and Ridges	52.94%	793	39.39%	590	6.68%	100	1.00%	15	1,498
Scenic Views	65.25%	980	31.23%	469	3.06%	46	0.47%	7	1,502
Working Farms and Open Fields	49.64%	748	39.08%	589	10.09%	152	1.19%	18	1,507
Local Food	50.03%	759	40.67%	617	7.91%	120	1.38%	21	1,517
Wineries and Vineyards	25.28%	379	41.56%	623	25.68%	385	7.47%	112	1,499
Quiet	60.77%	917	32.47%	490	5.77%	87	0.99%	15	1,509
Dark Sky	58.59%	873	30.00%	447	9.73%	145	1.68%	25	1,490
Seeing and Hearing Lots of Wildlife	52.92%	798	38.33%	578	7.89%	119	0.86%	13	1,508
Hunting and Fishing Opportunities	22.13%	330	34.21%	510	30.65%	457	13.01%	194	1,491
Bicycling and Walking Paths	48.67%	732	38.83%	584	9.38%	141	3.13%	47	1,504
Low Amounts of Traffic on Most Side Roads	50.60%	761	38.96%	586	9.38%	141	1.06%	16	1,504
Gravel and Unimproved Roads	15.54%	230	34.93%	517	39.46%	584	10.07%	149	1,480
Civic Events, Celebrations and Festivals	17.35%	259	47.89%	715	27.80%	415	6.97%	104	1,493
Small Towns and Villages	52.62%	793	40.74%	614	5.71%	86	0.93%	14	1,507
Family Owned Businesses	49.67%	742	41.70%	623	7.16%	107	1.47%	22	1,494
Water Quality	86.97%	1,321	12.11%	184	0.66%	10	0.26%	4	1,519

Table 15b. Question 15 for all Non-Student Respondents

	Very Important		Important		Unimportant		Very Unimportant		Total
	Percent	#	Percent	#	Percent	#	Percent	#	
Access to Lake Michigan and Inland Lakes	78.26%	983	18.63%	234	2.55%	32	0.56%	7	1,256
Access to Sleeping Bear Dunes National Lakeshore	58.68%	737	32.72%	411	7.72%	97	0.88%	11	1,256
Forested Hills and Ridges	56.97%	707	37.31%	463	5.00%	62	0.73%	9	1,241
Scenic Views	69.32%	863	28.35%	353	1.93%	24	0.40%	5	1,245
Working Farms and Open Fields	53.12%	664	37.68%	471	8.40%	105	0.80%	10	1,250
Local Food	49.84%	627	41.10%	517	7.71%	97	1.35%	17	1,258
Wineries and Vineyards	25.88%	322	43.01%	535	23.95%	298	7.15%	89	1,244
Quiet	65.60%	822	30.01%	376	3.67%	46	0.72%	9	1,253
Dark Sky	62.16%	767	28.28%	349	8.02%	99	1.54%	19	1,234
Seeing and Hearing Lots of Wildlife	54.71%	685	38.10%	477	6.71%	84	0.48%	6	1,252
Hunting and Fishing Opportunities	19.74%	244	34.55%	427	32.12%	397	13.59%	168	1,236
Bicycling and Walking Paths	50.36%	629	37.15%	464	9.45%	118	3.04%	38	1,249
Low Amounts of Traffic on Most Side Roads	52.28%	654	38.21%	478	8.47%	106	1.04%	13	1,251
Gravel and Unimproved Roads	15.18%	186	35.76%	438	40.00%	490	9.06%	111	1,225
Civic Events, Celebrations and Festivals	14.46%	179	47.66%	590	30.29%	375	7.59%	94	1,238
Small Towns and Villages	54.48%	681	40.48%	506	4.32%	54	0.72%	9	1,250
Family Owned Businesses	50.61%	627	41.73%	517	6.21%	77	1.45%	18	1,239
Water Quality	88.89%	1,120	10.32%	130	0.48%	6	0.32%	4	1,260

Table 15c. Question 15 for All Student Respondents

	Very Important		Important		Unimportant		Very Unimportant		Total
	Percent	#	Percent	#	Percent	#	Percent	#	
Access to Lake Michigan and Inland Lakes	60.85%	157	31.40%	81	7.36%	19	0.39%	1	258
Access to Sleeping Bear Dunes National Lakeshore	42.35%	108	40.78%	104	14.51%	37	2.35%	6	255
Forested Hills and Ridges	33.86%	86	49.21%	125	14.57%	37	2.36%	6	254
Scenic Views	45.67%	116	44.88%	114	8.66%	22	0.79%	2	254
Working Farms and Open Fields	32.28%	82	46.46%	118	18.11%	46	3.15%	8	254
Local Food	51.17%	131	38.28%	98	8.98%	23	1.56%	4	256
Wineries and Vineyards	22.62%	57	34.13%	86	34.13%	86	9.13%	23	252
Quiet	37.55%	95	43.87%	111	16.21%	41	2.37%	6	253
Dark Sky	41.90%	106	37.94%	96	17.79%	45	2.37%	6	253
Seeing and Hearing Lots of Wildlife	44.66%	113	39.13%	99	13.44%	34	2.77%	7	253
Hunting and Fishing Opportunities	33.73%	85	32.54%	82	23.41%	59	10.32%	26	252
Bicycling and Walking Paths	40.87%	103	46.83%	118	9.13%	23	3.17%	8	252
Low Amounts of Traffic on Most Side Roads	42.80%	107	42.40%	106	13.60%	34	1.20%	3	250
Gravel and Unimproved Roads	17.46%	44	30.95%	78	36.90%	93	14.68%	37	252
Civic Events, Celebrations and Festivals	31.35%	79	49.21%	124	15.48%	39	3.97%	10	252
Small Towns and Villages	43.70%	111	42.13%	107	12.20%	31	1.97%	5	254
Family Owned Businesses	45.24%	114	41.27%	104	11.90%	30	1.59%	4	252
Water Quality	77.34%	198	21.09%	54	1.56%	4	0.00%	0	256

Current Conditions

Question 16. Please choose the one option that most closely matches your opinion for each item.

Table 16 shows the results for Question 16 for all respondents. Several key results from the questionnaire are listed below.

- Just over half (56%) of respondents *strongly agree* or *agree* that Leelanau County is growing too quickly.
- A significant majority (83%) of respondents *strongly agree* or *agree* that housing is too expensive for first-time home buyers and young families in Leelanau County.
- A majority (67%) of respondents *strongly agree* or *agree* that more senior/assisted housing is needed in Leelanau County.

