



BARAGA TWP.

MASTER PLAN

Created by:
Baraga Township
325 Lyons Street
Baraga, MI 49908

With assistance from:
OHM Advisors
424 Hancock Street
Hancock, MI 49930

2017

ACKNOWLEDGMENTS

Developed by Baraga Township, Michigan with assistance from OHM Advisors and Land Information Access Association. Document prepared by OHM Advisors.

This project is part of the Michigan Association of Planning's Master Planning for Sustainability and Resiliency grant program. Financial assistance for this project was provided, in part, by the Michigan Coastal Zone Management Program, Office of the Great Lakes, Department of Environmental Quality, under the National Coastal Zone Management Program, through a grant from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce.



PLANNING COMMISSION

DALE PARKILA, CHAIR
GLENN JUNTUNEN
NICHOLAS LINDEMANN
NICK LOZIER
JEFF SPRENKLE

TABLE OF CONTENTS

01

INTRODUCTION

- 1.1 The Need for Sustainability & Resiliency Planning
- 1.2 How To Use this Plan

02

CREATING THE PLAN

- 2.1 Overview
- 2.2 Approach
- 2.3 Research
- 2.4 Community Engagement

03

THE CONTEXT

- 3.1 Baraga Township
- 3.2 Environmental Trends
- 3.3 Social Trends
- 3.4 Economic Trends

04

GOALS, OBJECTIVES & STRATEGIES

05

FUTURE LAND USE

- 5.1 Future Land Use Categories & Map

06

PUTTING THE PLAN INTO ACTION

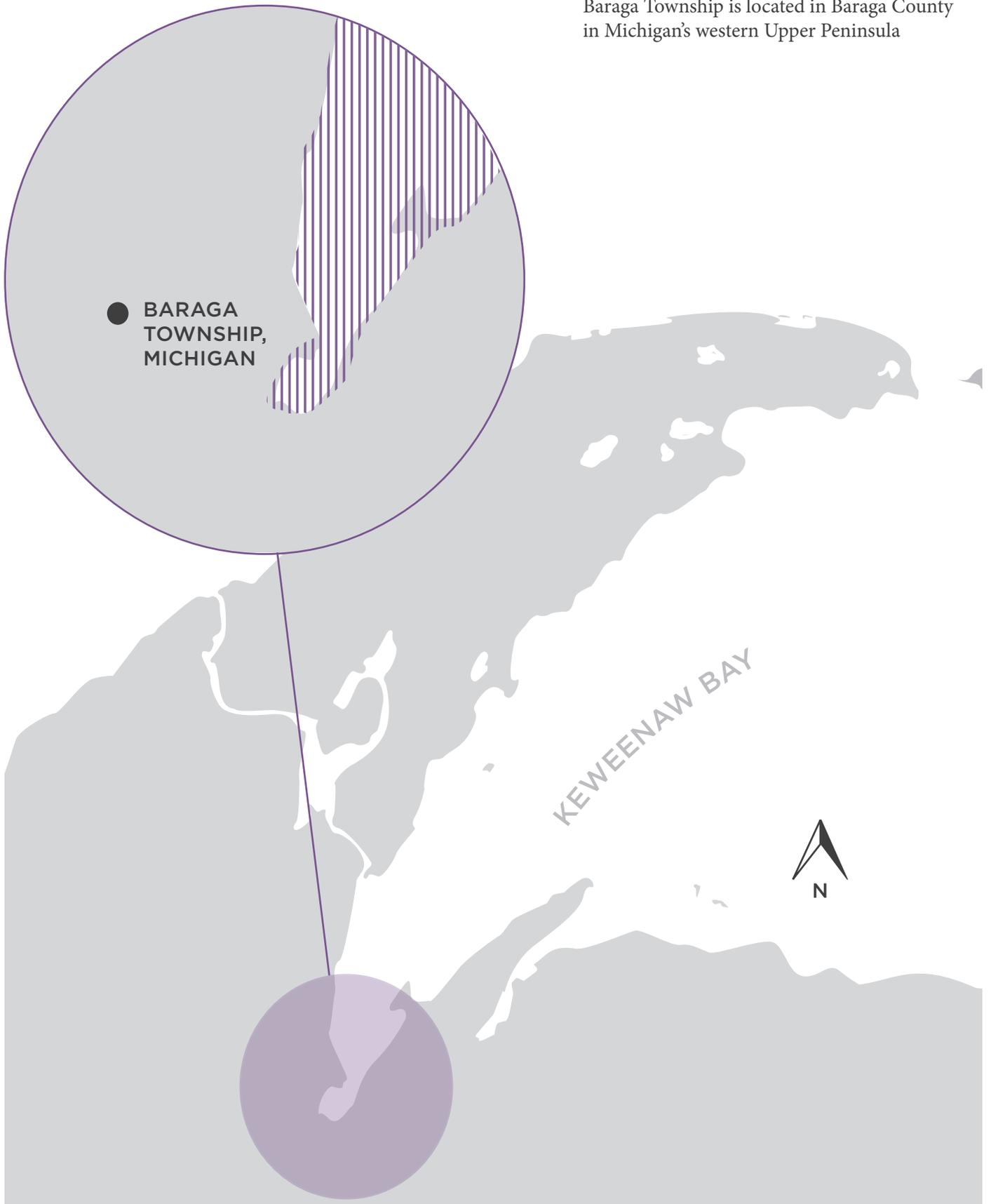
- 6.1 Capital Improvement Plan
- 6.2 Implementation Matrix

APPENDIX A: RESILIENCY REPORT

APPENDIX B: SURVEY REPORT

BARAGA TOWNSHIP

Baraga Township is located in Baraga County in Michigan's western Upper Peninsula





FORWARD

Baraga Township finds high value in planning for resiliency and sustainability and is committed to the protection of the area's character, which is reflected in its natural features. The Keweenaw Bay, rolling hillsides, lakes, streams, woodlands, and open spaces comprise the Township's beautiful and unique landscape. In the past, major alteration and destruction of these natural features produced far reaching impacts and the Township would like to prevent that going forward. Additionally, the Township wishes to be fully prepared for the future and position itself to thrive regardless of what is to come. The development of this Plan represents a critical step towards achieving this.