- Just over half (55%) of respondents *strongly disagree* or *disagree* that there are too many short-term rentals in Leelanau County.
- Just over half (55%) of respondents *strongly disagree* or *disagree* that Leelanau County is losing its rural character, whereas 44% of respondents *strongly agree* or *agree* that Leelanau County is losing its rural character.
- A significant majority (81%) of respondents *strongly agree* or *agree* that Leelanau County needs more access to high-speed internet.
- A majority (69%) of respondents *strongly agree* or *agree* that curbside recycling is needed in towns and villages throughout Leelanau County.
- A majority (61%) of respondents *strongly agree* or *agree* that Leelanau County should have additional trails and pathways.
- A majority (67%) of respondents *strongly agree* or *agree* that declining school enrollment is concerning.
- A majority (61%) of respondents *strongly agree* or *agree* that current regulations limit the use of alternate energy sources in residential areas.

Table 16. Question 16 for All Respondents

	Strongly Agree		Agree		Disagree		Strongly Disagree		Total
	Percent	#	Percent	#	Percent	#	Percent	#	
Leelanau County is growing too quickly (e.g., people, development)	17.92%	259	38.20%	552	40.42%	584	3.46%	50	1,445
Housing is too expensive for first-time home buyers and young-families	44.89%	641	38.80%	554	13.94%	199	2.38%	34	1,428
More senior/assisted housing is needed in Leelanau County	16.68%	225	51.00%	688	28.84%	389	3.48%	47	1,349
There are too many short-term (30 days or less) rental accommodations in Leelanau County	16.11%	218	28.38%	384	46.12%	624	9.39%	127	1,353
Leelanau County is losing its rural character	18.33%	262	31.28%	447	46.54%	665	3.85%	55	1,429
Leelanau County needs more access to high speed internet	45.62%	651	35.88%	512	16.12%	230	2.38%	34	1,427
Curbside recycling is needed in towns and villages throughout Leelanau County	31.00%	447	38.00%	548	27.05%	390	3.95%	57	1,442
Leelanau County should have additional trails and pathways	23.28%	332	43.48%	620	28.75%	410	4.49%	64	1,426
Declines in school enrollment are concerning	23.52%	325	43.70%	604	27.86%	385	4.92%	68	1,382
Current regulations limit the use of alternative energy sources in residential areas	20.05%	245	41.41%	506	32.73%	400	5.81%	71	1,222

Question 17. Please choose the one option that most closely matches your opinion for each item.

Table 17 shows the results for Question 17 for all respondents. Several key results from the questionnaire are listed below.

- Over half (56%) of respondents *strongly disagree* or *disagree* that the housing opportunities in Leelanau County meet the needs of its residents.
- A significant majority (72%) of respondents *strongly agree* or *agree* that there are enough commercial services in Leelanau County.
- A significant majority (72%) of respondents *strongly agree* or *agree* that Leelanau County is adequately served by BATA.
- Just over half (52%) of respondents *strongly agree* or *agree* that there are enough jobs in Leelanau County, whereas 47% of respondents *strongly disagree* or *disagree* that there are enough jobs in Leelanau County.
- A significant majority (74%) of respondents *strongly agree* or *agree* that there are enough activities in Leelanau County to keep and attract young families.
- A significant majority (80%) of respondents *strongly agree* or *agree* that Leelanau County roads are well maintained.
- A majority (68%) of respondents *strongly agree* or *agree* that there is adequate cooperation between governments in Leelanau County.
- A majority (61%) of respondents *strongly agree* or *agree* that Leelanau County should have additional trails and pathways.
- Just over half (51%) of respondents *strongly disagree* or *disagree* that there are enough social and health services to address issues associated with drug addiction in Leelanau County.
- A majority (68%) of respondents *strongly agree* or *agree* that there is an adequate number of quality programs serving seniors throughout Leelanau County.

Table 17. Question 17 for All Respondents

	Strongly Agree		Agree		Disagree		Strongly Disagree		Total
	Percent	#	Percent	#	Percent	#	Percent	#	
The housing opportunities in Leelanau County meet the needs of its residents	5.34%	72	38.03%	513	44.18%	596	12.45%	168	1,349
There are enough commercial services in Leelanau County	10.85%	148	61.36%	837	25.51%	348	2.27%	31	1,364
Leelanau County is adequately serviced by Bay Area Transportation Authority (BATA)	11.19%	140	60.99%	763	23.90%	299	3.92%	49	1,251
There are enough jobs within Leelanau County	8.13%	104	43.98%	563	38.36%	491	9.53%	122	1,280
There are enough activities to keep and attract young families in Leelanau County	19.93%	271	54.26%	738	20.96%	285	4.85%	66	1,360
County Roads are well maintained	21.21%	302	59.06%	841	14.68%	209	5.06%	72	1,424
There is adequate cooperation between local governments	7.30%	86	61.54%	725	26.74%	315	4.41%	52	1,178

There are enough social and health services to address issues associated with drug addiction	6.71%	79	42.14%	496	41.38%	487	9.77%	115	1,177
There is an adequate number and quality of programs serving seniors throughout the county	9.78%	118	58.24%	703	28.50%	344	3.48%	42	1,207

Housing

Question 18. What types of new or additional housing should Leelanau County encourage in the future? Please choose one option for each item that most closely matches your opinion for each item.

Table 18 shows the results for Question 18 for all respondents. Several key results from the questionnaire are listed below.

- About 72% of respondents are *completely in favor* or *in favor* of houses on large lots over 5 acres and 84% of respondents are *completely in favor* or *in favor* of houses on small lots between 1 and 5 acres, whereas only 63% are *completely in favor* or *in favor* of houses on small lots less than one acre.
- A majority (60%) of respondents are *completely in favor* or *in favor* of houses clustered together in subdivisions and neighborhoods.
- Questionnaire respondents are just about split on small houses: 49.3% are *completely in favor* or *in favor* of small houses under 800 sq. ft. clustered together in subdivisions and neighborhoods, whereas 50.6% are *totally opposed or opposed*. However, about 56% are *completely in favor* or *in favor* of small homes under 800 sq. ft. located anywhere in Leelanau County, with 44% *totally opposed or opposed*.
- A significant majority (right around 85%) of respondents are *completely in favor* of or *in favor* of senior housing, affordable housing and loft/flats above street-front retail.
- A significant majority (82%) of respondents are *totally opposed* or *opposed* to mobile home parks.
- A significant majority (77%) of respondents are *completely in favor* of dormitory housing for seasonal workers.
- A significant majority of respondents are *completely in favor* of or *in favor* of year-round apartments (79%) and live/work units (74%), respectively.
- About 59% of respondents are *completely in favor* or *in favor* of townhouses and duplexes.

Table 18. Question 18 for All Respondents

	Completely in Favor		In Favor		Opposed		Totally Opposed		Total
	Percent	#	Percent	#	Percent	#	Percent	#	
Houses on Large Lots (over 5 acres)	26.67%	355	46.28%	616	21.26%	283	5.79%	77	1,331
Houses on Small Lots (between 1 to 5 acres)	20.99%	281	63.11%	845	12.70%	170	3.21%	43	1,339
Houses on Smaller Lots (less than one acre)	18.00%	238	45.92%	607	26.17%	346	9.91%	131	1,322
Houses Clustered Together in Subdivisions and Neighborhoods	17.65%	239	42.61%	577	24.08%	326	15.66%	212	1,354
Small Houses (less than 800 square ft.) Clustered Together in Subdivisions and Neighborhoods	16.16%	218	33.21%	448	27.87%	376	22.76%	307	1,349
Small Houses (less than 800 square ft.) Located Anywhere in the County	15.87%	210	40.06%	530	27.36%	362	16.70%	221	1,323
Townhouses/Duplexes	11.58%	151	47.85%	624	26.84%	350	13.73%	179	1,304
Mobile Home Parks	3.93%	53	13.34%	180	35.29%	476	47.44%	640	1,349
Senior Housing	18.94%	251	66.34%	879	10.64%	141	4.08%	54	1,325
Affordable Housing	40.64%	545	44.89%	602	8.72%	117	5.74%	77	1,341
Dormitory Housing for Seasonal Workers	23.64%	318	53.90%	725	14.72%	198	7.73%	104	1,345
Year-Round Apartments	26.40%	353	52.73%	705	14.81%	198	6.06%	81	1,337
Live/Work Units	21.08%	254	53.53%	645	17.01%	205	8.38%	101	1,205
Lofts/Flats Above Street-Front Retail	30.95%	415	55.33%	742	9.25%	124	4.47%	60	1,341

Transportation

Question 19. How often do you use the following modes of transportation to get from home to work or other activities?

Table 19 shows the results for Question 19 for all respondents. Several key results from the questionnaire are listed below.

- A majority of respondents (90%) use their personal car to get from home to work or other activities all the time.
- A majority of respondents (82%) have never used BATA to get from home to work or other activities. But, of those respondents who have, just 1.7% have used BATA more than 10 days out of the year.
- Just over 30% of the respondents walk to get from home to work or other activities all the time and just over 33% of respondents walk to get from home to work or other activities at least 10 days a year.
- Just over 10% of respondents bike on trails and just over 7% bike on roads to get from home to work or other activities all the time.

Table 19. Question 19 for All Respondents

	All the Time		More Than 10 Days a Year		Less Than 10 Days a Year		Never		Total
	Percent	#	Percent	#	Percent	#	Percent	#	
Personal Car	90.51%	1,288	6.61%	94	0.63%	9	2.25%	32	1,423
Carpool	5.43%	73	16.28%	219	21.86%	294	56.43%	759	1,345
Public Transportation (BATA)	1.64%	22	1.71%	23	13.76%	185	82.89%	1114	1,344
Motorcycle	1.49%	20	3.13%	42	2.98%	40	92.41%	1242	1,344
Bike on Trails	10.28%	141	28.43%	390	25.36%	348	35.93%	493	1,372
Bike on Roads	7.89%	107	22.35%	303	23.08%	313	46.68%	633	1,356
Walk	30.84%	428	33.72%	468	14.99%	208	20.46%	284	1,388

Table 19a. Question 19 for All Respondents, Under 50

	All the Time		More Than 10 Days a Year		Less Than 10 Days a Year		Never		Total
	Percent	#	Percent	#	Percent	#	Percent	#	
Personal Car	87.44%	369	5.69%	24	0.95%	4	5.92%	25	422
Carpool	13.79%	56	30.05%	122	22.17%	90	33.99%	138	406
Public Transportation (BATA)	3.68%	15	2.45%	10	9.80%	40	84.07%	343	408
Motorcycle	3.45%	14	4.19%	17	3.69%	15	88.67%	360	406
Bike on Trails	10.73%	44	28.54%	117	28.54%	117	32.20%	132	410
Bike on Roads	10.02%	41	22.98%	94	25.18%	103	41.81%	171	409
Walk	24.33%	100	33.58%	138	15.82%	65	26.28%	108	411

Table 19b. Question 19 for All Respondents, 51 Years and Older

	All the Time		More Than 10 Days a Year		Less Than 10 Days a Year		Never		Total
	Percent	#	Percent	#	Percent	#	Percent	#	
Personal Car	91.91%	909	6.88%	68	0.51%	5	0.71%	7	989
Carpool	1.51%	14	10.24%	95	21.77%	202	66.49%	617	928
Public Transportation (BATA)	0.65%	6	1.41%	13	15.46%	143	82.49%	763	925
Motorcycle	0.54%	5	2.59%	24	2.70%	25	94.17%	873	927
Bike on Trails	10.09%	96	28.39%	270	24.08%	229	37.43%	356	951
Bike on Roads	6.94%	65	22.01%	206	22.33%	209	48.72%	456	936
Walk	33.54%	324	33.85%	327	14.70%	142	17.91%	173	966

Jobs

Question 20. What are the obstacles to creating new jobs in Leelanau County? Please choose the one option that most closely matches your opinion for each of the following statements.

Table 20 shows the results for Question 20 on the questionnaire for all respondents. Several key results from the questionnaire are listed below.

- A significant majority of respondents (76%) *strongly agree* or *agree* that access to housing to attract workers is an obstacle to creating jobs in Leelanau County.
- A significant majority of respondents (70%) *strongly agree* or *agree* that wages are an obstacle to creating jobs in Leelanau County.
- Nearly half of respondents *strongly agree* or *agree* that access to support programs and funding opportunities (47%) and knowledge of support networks and available assistance (48%) are obstacles to creating jobs in Leelanau County, whereas roughly 23% of respondents were *not sure*.
- Nearly half (47%) of respondents *strongly agree* or *agree* that access to sewer and water infrastructure is an obstacle to creating jobs in Leelanau County, whereas roughly 13% of respondents were *not sure* if sewer and water infrastructure was an obstacle to creating jobs.