01

INTRODUCTION

This chapter provides an overview of sustainability and resiliency planning and guidance on how to use this Plan.



BARAGA TWP.
MASTER PLAN

1.1 THE NEED FOR SUSTAINABILITY & RESILIENCY PLANNING

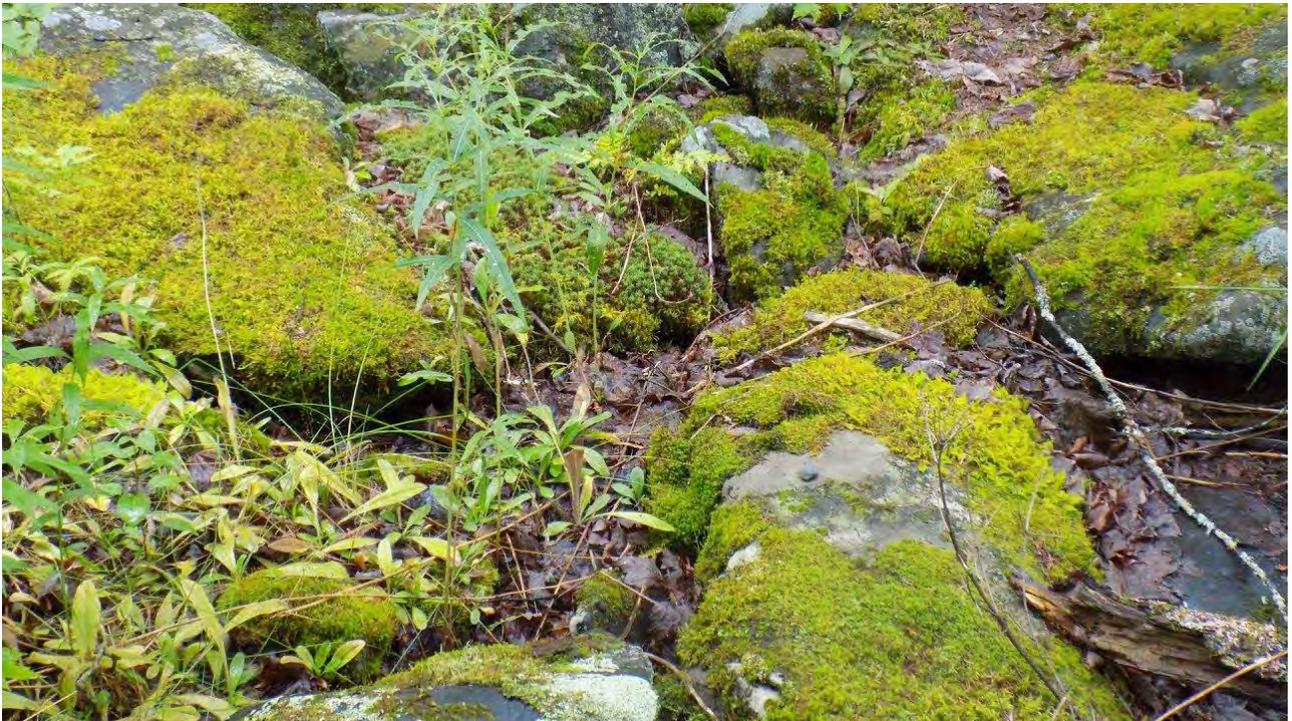
Today's quickly changing social, environmental, and economic conditions require thoughtful and impactful responses from local governments to achieve a more sustainable future. Communities include subsystems of infrastructure and services that, when working, create a functioning community ecosystem, but when compromised, threaten the community's ability to thrive. Specifically, shifts in climate, economics, and technology are quickly occurring and a local government that does nothing or tries to apply old answers to the challenges ahead will not do well. To be successful, local governments need to be proactive in understanding what is likely to come and carry out plans that meet the anticipated challenges. Some of the main challenges include:

1. **Climate:** Temperatures are rising, snow and rainfall patterns are shifting, and more extreme climate events like heavy rainstorms and record high temperatures are already happening. This is causing unprecedented levels of flooding, fires, and other issues that many communities are not

prepared to handle.

2. **Economics:** Funding opportunities for local governments are becoming more limited and competitive. Meanwhile infrastructure systems in many communities has aged to the point of critically needing replacement. Creative financing and better coordinated and careful budgeting is therefore more important than ever.
3. **Technology:** Technological advances will offer many opportunities to increase efficiency and improve quality of life. However, because technological advances are happening so quickly, many of the changes will be disruptive and confusing unless municipalities get ahead of the technology, embrace it, and use it to their advantage.

Because of these changes, the practice of planning is advancing toward sustainability and resiliency planning as a necessary approach. This Master Plan is one of the first in Michigan to be developed with sustainability and resiliency at the forefront, and while many of the expected challenges of the future are daunting, this plan helps to ensure that Baraga Township's best years are still ahead and holds the potential for bringing new levels of ingenuity and vibrancy to the Township.



PLANNING FOR THE 21ST CENTURY – SUSTAINABILITY & RESILIENCY MASTER PLANS DEFINED

In comparison, to the urban renewal style plans of the 1960’s and 1970’s and the growth management style plans of 1980’s and 1990’s, sustainability and resiliency master plans are more holistic and bring together concepts like placemaking, which elevates economic development and overall quality of life, with environmental stewardship, which calls for the responsible use and protection of the natural environment. The overarching aim of sustainability and resiliency plans are to institutionalize best practices in sustainable operations. When undergoing a sustainability and resiliency master plan process, communities proactively gain an understanding what is likely to come in the social, economic, and environmental realms and develop a balanced strategy to meet both existing and anticipated challenges in these areas.

Specific to this planning effort, the legal basis for developing a master plan in Michigan is paired with the intention of the Planning for Resiliency and Sustainability grant, which supported the development of this Plan. The legal basis is the Michigan Planning Enabling Act (Act 33 of 2008), which outlines the requirements for a Master Plan from which zoning is directed. The grant is intended

to increase Michigan’s coastal communities’ capacity to anticipate, prepare for, and avoid or mitigate the impacts of severe weather events and trends, which can include hazards to property and public health and safety caused by shoreline erosion, flooding, ice jams, fluctuating water levels, or deteriorating surface water quality. This Plan is therefore intended to serve as:

1. A general statement of the community’s goals and policies that provide a single, comprehensive view of the community’s desire for the future.
2. The statutory basis upon which zoning decisions are made. The Michigan Zoning Enabling Act (Act 110 of 2006) requires that the zoning ordinance be in accordance with the Plan.
3. A document that helps guide decisions toward public improvements, community programs, and private developments that help support sustainability.
4. An educational tool that gives citizens, property owners, developers, and adjacent communities an understanding of the existing and likely future conditions of Baraga Township and a clear indication of the community’s desired direction in response to this understanding.
5. A tool to advance Baraga Township’s desired quality of life



Figure 1.1 Planning Timeline

1.2 HOW TO USE THIS PLAN

This Plan is intended to be used on a daily basis as decisions are made concerning new development, redevelopment, capital improvements, economic incentives, and other matters involving the Township. The following is a summary of how decisions and processes should align with the Plan.

Annual Work Programs and Budgets

Individual Township departments and administrators should be cognizant of the contents of the Plan when preparing annual work programs and budgets.

Development Approvals

Administrative and legislative approvals of development proposals, including rezoning, should be a central means of implementing the Plan. Decisions made by elected and appointed officials should reference relevant Plan goals, objectives, and strategies. Township plans and codes should also reflect and support the vision and recommendations in the Plan.

Capital Improvement Plan

The Township's Capital Improvement Plan (CIP) should be prepared consistent with the Plan's recommendations. New improvements that are not reflected in the Plan, which could dramatically impact the Plan's goals, objectives, and strategies, should necessitate an amendment to the Plan.

Economic Incentives

Economic development incentives proposed by the Township should be reviewed to ensure consistency with the goals, objectives, and strategies of the Plan.

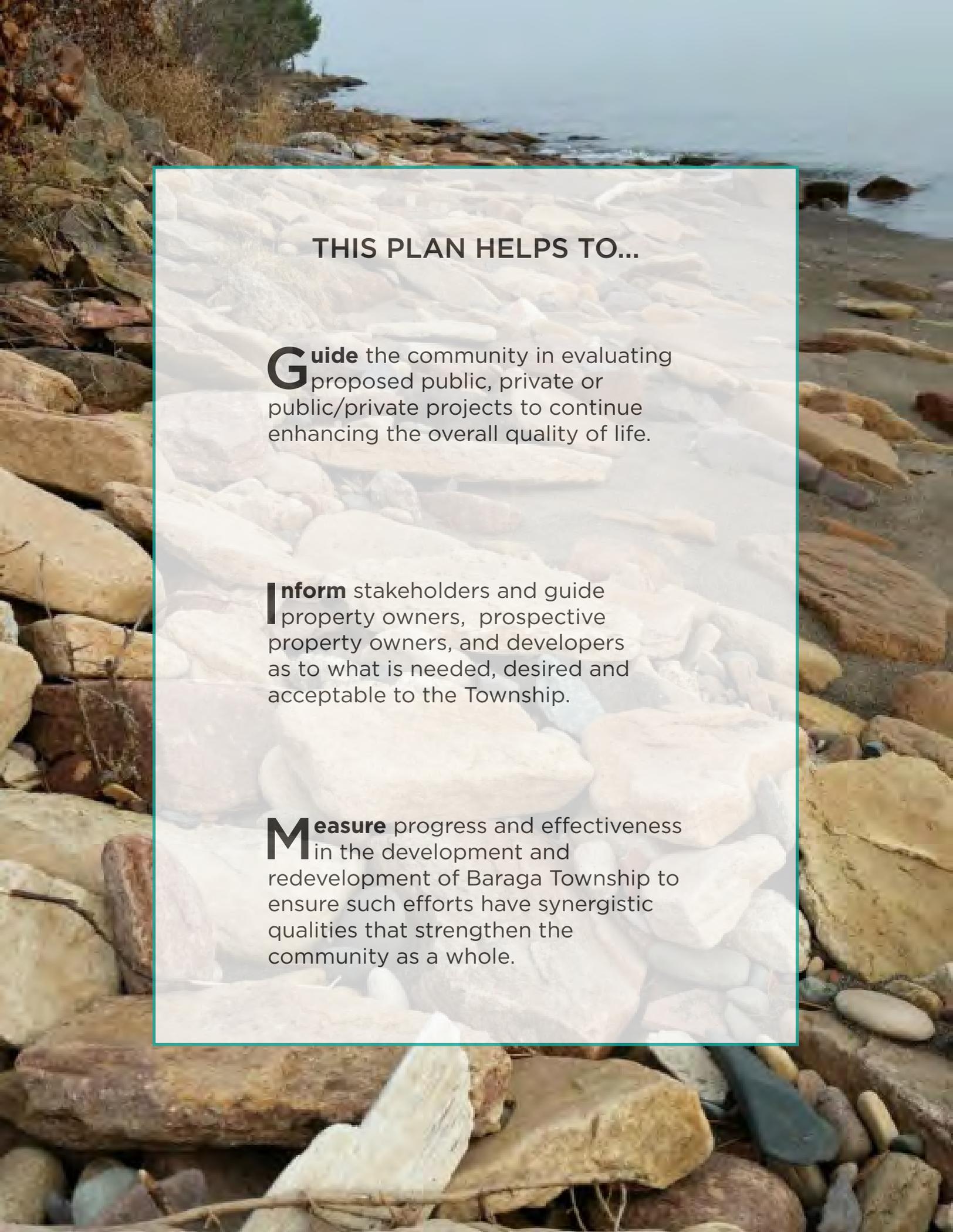
Private Development Decisions

Property owners and developers should consider the goals, objectives, and strategies of the Plan in their investment decision. The Plan is intended to be used as a guide in development deliberations, such as zoning matters and infrastructure improvements. This Plan should be used as a tool by the Township to clearly communicate to property owners and developers the vision for what is desired in the Township.

Inter-Jurisdictional Coordination

The Plan should be used as a shared resource to help the Township, Village, Keweenaw Bay Indian Community, Western Upper Peninsula Planning & Development Region, and other entities plan for the future of the Baraga community. The Plan is intended to be flexible and fluid, and should be updated and amended as appropriate. New information and dialogue between all groups planning for the future of the community should influence the evolution of the goals, objectives and strategies over time.