- A majority of all respondents (63%) *strongly agree* or *agree* that access to high-speed internet is an obstacle to creating jobs in Leelanau County, whereas 71% of students *strongly agree* or *agree* that access to high-speed internet is an obstacle to creating jobs in Leelanau County.
- A majority of respondents (67%) *strongly agree* or *agree* that access to willing and trained workers is an obstacle to creating jobs in Leelanau County.
- A majority of respondents (66%) *strongly agree* or *agree* that access to a diverse job market to attract two-income families is an obstacle to creating jobs in Leelanau County.

Table 20. Question 20 for All Respondents

	Strongly Agree		Agree		Disagree		Strongly Disagree		Not Sure		Total
	Percent	#	Percent	#	Percent	#	Percent	#	Percent	#	
Access to high-speed internet	34.60%	457	29.14%	385	18.32%	242	4.31%	57	13.63%	180	1,321
Access to sewer and water infrastructure	16.32%	210	30.77%	396	27.35%	352	5.75%	74	19.81%	255	1,287
Access to housing to attract workers	32.67%	430	43.92%	578	11.85%	156	3.50%	46	8.05%	106	1,316
Access to willing and trained workers	21.90%	281	45.67%	586	16.60%	213	3.43%	44	12.39%	159	1,283
Access to support programs and funding opportunities	13.32%	165	34.38%	426	23.41%	290	5.97%	74	22.92%	284	1,239
Knowledge of support networks and available assistance	13.33%	165	35.22%	436	22.86%	283	4.60%	57	23.99%	297	1,238
Access to a diverse job market to attract two-income families	21.69%	275	44.56%	565	16.32%	207	3.79%	48	13.64%	173	1,268
Wages	29.57%	380	40.70%	523	14.24%	183	2.88%	37	12.61%	162	1,285

Recreation

Question 21. Please choose the one option that most closely matches your opinion for each item.

Table 21 shows the results for Question 21 for all respondents. Several key results from the questionnaire are listed below.

- A significant majority of respondents *strongly agree* or *agree* with each of the following statements: parks and recreation opportunities are important to residents of Leelanau County (96%); parks and recreation opportunities are important to visitors of Leelanau County (97%); Sleeping Bear Dunes National Lakeshore is vital to the tourism industry of Leelanau County (95%); there are enough summer outdoor recreational opportunities in Leelanau County (93%); and non-motorized trails have been a positive addition to Leelanau County (92%).
- A significant majority (70%) of respondents *strongly agree* or *agree* that there are enough winter outdoor recreational opportunities in Leelanau County.
- Just over half (56%) of respondents *strongly disagree* or *disagree* that there are enough indoor recreational opportunities in Leelanau County.

- Roughly 60% of respondents *strongly agree* or *agree* that there are enough recreational opportunities for seniors, whereas roughly 39% of respondents *strongly disagree* or *disagree* that there are enough recreational opportunities for seniors.
- Roughly 68% of all respondents *strongly agree* or *agree* that there are enough recreational opportunities for youth, whereas roughly 31% of respondents *strongly disagree* or *disagree* that there are enough recreational opportunities for youth. In addition, roughly 69% of students *strongly agree* or *agree* that there are enough recreational opportunities for youth.

Table 21. Question 21 for All Respondents

	Strongly Agree		Agree		Disagree		Strongly Disagree		Total
	Percent	#	Percent	#	Percent	#	Percent	#	
Parks and recreation opportunities are important to residents of Leelanau County	69.31%	953	27.42%	377	2.91%	40	0.36%	5	1,375
Parks and recreation opportunities are important to visitors to Leelanau County	73.64%	1,014	23.67%	326	2.25%	31	0.44%	6	1,377
Sleeping Bear Dunes National Lakeshore is vital to the tourism industry of Leelanau County	74.04%	1,024	21.69%	300	3.83%	53	0.43%	6	1,383
There are enough winter outdoor recreational opportunities in Leelanau County	22.41%	298	47.59%	633	25.04%	333	4.96%	66	1,330
There are enough summer outdoor recreational opportunities in Leelanau County	47.08%	638	46.86%	635	5.54%	75	0.52%	7	1,355
There are enough indoor recreational opportunities in Leelanau County	9.77%	121	33.76%	418	48.38%	599	8.08%	100	1,238
There are enough recreational opportunities for seniors	11.23%	133	49.16%	582	34.04%	403	5.57%	66	1,184
There are enough recreational opportunities for youth	14.67%	174	53.71%	637	25.80%	306	5.82%	69	1,186
Non-motorized trails (e.g. Leelanau Trail, Sleeping Bear Heritage Trail) have been a positive addition to Leelanau County	62.62%	851	29.80%	405	5.30%	72	2.28%	31	1,359
Leelanau County should support building additional non-motorized trails	41.44%	540	34.15%	445	17.42%	227	6.98%	91	1,303
There is enough land available for hunting	31.42%	373	53.16%	631	10.95%	130	4.47%	53	1,187
There are enough public access sites to inland lakes	22.83%	290	54.57%	693	16.85%	214	5.75%	73	1,270
There is enough access to Lake Michigan	26.19%	346	53.22%	703	15.97%	211	4.62%	61	1,321
Information about public recreation opportunities is easy to find	22.43%	290	53.67%	694	20.42%	264	3.48%	45	1,293

APPENDIX D

U.S. Fish and Wildlife Service Information for Planning and Assistance Review and Michigan Natural Features Inventory Review

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

In Reply Refer To: 02/09/2026 16:24:54 UTC
Project Code: 2026-0047056
Project Name: M-22 and McKeese Road Improvement

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Official Species List
The attached species list identifies any Federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement section 7 of the Endangered Species Act), the accuracy of this species list should be verified after 90 days. You may verify the list by visiting the IPaC website (https://ipac.ecosphere.fws.gov/) at regular intervals during project planning and implementation. To update an Official Species List in IPaC: from the My Projects page, find the project, expand the row, and click Project Home. In the What's Next box on the Project Home page, there is a Request Updated List button to update your species list. Be sure to select an "official" species list for all projects.

Consultation requirements and next steps
Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize Federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-Federal representative) must consult with the Fish and Wildlife Service if they determine their project may affect listed species or critical habitat.

There are two approaches to evaluating the effects of a project on listed species.

Approach 1. Use the All-species Michigan determination key in IPaC. This tool can assist you in making determinations for listed species for some projects. In many cases, the determination key

will provide an automated concurrence that completes all or significant parts of the consultation process. Therefore, we strongly recommend screening your project with the **All-Species Michigan Determination Key (Dkey)**. For additional information on using IPaC and available Determination Keys, visit https://www.fws.gov/media/mifo-ipac-instructions (and click on the attachment), or for a video overview, please visit: https://www.youtube.com/watch?v=FfcerNCiL0I. Please carefully review your Dkey output letter to determine whether additional steps are needed to complete the consultation process.