The background image shows a rocky shoreline with various sized stones and pebbles in shades of brown, tan, and grey. In the distance, the ocean meets a clear, light blue sky. A semi-transparent white box with a thin teal border is centered over the image, containing text.

THIS PLAN HELPS TO...

Guide the community in evaluating proposed public, private or public/private projects to continue enhancing the overall quality of life.

Inform stakeholders and guide property owners, prospective property owners, and developers as to what is needed, desired and acceptable to the Township.

Measure progress and effectiveness in the development and redevelopment of Baraga Township to ensure such efforts have synergistic qualities that strengthen the community as a whole.

02

CREATING THE PLAN

This chapter provides background on how the Plan was developed and summary findings on public input.



BARAGA TWP.
MASTER PLAN

2.1 OVERVIEW

This Plan works to integrate sustainability and resiliency throughout the document to serve as a foundation of the Plan. The overarching ambition of the planning effort was to fully prepare Baraga Township to meet the challenges of the future, handle potential shocks to community systems and find ways to become more self-sufficient. Within that framework, the goals for the planning process included:

1. Engaging the public to ensure support
2. Further advancing a strong sense of place and community
3. Identifying vision, goals, and implementation strategies to ultimately create a usable plan

2.2 APPROACH

In combination, the planning process phases involved both an objective evaluation of the current conditions and a community assessment based on local insight and opinions. A balanced approach pairs technical research with feedback from the public to allow for decision-making to be based on both a factual and intuitive, first-hand knowledge foundation. Utilizing both sources of perspective is essential creating a plan that is tailored to meet the needs of the community.

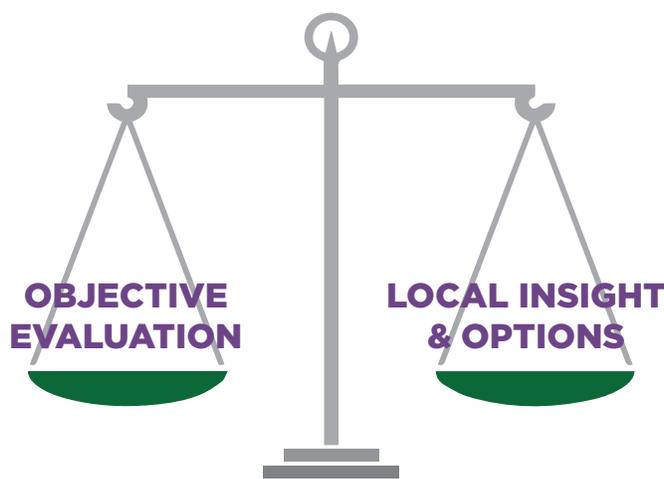


Figure 2.1 Approach to this plan

2.3 RESEARCH

A key component of this planning process was the development of a report titled Building Resiliency in Baraga Township, which was authored by the Land Information Access Association (LIAA), a non-profit based in Traverse City that provides expertise and technical assistance to local units of government. Language and information from the report is incorporated into this Master Plan document. A full copy of the report is included in the Appendix. The report development process included analysis of social, environmental, and economic data and maps as well as interviews with local stakeholders, with the goal of identifying ways in which Baraga Township is especially vulnerable.

STAKEHOLDER INTERVIEWS

On June 14, 2016, the project team met with representatives from a number of local, regional, and state agencies to learn about the community from a variety of perspectives. This information helped inform the recommendations of the report and the goals, objectives, and strategies of this Plan. Meetings were held with following groups and agencies:

- Baraga Township
- Michigan Department of Natural Resources, Baraga Office
- Western Upper Peninsula Planning and Development Region
- Keweenaw Bay Indian Community

PLANNING COMMISSION DISCUSSION

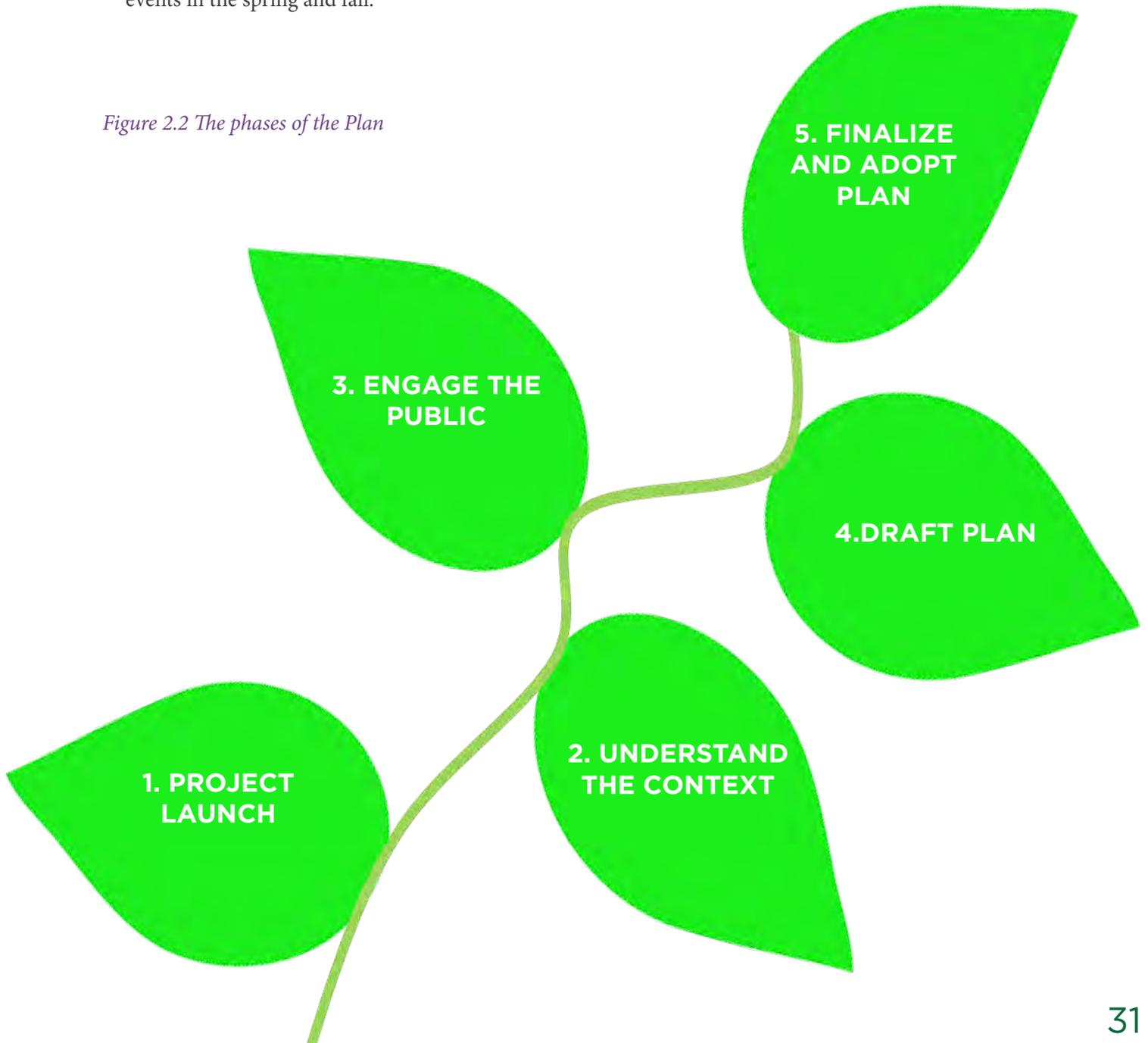
On July 19, 2016, Dr. Sarah Green and Dr. David Watkins provided a presentation to the Planning Commission on the area's changing climate trends and coastal dynamics. During this meeting, participants discussed how these changes may be impacting the Township and how this should be addressed in the Plan's Goals, Objectives, and Strategies.

SUMMARY OF FINDINGS

The main findings of the report include:

- Wildfire risk is very high in Baraga County, and the community should work to coordinate emergency response planning, understand where homes are most at risk, and manage lands to reduce the risk.
- The quality of road infrastructure may be increasingly threatened by more intense rain and snow events, greater erosion along the Lake Superior shoreline, and increasing “rain on snow” events in the spring and fall.
- Wildlife changes should be expected as tree species, plant communities, and habitat shift due to increasing temperatures.
- Tourism may be impacted by climate variability in the future in both positive and negative ways. For example, fishing and hunting may be restricted as temperatures warm and trout and other species move further north. However, warmer temperatures may extend the summer tourism season.

Figure 2.2 The phases of the Plan



2.4 COMMUNITY ENGAGEMENT

PUBLIC OPEN HOUSE

The project team coordinated with the Village of Baraga to join with their Master Plan Open House at the on June 15, 2016. The Open House was facilitated by MSU Extension and the Michigan Municipal League with the purpose of collecting public input for the Master Plan. The purpose of the open house was to gather initial community input on community assets, issues, and visions for the future. Approximately 20 residents attended the open house. Residents were asked to visit three different 'stations' around the room and provide feedback at each. Responses from the open house were shared with the Township and considered during the development of this Plan.

At the first station, residents were asked to use sticky notes or sharpie markers to place or draw on the map Placemaking Assets (quality of life things – trails, arts, history/culture, etc.), Economic Development Assets (large employers, natural and human resources, transportation, etc.), and Key Centers (the downtown), Corridors (transportation routes), and Nodes (important intersections). Within the Township, the following assets were identified:

- Historical site
- ORV trails – use railroad grade to Houghton-Baraga
- Bird watching tower. trails, boardwalks
- baseball field
- Assinins church and cemetery
- Transfer station
- New township hall and ambulance garage on US41



Figure 2.3 Public Open House, courtesy MSU Extension

- Clean up Pelkie
- Divert river water to Big Lake to rise level

At the second station residents were presented with 10 survey results slides from the community survey conducted by Michigan Technological University in the winter/spring of 2016 and asked to react to the results. No residents provided specific written feedback at this station.

The third station consisted of a half-sheet of paper with three specific questions for which residents were asked to write responses. The questions and responses include:

1. *What are you really proud about the community? List several things that come to mind.*
 - We have a beautiful area with the bay
 - Small village community
 - Own ice rink
 - Public beaches
 - The people are good workers – friendly
 - Nice view of the bay
 - Deep water marina
 - Children park
 - Scenery
 - Patriotic citizens
 - Good snow removal
 - The big lake
 - Rural setting
 - Access to forest, hunting, fishing
 - Peoples love for the outdoors
 - Safety
 - Natural resources
2. *What are you sorry about or not so proud about the community?*
 - Need signage – lighthouse etc.
 - Need sidewalks
 - Need public transportation so folks can work
 - Drug use
 - Too many loose dogs
 - Facebook page for the Village
 - Some disconnect with history of the area and tribal community
 - Losing a lot of our manufacturing
 - Businesses are almost all on US 41
 - Jobs are moving out
 - Occasional yard blight – debris