Approach 2. Evaluate the effects to listed species on your own without utilizing a determination key. Once you obtain your official species list, you are not required to continue in IPaC, although in most cases using a determination key should expedite your review. If the project is a Federal action, you should review our section 7 step-by-step instructions before making your determinations: https://www.fws.gov/office/midwest-region-headquarters/midwest-section-7-technical-assistance. If you evaluate the details of your project and conclude "no effect," document your findings, and your listed species review is complete; you do not need our concurrence on "no effect" determinations. If you cannot conclude "no effect," you should coordinate/consult with the Michigan Ecological Services Field Office. The preferred method for submitting your project description and effects determination (if concurrence is needed) is electronically to EastLansing@fws.gov. Please include a copy of this official species list with your request.

For all **wind energy projects**, please contact this field office directly for assistance, even if no Federally listed plants, animals or critical habitat are present within your proposed project area or may be affected by your proposed project.

Migratory Birds
Please see the "Migratory Birds" section below for important information regarding incorporating migratory birds into your project planning. Our Migratory Bird Program has developed recommendations, best practices, and other tools to help project proponents voluntarily reduce impacts to birds and their habitats. The Bald and Golden Eagle Protection Act prohibits the take and disturbance of eagles without a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at https://www.fws.gov/program/eagle-management to help you avoid impacting eagles or determine if a permit may be necessary.

Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your consideration of threatened and endangered species during your project

planning. Please include a copy of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

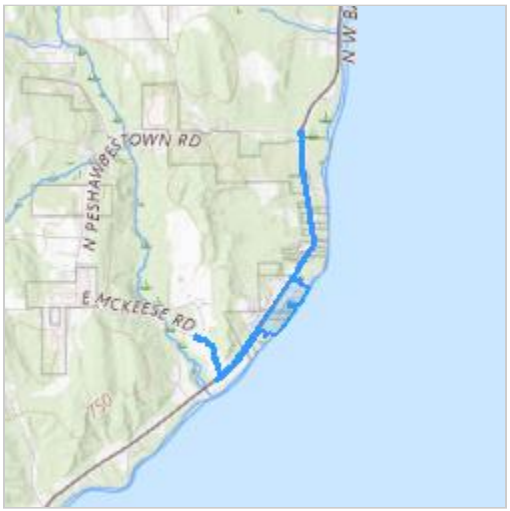
This species list is provided by:

Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
(517) 351-2555

PROJECT SUMMARY

Project Code: 2026-0047056
Project Name: M-22 and McKeese Road Improvement
Project Type: Road/Hwy - Maintenance/Modification
Project Description: Road improvement
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@45.02275005,-85.60185446407351,14z



Counties: Leelanau County, Michigan

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat *Myotis sodalis*	Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/5949

BIRDS

NAME	STATUS
Piping Plover *Charadrius melodus*	Endangered

Population: [Great Lakes watershed DPS] - Great Lakes, watershed in States of IL, IN, MI, MN, NY, OH, PA, and WI and Canada (Ont.)
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/6039

Rufa Red Knot *Calidris canutus rufa*	Threatened

There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.
This species only needs to be considered under the following conditions:

- Only actions that occur along coastal areas during the Red Knot migratory window of MAY 1 - SEPTEMBER 30.

Species profile: https://ecos.fws.gov/ecp/species/1864

REPTILES

NAME	STATUS
Eastern Massasauga (=rattlesnake) *Sistrurus catenatus*	Threatened

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:

- For all Projects: Project is within EMR Range

Species profile: https://ecos.fws.gov/ecp/species/2202
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/3WVZBAUHVBF5PFHBYYCWROWYJQ/documents/generated/5280.pdf

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Proposed Threatened

There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/9743

FLOWERING PLANTS

NAME	STATUS
Pitcher's Thistle *Cirsium pitcheri*	Threatened

No critical habitat has been designated for this species.

NAME STATUS

Species profile: https://ecos.fws.gov/ecp/species/8153

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

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1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/ activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete
If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

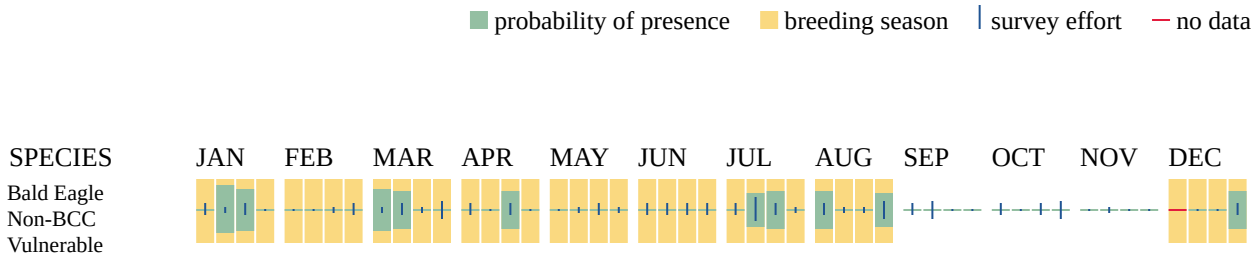
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31

NAME	BREEDING SEASON
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9454	Breeds May 20 to Jul 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Common Tern *Sterna hirundo* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/4963	Breeds May 1 to Aug 31
Long-eared Owl *asio otus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15
Veery *Catharus fuscescens fuscescens* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11987	Breeds May 15 to Jul 15
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds

- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPAC USER CONTACT INFORMATION

Agency: Grand Traverse Band of Ottawa & Chippewa Indians, Michigan
Name: Kaitie Wilms
Address: 200 W 22nd Street, Suite 220
City: Lombard
State: IL
Zip: 29841
Email kaitie.wilms@swca.com
Phone: 8436930711

MICHIGAN STATE UNIVERSITY | Extension

Kaitie Wilms
SWCA Environmental Consultants
200 West 22nd Street
Suite 220
Lombard, IL 60148

March 11, 2026

Re: Rare Species Review #5802 – M-22 to McKeese Road

Hello:

The location for the proposed project was checked against known localities for rare species and unique natural features, which are recorded in the Michigan Natural Features Inventory (MNFI) natural heritage database. This continuously updated database is a comprehensive source of existing data on Michigan's endangered, threatened, or otherwise significant plant and animal species, natural plant communities, and other natural features. Records in the database indicate that a qualified observer has documented the presence of special natural features. The absence of records in the database for a particular site may mean that the site has not been surveyed. The only way to obtain a definitive statement on the status of natural features is to have a competent biologist perform a complete field survey.