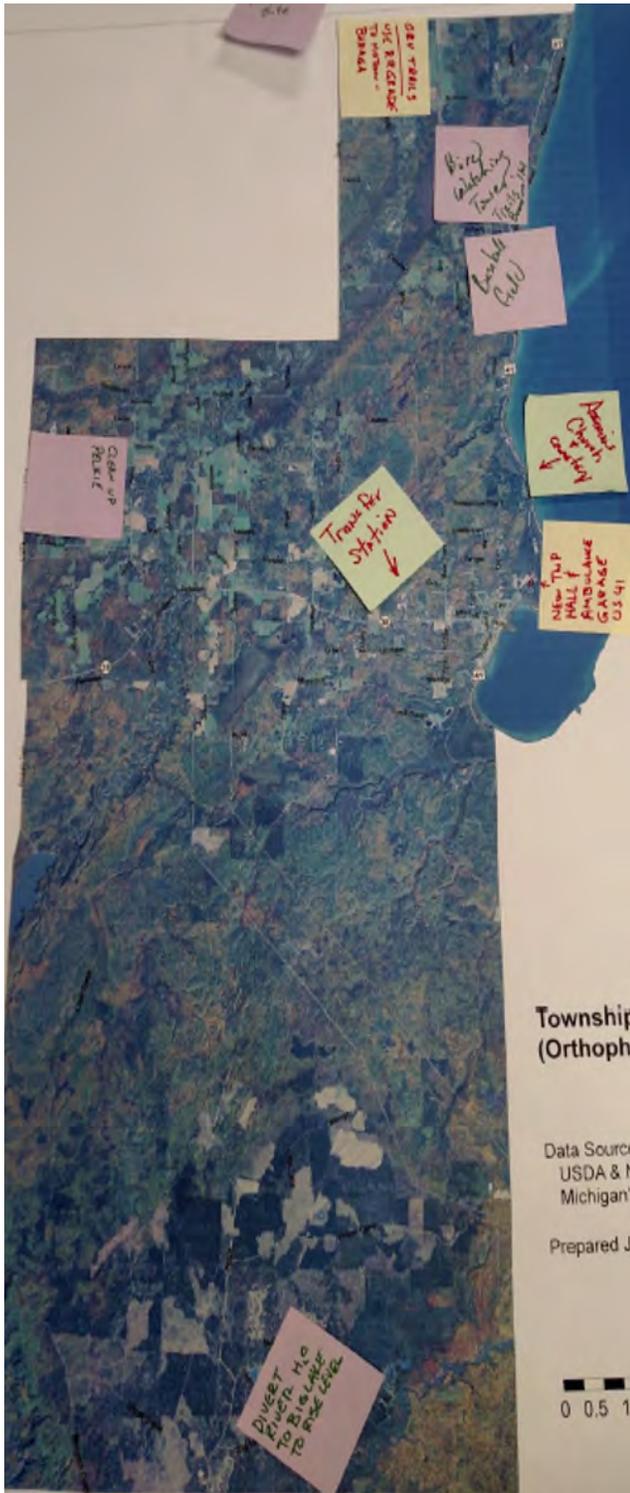


Figure 2.4 Baraga Township Asset Map as completed during the public open house on June 15, 2016, , courtesy MSU Extension

- Low wages for working people, lack of jobs
- Lack of vision for downtown development
- Trashy appearance of community as a whole
- Junk yards, long grass

3. *Imagine you've come back to the community after 20 years away, what do you see and experience that has changed for the better. It is ok to share your wildest dreams!*

- Full employment, less drugs
- Waterfront trail in the Village and connects to Village of L'Anse and KBIC
- Sidewalks with lighting for non-motorized traffic
- Cleaned up and good view of the lake
- A trail from Sand Point to Pequaming!
- A spirit of cooperation between tribal and local governments for the betterment and beauty of the community
- Manufacturing still going strong in the area

SURVEY

A mailed survey was sent to all households within the Township and was also made available online throughout the planning process. The survey was designed to complement the Village of Baraga's survey and receive citizen feedback on a range of important issues and priorities being considered by the Township.

The survey was intended to take a snapshot of public opinion during a specific time frame and on specific issues. The survey results offer a mechanism for public opinion to be considered while planning for the future of the community.

The Township received 212 responses. The average survey respondent was between 45 and 64 years old. Most respondent have lived in the Township for over 25 years and plan on continuing to live in the Township in the long term.

In general, survey respondents expressed that they value the natural resources and beauty of the area but have concern over low employment and entertainment opportunities.

The following charts and images present the general results of the survey. A copy of the full survey report is included in the appendix.

On a scale of 1-5, with 5 being very satisfied and 1 being very dissatisfied, how satisfied are you with:

	1 Very Dissatisfied	2 Dissatisfied	3 Neutral	4 Satisfied	5 Very Satisfied
Public service	17	18	85	65	10
Appearance of buildings	18	62	74	36	5
Sense of community	10	30	73	69	14
Road quality	28	49	49	61	11
Recreational resources	17	28	56	68	26
Natural beauty	6	3	12	82	95
Access to natural areas	12	14	41	84	45
Community and cultural events	10	42	87	41	13
Public transportation	52	42	86	9	4
Entertainment opportunities	32	61	75	23	5
Employment opportunities	47	69	64	14	3
Sense of safety	7	11	58	98	23

Figure 2.5 Question 4 survey response summary

Based on previous planning efforts and input received so far, the Plan's Steering Committee has developed the following for draft goals. Using 1 through 4, please rank these in order that is most important to you.

	1	2	3	4
Goal 1: Preserve open space, natural beauty, and critical environmental areas	55	28	32	42
Goal 2: Generate and direct economic development	70	28	24	34
Goal 3: Provide, facilitate and maintain quality public services and infrastructure	25	50	54	26
Goal 4: Foster a distinctive, attractive community with a strong sense of place	22	45	39	48

Figure 2.6 Question 5 survey response summary

The following “phrase clouds” are reflective of the answers received from open-ended survey questions. A full listing of responses is included in the appendix.

What actions do you think will support these goals?

Protect and preserve recreational property
Small organizations should help
Increase public transportation for elderly and homebound
Clean up blight Attract new businesses
Better roads, school programs
Promote Tourism

Figure 2.7 Question 7 survey response summary

What do you want Baraga Township to be known for (future identity) in the next 5 to 10 years?

Natural Beauty Safe A beautiful, friendly, growing economic area
Green and welcoming
A destination A great place to live, visit, or work
Balance of industry and conservation
Job opportunities and a resort destination
A good place to be citizen at any age Quality of life
Care for all citizens of diverse origins, background and cultures
Good schools

Figure 2.8 Question 9 survey response summary

03

THE CONTEXT

This chapter offers background on Baraga Township and provides an overview of national and local trends.



BARAGA TWP.
MASTER PLAN

3.1 BARAGA TOWNSHIP

Baraga Township is located in the Upper Peninsula of Michigan on the coast of Lake Superior and is known for its natural beauty. Baraga Township is heavily forested with northern hardwoods, consisting primarily of sugar maple, red maple, yellow birch, oak and basswood. The east boundary of the Township consists of over thirteen miles of Lake Superior frontage. This frontage consists of sandy beaches and high sandstone cliffs. It provides a significant scenic corridor and places for abundant recreational activities in summer and winter. Big Lake is located in the southern part of the Township. A portion of the lake is developed with year-round and seasonal camps but a remainder of the shore is still in a natural condition. A popular State Forest Campground is located on the lake and receives moderate to heavy use for camping, fishing, and swimming. On the west boundary of the Township is Prickett Dam and Reservoir. The reservoir is well known beyond the local area and attracts anglers from throughout the Midwest.

Baraga Township is also increasingly known among Michigan travelers as the home of the Ojibwa Casino Resort. The casino, owned and operated by the Keweenaw Bay Indian Community, features slots, cards, and hotel accommodations. A section of the federally recognized L'Anse Indian Reservation of the Keweenaw Bay Indian Community of the Lake Superior Band of Chippewa Indians is in northern Baraga Township where the casino and other Keweenaw Bay Indian community facilities have been established.

Baraga Township was named after Bishop Frederic Baraga who conducted missionary work in the region. A large, iconic shrine is devoted to Bishop Baraga, which is located just outside of the Township on US 41.



Figures 3.1 & 3.2 Location and Map of Baraga Township



3.2 ENVIRONMENTAL TRENDS

TEMPERATURE CHANGES

As presented in the Superior Watershed Partnership Lake Superior Climate Adaptation, Mitigation and Implementation Plan, temperatures have significantly increased in the Upper Peninsula in recent decades, with the 2000’s being the hottest decade recorded followed by the 1990’s having the second hottest temperatures. By the year 2100, “summer temperatures in the Great Lakes region are projected to rise between 5 degrees and 20 degrees.” This means that the Upper Peninsula may feel for like Northwest Illinois or possibly like Kansas by the end of the century, which has great impact on how the Township functions and the Baraga community’s identity as a forested, scenic, coastal community.

The impact of rising temperatures is already being observed, as shown in the following table.

Observed climate and coastal changes in the Western U.P.	Recent Events
Warmer temperatures overall with periods of drought in the summer	4/12/2002 – Extensive flooding caused by record snows in February and March followed by record – high temperatures in the 70s and 80s, and 2 inches of rain. Total damages topped \$18 million in the region.
Warmer temperatures in Lake Superior, inland lakes, and rivers	
Spring arriving earlier and generally shorter winters	5/11/2003 – Rainfall exceeded 4.5 inches and flooded downtown LAnse and many areas of the County.
Increased number and severity of rain events, even in winter	9/24/2010 – As a result of heavy rain, the Sturgeon River overflowed at Halonen Road seven miles northwest of Baraga.
Less ice cover on Lake Superior causing stronger and taller waves	Late April 2013 – Rapidly melting snow caused extensive flooding, with the Sturgeon River slightly exceeding flood stage. In the Village of Baraga, the flooding caused failure of a major culvert, with a reconstruction cost of \$60,000 to \$80,000.
Less predictable snowfall, with snow pack staying on the ground for fewer days	January 2015 – About 1/3rd of the Keweenaw Peninsula’s FJ McLain State Park closed as a result of coastal erosion.
Increased occurrences of flooding and shoreline erosion	July 2016 – Severe storms in the Western U.P. caused straight line winds up to 90 mph and caused extensive damage to infrastructure throughout the area.

The information presented in this table came from a variety of sources, including the Great Lakes Integrated Sciences + Assessments Center and the Lake Superior Climate Adaptation and Implementation Plan. For more information, see the Building Resiliency in Baraga Township report, included in the appendix of this Plan.

ANIMALS, PLANTS & WATER

As this trend continues, the likely impacts on the animals, plants and water in the Township and surrounding region include:

- Habitats for many species will shrink and move further north
- Cold-water fish may decline; warm water fish may increase
- Change in forest composition; decline in species like jack pine and birch
- New species may become established in the area such as turkey ticks, and a variety of birds
- Increased risk of invasive species, pests, and diseases
- Habitat fragmentation may increase, disconnecting vital habitat and migration corridors
- Changes in wetlands, including changes in temperature, seasonality, and habitat
- Increased risk of wetland habitat loss to erosion and flooding
- Declining seabird populations due to damaging coastal waves and eroding beach habitat
- Possible declines in particular fish species like whitefish due to declining ice cover
- Increased runoff may cause chronic flooding and water quality concerns
- Septic systems may be damaged from increased precipitation, triggering water quality and human health concerns
- Wetland health may decrease, reducing flood control and habitat

3.3 SOCIAL TRENDS

CHANGING DEMOGRAPHICS

According to the U.S. Census Bureau, by 2050, the population aged 65 and over is projected to be 83.7 million, almost double its estimated population of 43.1 million in 2012. In 2011 Baby Boomers began turning 65 and by 2050, the surviving baby boomers will be over the age of 85.

Lifestyle and daily needs of this group also shift as they age. Most individuals are living longer and having fewer children. They are working longer and will be more ethnically diverse than their