Under Act 451 of 1994, the Natural Resources and Environmental Protection Act, Part 365, Endangered Species Protection, "a person shall not take, possess, transport, …fish, plants, and wildlife indigenous to the state and determined to be endangered or threatened," unless first receiving an Endangered Species Permit from the Michigan Department of Natural Resources (MDNR), Wildlife Division. Responsibility to protect endangered and threatened species is not limited to the lists below. Other species may be present that have not been recorded in the database.

Although several at-risk species and/or natural communities have been documented within 1.5 miles of the project location it is unlikely that adverse impacts will occur. This response reflects a desktop review of the database and MNFI cannot fully evaluate this project without visiting the area. MNFI offers several levels of Rare Species Reviews, including field surveys which I would be happy to discuss with you.

Sincerely,

Nicolette Sexton

Nicolette Sexton
Environmental Review Assistant
Michigan Natural Features Inventory

MSU EXTENSION

Michigan Natural Features Inventory
Deborah A. Stabenow Building, 1st Floor
525 W. Allegan St.
Lansing, MI 48933

(517) 284-6200
Fax (517) 373-9566

mnfi.anr.msu.edu

Comments for Rare Species Review #5802

It is important to note that it is the applicant's responsibility to comply with both state and federal threatened and endangered species legislation. Therefore, if a state listed species occurs at a project site, and you think you need an endangered species permit, please contact Amy Bleisch at DNR-Wildlife Division, DNR-StateTEPermit@michigan.gov and review details on the MDNR's Threatened/Endangered Species resource page. If a federally listed species is involved and, you think a permit is needed, please contact Jessica Pruden, U.S. Fish and Wildlife Service, East Lansing office, 517-351-8316, or Jessica_Pruden@fws.gov.

NOTE: Special concern species and natural communities are not protected under endangered species legislation, but efforts should be taken to minimize any or all impacts. Please consult MNFI's Rare Species pages for additional information on Michigan's rare plants and animals.

Table 1: Occurrences of Threatened & Endangered Species within 1.5 miles of Project Site

Element Category	Scientific Name	Common Name	Federal Status	State Status	G Rank	S Rank	EO Rank	First Observed Date	Last Observed Date
Animal	*Gavia immer*	Common loon		T	G5	S3	H	1989	1989-07
Animal	*Myotis lucifugus*	Little brown bat		T	G3G4	S1	H	1921-09-04	1921-09-15

Comments for Table 1

The above EO's are historical, no concerns.

Table 2: Occurrences of Special Concern Species and Natural Communities within 1.5 miles of Project Site

Element Category	Scientific Name	Common Name	Federal Status	State Status	G Rank	S Rank	EO Rank	First Observed Date	Last Observed Date
Animal	*Bombus terricola*	Yellow banded bumble bee		SC	G3G4	S2S3	E	2016-07-12	2016-07-12
Animal	*Haliaeetus leucocephalus*	Bald eagle		SC	G5	S4	E	2005-03-29	2019
Community	*Hardwood-Conifer Swamp*				G4	S3	BC	2015-08-27	2015-08-27
Plant	*Linum sulcatum*	Furrowed flax		SC	G5	S2S3	H	1953	1953-08-16

Comments for Table 2

The above EO's are historical or far removed from the project area, no concerns.

Natural Communities

Be aware that a hardwood-conifer swamp natural community is located near the project site. While not legally protected, natural communities harbor rare species that may not be documented in the database. For more information see:
Hardwood-conifer swamp – Michigan Natural Features Inventory (msu.edu)

Codes to accompany table

State Protection Status Code Definitions
E = Endangered
T = Threatened
SC = Special concern

Federal Protection Status Code Definitions
LE = listed endangered
LT = listed threatened
LELT = partly listed endangered and partly listed threatened
PDL = proposed delist
E(S/A) = endangered based on similarities/appearance
PS = partial status (federally listed in only part of its range)
C = species being considered for federal status

Global Heritage Status Rank Definitions (G RANK)
The priority assigned by NatureServe's national office for data collection and protection based upon the element's status throughout its entire world-wide range. Criteria not based only on number of occurrences; other critical factors also apply. Note that ranks are frequently combined.
G1 = critically imperiled globally because of extreme rarity (5 or fewer occurrences range-wide or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.
G2 = imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.
G3 = Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g. a single western state, a physiographic region in the East) or because of other factor(s) making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 to 100.
G4 = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.
G5 = Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
Q = Taxonomy uncertain

State Heritage Status Rank Definitions (S RANK)
The priority assigned by the Michigan Natural Features Inventory for data collection and protection based upon the element's status within the state. Criteria not based only on number of occurrences; other critical factors also apply. Note that ranks are frequently combined.
S1 = Critically imperiled in the state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation in the state.
S2 = Imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from the state.
S3 = Rare or uncommon in state (on the order of 21 to 100 occurrences). S4 = apparently secure in state, with many occurrences.
S5 = demonstrably secure in state and essentially ineradicable under present conditions.
SX = apparently extirpated from state.

EO Rank Codes

Element Occurrence (EO) ranks refer to the viability or ecological integrity of the occurrence; they provide an assessment of the likelihood that if current conditions prevail the EO will persist for a defined period of time, typically 20-100 years.

A - Excellent estimated viability/ecological integrity
A? - Possibly excellent estimated viability/ecological integrity
AB - Excellent or good estimated viability/ecological integrity
AC - Excellent, good, or fair estimated viability/ecological integrity
B - Good estimated viability/ecological integrity
B? - Possibly good estimated viability/ecological integrity
BC - Good or fair estimated viability/ecological integrity
BD - Good, fair, or poor estimated viability/ecological integrity
C - Fair estimated viability/ecological integrity
C? - Possibly fair estimated viability/ecological integrity
CD - Fair or poor estimated viability/ecological integrity
D - Poor estimated viability/ecological integrity
D? - Possibly poor estimated viability/ecological integrity
E - Verified extant (viability/ecological integrity not assessed)
F - Failed to find
F? - Possibly failed to find
H - Historical
H? - Possibly historical
X - Extirpated
X? - Possibly extirpated
U - Unrankable
NR - Not ranked

Section 7 Comments for Rare Species Review #5802
M-22 to McKeese Road

Kaitie Wilms
SWCA Environmental Consultants
200 West 22nd Street
Suite 220
Lombard, IL 60148

March 11, 2026

For projects involving Federal funding or a federal agency authorization

The following information is provided to assist you with Section 7 compliance of the Federal Endangered Species Act (ESA). The ESA directs all Federal agencies "to work to conserve endangered and threatened species. Section 7 of the ESA, called "Interagency Cooperation," is the means by which Federal agencies ensure their actions, including those they authorize or fund, do not jeopardize the existence of any listed species."

The project falls within the range of the following federally listed/proposed/candidate species which have been identified by the U.S. Fish and Wildlife Service (USFWS) to occur in Leelanau County, Michigan:

Federally Endangered

Piping plover – there **does not appear** to be suitable habitat within 1.5 miles of the project site. In the Great Lakes region, the federal and state endangered piping plover *(Charadrius melodus)* prefers to nest and forage on sparse or non-vegetated sand-pebble beaches with less than 5% vegetative cover. Nests are simple depressions in the sand are generally placed in level areas between the water's edge and the first dune. Associated bodies of water and interdunal wetlands enhance these areas by increasing food availability. Optimal foraging areas are especially crucial along Lake Superior, where shoreline and benthic invertebrate communities are known to be naturally sparse. While feeding, open shoreline is preferred to vegetated beach areas. Piping plovers begin arriving in mid- to late-April. The nesting season is under way by mid-May and lasts until mid-August.

Management and Conservation - this species is declining throughout the Midwest due to habitat destruction and disturbance. The nests are simple depressions in the sand and are difficult to see. People walking on the beach may inadvertently destroy nests. Dogs on the beach can be especially dangerous for chicks and adults. Piping plovers are protected under the Federal Endangered Species Act and are very sensitive to human disturbance. Please avoid activity along the shoreline in this compartment between May and September.

Indiana bat – there **does appear** to be suitable habitat within 1.5 miles of the project. Indiana bats (*Myotis sodalis*) are found only in the eastern United States and are typically confined to the southern three tiers of counties in Michigan. Indiana bats that summer in Michigan winter in caves in Indiana and Kentucky. This species forms colonies and forages in riparian and mature floodplain habitats. Nursery roost sites are usually located under loose bark or in hollows of trees near riparian habitat. Indiana bats typically avoid houses or other artificial structures and typically roost underneath loose bark of dead elm, maple and ash trees. Other dead trees used include oak, hickory and cottonwood. Foraging typically occurs over slow-moving, wooded streams and rivers as well as in the canopy of mature trees. Movements may also extend into the outer edge of the floodplain and to nearby solitary trees. A summer colony's foraging area usually encompasses a stretch of stream over a half-mile in length. Upland areas isolated from floodplains and non-wooded streams are generally avoided.

Management and Conservation: Every March, the USFWS publishes survey guidelines to assist project proponents (both Federal and non-Federal) with conservation planning for Federally listed bats in Michigan. We strongly encourage project managers and their designated representatives to use the U.S. Fish and Wildlife Service (USFWS) online planning tool Information for Planning and Consultation (IPaC) to evaluate potential effects of proposed activities on listed bats

and other Federally listed species in Michigan. Projects that complete consultation or coordination through IPaC automatically adhere to the recommendations provided in these guidelines and are not required to implement any additional conservation measures for listed bats.

Michigan monkey-flower – there **does not appear** to be suitable habitat within 1.5 miles of the project site. The federally and state endangered Michigan monkey-flower *(Mimulus glabratus* var. *michiganensis)* favors alkaline (calcareous) habitats, growing along marly springs, in cold streams through cedar swamps, on calcareous shores, and in associated ditches. Michigan monkey flower, flowers from mid-June through July. This is the only plant entirely endemic to Michigan.

Management and Conservation: this species requires maintenance of a cold-water source. Prevent disruptions to hydrology, including flow, oxygenation, turbidity.

Northern long-eared bat – Northern long-eared bat (*M. septentrionalis*) numbers in the northeast US have declined up to 99 percent. Loss or degradation of summer habitat, wind turbines, disturbance to hibernacula, predation, and pesticides have contributed to declines in Northern long-eared bat populations. However, no other threat has been as severe to the decline as White-nose Syndrome (WNS). WNS is a fungus that thrives in the cold, damp conditions in caves and mines where bats hibernate. The disease is believed to disrupt the hibernation cycle by causing bats to repeatedly awake thereby depleting vital energy reserves. This species was federally listed in May 2015 primarily due to the threat from WNS.

Although no known hibernacula or roost trees have been documented within 1.5 miles of the project site, this activity occurs within the designated WNS zone (i.e., within 150 miles of positive counties/districts impacted by WNS. Also, there **does appear** to be suitable habitat within 1.5 miles of the project.

Also called northern bat or northern myotis, this bat is distinguished from other *Myotis* species by its long ears. In Michigan, northern long-eared bats hibernate in abandoned mines and caves in the Upper Peninsula; they also commonly hibernate in the Tippy Dam spillway in Manistee County. This species is a regional migrant with migratory distance largely determined by locations of suitable hibernacula sites.

Northern long-eared bats typically roost and forage in forested areas. During the summer, these bats roost singly or in colonies underneath bark, in cavities or in crevices of both living and dead trees. Roost trees are selected based on the suitability to retain bark or provide cavities or crevices. Common roost trees in southern Lower Michigan include species of ash, elm and maple. Foraging occurs primarily in areas along woodland edges, woodland clearings and over small woodland ponds. Moths, beetles, and small flies are common food items. Like all temperate bats this species typically produces only 1-2 young per year.

Management and Conservation: Every March, the USFWS publishes survey guidelines to assist project proponents (both Federal and non-Federal) with conservation planning for Federally listed bats in Michigan. We strongly encourage project managers and their designated representatives to use the U.S. Fish and Wildlife Service (USFWS) online planning tool Information for Planning and Consultation (IPaC) to evaluate potential effects of proposed activities on listed bats and other Federally listed species in Michigan. Projects that complete consultation or coordination through IPaC automatically adhere to the recommendations provided in these guidelines and are not required to implement any additional conservation measures for listed bats.

Federally Threatened

Rufa red knot – there **does appear** to be suitable habitat within 1.5 miles of the project site. The rufa red knot (*Calidris canutus rufa*) is one of the longest-distance migrants in the animal kingdom, flying some 18,000 miles annually between its breeding grounds in the Canadian Arctic to the wintering grounds at the southern-most tip of South America. Primarily occurring along the Atlantic and Gulf coasts, small groups of this shorebird regularly use the interior of the United States such as the Great Lakes during the annual migration. The Great Lakes shorelines provide vital stopover habitat for resting and refueling during their long annual journey.

The largest concentration of rufa red knots is found in May in Delaware Bay, where the birds stop to gorge on the eggs of spawning horseshoe crabs; a spectacle attracting thousands of birdwatchers to the area. In just a few days, the birds nearly double their weight to prepare for the final leg of their long journey to the Arctic. This species may be especially vulnerable to climate change which affects coastal habitats due to rising sea levels.

Management and Conservation: applies to actions that occur along coastal areas during the Red Knot migratory window of MAY 1 - SEPTEMBER 30.

Pitcher's thistle – there **does not appear** to be suitable habitat within 1.5 miles of the project site. The federal and state threatened Pitcher's thistle *(Cirsium pitcheri)* grows on open sand dunes and occasionally on lag gravel associated with dunes. All of its habitats are along the Great Lakes shores, or in very close proximity. This monocarpic (once-flowering) plant produces a rosette that will mature to flowering in 2-8 years, after which the plant dies. Seeds germinate in June, and most seedlings (rosettes) appear within 1-3 meters of parent plants. The taproot of this thistle, which can reach 2 m in length, enhances its ability to survive the often-desiccating conditions of its dune habitat. Pitcher's thistle blooms from approximately late-June to early September.

Management and Conservation - Pitcher's thistle can be locally extirpated by destruction or major disturbance of its habitat (e.g. by shoreline development, vehicular or ORV traffic, heavy foot traffic and/or intensive recreation).

Eastern massasauga rattlesnake (EMR) – there **does appear** to be suitable habitat within 1.5 miles of the project. The project **falls outside Tier 1/Tier 2 EMR habitat** as designated by the U.S. Fish & Wildlife Service (USFWS). The federally threatened and state special concern Eastern massasauga rattlesnake *(Sistrurus catenatus)* is Michigan's only venomous snake and is found in a variety of wetland habitats including bogs, fens, shrub swamps, wet meadows, marshes, moist grasslands, wet prairies, and floodplain forests. Eastern massasaugas occur throughout the Lower Peninsula but are not found in the Upper Peninsula. Populations in southern Michigan are typically associated with open wetlands, particularly prairie fens, while those in northern Michigan are better known from lowland coniferous forests, such as cedar swamps. These snakes normally overwinter in crayfish or small mammal burrows often close to the groundwater level and emerge in spring as water levels rise. During late spring, these snakes move into adjacent uplands they spend the warmer months foraging in shrubby fields and grasslands in search of mice and voles, their favorite food.

Often described as "shy and sluggish", these snakes avoid human confrontation and are not prone to strike, preferring to leave the area when they are threatened. However, like any wild animal, they will protect themselves from anything they see as a potential predator. Their short fangs can easily puncture skin and they do possess potent venom. Like many snakes, the first human reaction may be to kill the snake, but it is important to remember that all snakes play vital roles in the ecosystem. Some may eat harmful insects. Others like the massasauga consider rodents a delicacy and help control their population. Snakes are also a part of a larger food web and can provide food to eagles, herons, and several mammals.

Management and Conservation: protection of extant populations and suitable wetland and adjacent upland habitats is crucial for successful conservation of the Eastern Massasauga. Maintaining or restoring open habitat conditions is critical for this species. Fragmentation of suitable wetland-upland habitat complexes by roads or other barriers should be avoided or minimized. Land management practices such as timber harvesting, mowing, disking or prescribed burning should be conducted in such a manner so as to minimize the potential for adverse impacts to massasaugas (e.g., conducting management activities during the snakes' inactive season (November through early March) or on days when snakes are less likely to be active on the surface during the active season). Protecting suitable hibernation sites also is critical.

Dwarf lake iris– there **does appear** to be suitable habitat within 1.5 miles of the project site. Dwarf lake iris (*Iris lacustris*) usually occurs near Great Lakes shorelines on sand or in thin soils over calcareous gravel or bedrock. It tolerates full sun to nearly complete shade, but appears to flower best in semi-open edge or ecotonal habitats, typically amongst scattered trees or on shoreline forest margins where is occurs with northern white cedar (*Thuja occidentalis*) and balsam fir (*Abies balsamea*). Dwarf lake iris is almost invariably associated with northern white cedar, though spruce

(principally white spruce, *Picea glauca*), balsam fir, and trembling aspen *(Populus tremuloides)* may also be present in the overstory. This species has demonstrated that under certain conditions it can readily spread into artificially cleared areas with dryish, calcareous substrates, where it may clone aggressively. This species usually flowers from mid-May to early June, depending on site exposure and annual weather variations. Each flower remains open approximately three days.

Management and Conservation: This species requires protection of habitat and natural disturbance and hydrological regimes. It is sensitive to mechanical disturbance or removal of its substrate, but readily forms clones from rhizomes and may benefit from light natural disturbance.

Houghton's goldenrod– there **does appear** to be suitable habitat within 1.5 miles of the project site. Occurring primarily along the northern shores of Lake Huron and Lake Michigan, Houghton's goldenrod (*Solidago houghtonii*) is restricted to calcareous beach sands, rocky and cobbly shores, beach flats, and shallow, trough-like interdunal wetlands paralleling shoreline areas. It also occurs on seasonally wet limestone pavement, its more typical habitat in the eastern portion of its range, particularly in Ontario. In the Crawford County locality, Houghton's goldenrod occurs in an unusual northern wet prairie habitat within the jack pine barrens. There it occupies seasonally inundated areas and old interdunal depressions in an outwash landscape, where it occurs with such species as jack pine, big bluestem, lobelia, Indian paintbrush, etc. Flowering occurs primarily in August and early September, but some plants may flower as late as October.

Management and Conservation: This species requires protection of habitat and maintenance of natural dune processes (e.g. shoreline fluctuation, erosion, sand deposition, wind, water level fluctuation, sand movement) that create the necessary microsites. Protect habitat from residential development. Prevent or remove invasive species. Vulnerable to ORV damage and also excessive foot traffic.

USFWS Section 7 Consultation Technical Assistance can be found at:

https://www.fws.gov/service/esa-section-7-consultation

The website offers step-by-step instructions to guide you through the Section 7 consultation process with prepared templates for documenting "no effect" as well as requesting concurrence on "may affect, but not likely to adversely affect" determinations.

Please let us know if you have questions.

Nicolette Sexton
Environmental Review Assistant
Michigan Natural Features Inventory

APPENDIX E

Historical, Cultural, Religious, and Archeological Consultation Information [Separate]