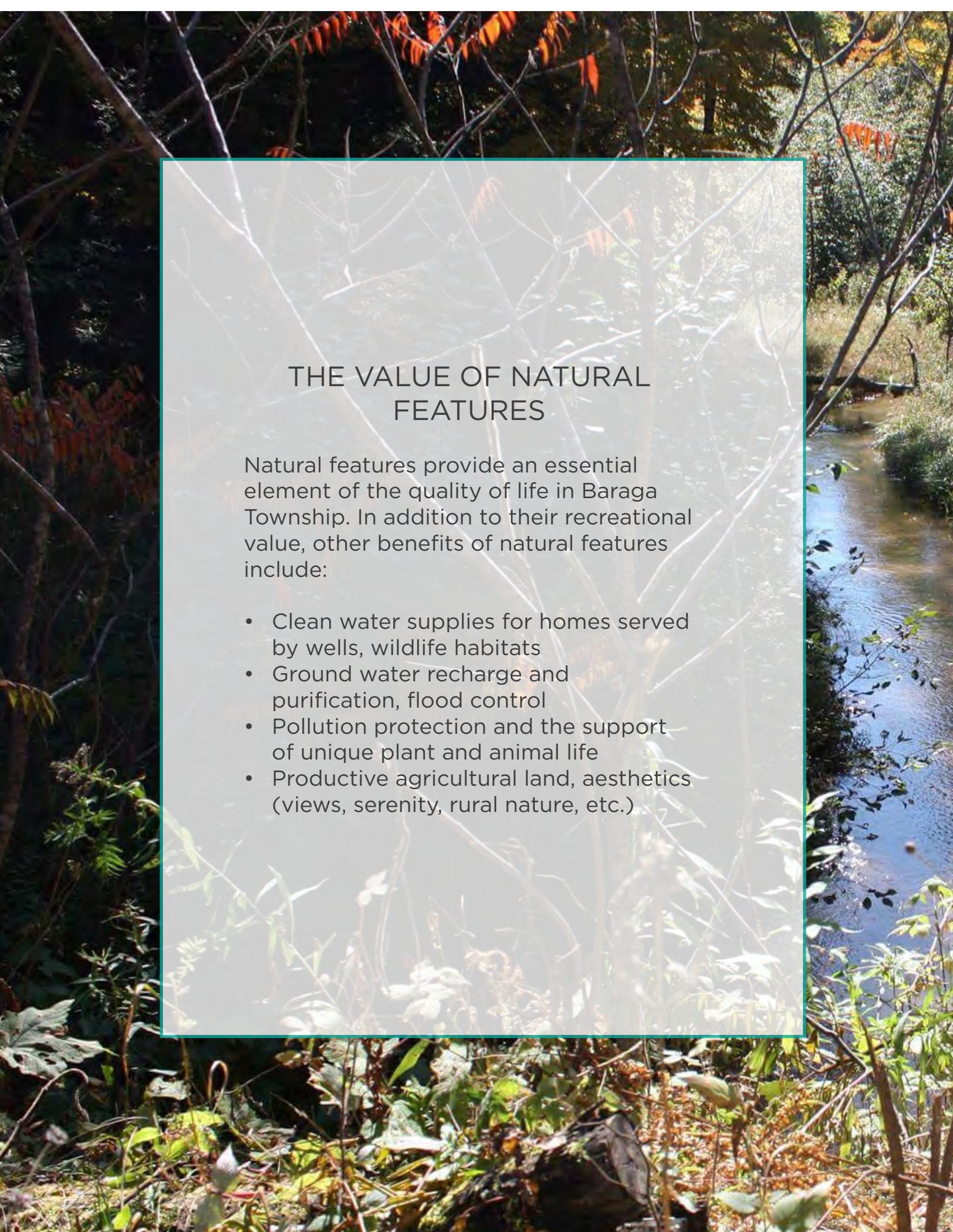
predecessors at age 65 and over. As for housing, the large majority of this group prefers to stay in their current home or community as they age. Their needs and demands include proximity to amenities including healthcare, low-cost and appropriate housing and transportation.

HOUSING

Current national trends show that the majority of individuals choose where to live based on location first, and then resolve the logistics of finding employment and housing. The result of this change is more competition for jobs and housing in popular urban areas that offer the desired amenities. Because of this, a declining number are choosing to live in outlying suburbs, small towns, and rural areas as these locations lack the sought-after amenities and have less opportunities for employment.

As housing needs and wants change with the shifting demographics, gaps in affordability and availability also become apparent. Average-income earning individuals and families are struggling to find suitable, affordable housing. An increasingly popular solution considers “Missing Middle Housing”. Missing Middle Housing is a term referring to a range of multi-unit or clustered housing types with a range in affordability, compatible in scale with single family homes that help meet the growing demand for walkable town living. It addresses the desires of both millennials and baby boomers while considering the available housing stock. As the emphasis on walkability and the diversifying of lifestyles, households and incomes increase, it is extremely important to address the location and type of housing in the community.

In 2016 there was a Target Market Analysis Study conducted for Baraga County, which assessed where development opportunities were available for Missing Middle Housing. According to the study, the Village of Baraga offers prime opportunities in the County to develop “Missing Middle Housing.” For example, stakeholders involved with the Target Market Analysis study identified a two-level building at 203 Michigan Avenue (Highway 38) that could be converted into a mixed-use project with upper level lofts or flats. The Village also includes a mix of commercial uses along Highway 41 that help intercept visiting patrons and drive-by traffic. Its

A scenic view of a river flowing through a forest. The trees are in various stages of autumn, with some leaves turning orange and red. The river is clear and reflects the surrounding greenery. The scene is peaceful and natural.

THE VALUE OF NATURAL FEATURES

Natural features provide an essential element of the quality of life in Baraga Township. In addition to their recreational value, other benefits of natural features include:

- Clean water supplies for homes served by wells, wildlife habitats
- Ground water recharge and purification, flood control
- Pollution protection and the support of unique plant and animal life
- Productive agricultural land, aesthetics (views, serenity, rural nature, etc.)

proximity to the lakefront could be leveraged for recreational and entertainment venues, which might help attract and intercept more visitors and migrating households moving into and within the County.

PLACEMAKING

Placemaking is the process of creating quality places where people want to live, work, play and visit. They are choosing to live in communities that offer resources, amenities, social and professional networks, and opportunities to support thriving lifestyles. People's idea of their built environment is changing as they greatly value the emotion and feeling they associate with their community.

Establishing community identity has proven to help foster the connection between people and place. It gives residents a sense of belonging and stability, in turn improving quality of life. Scenic areas, such as the ones found in Baraga Township, offer a strong sense of place as well as supporting general the well-being of people according to recent research that explores the negative impacts of what is being termed "nature deficit disorder," which is experienced by people who have little access to natural areas. In addition, areas that offer "Adventure Tourism" opportunities help offer a strong sense of place. "Adventure Tourism" involves travel destinations that provide exciting, somewhat challenging outdoor activities in wilderness areas. Baraga Township's location and pristine natural areas are ripe for cultivating adventure tourism opportunities.

TRANSPORTATION

Changes in transportation include an increase in ride sharing, driverless cars, electric or Eco-efficient cars, public transportation and non-motorized mobility. This shows a shifting attitude in which individuals view how they travel. In connection with evolving transportation modes, is the shifting mindset about road design and infrastructure that supports our travel. Complete streets, for example, are designed to accommodate all users, including multiple modes of transportation,

ages, and abilities. Transportation planning with a complete streets policy uses the entire right of way to increase functionality, convince, and safety for users while maintaining traffic capacity and flow. They can include, but are not limited to, the following: bike lanes, wide sidewalks, bus lanes, street trees, curb ramps, median islands, and roundabouts. The focus of complete streets does not stop at providing facilities for alternate forms of transportation, but also places importance on the creation and enhancement of the public realm.

SOCIAL EQUITY & HEALTH

As the country's demographics shift toward higher racial and ethnic diversity, and the gap between economic status widens, it becomes increasingly important to consider planning for equity. This is especially true in light of the environmental changes that are expected from warming temperatures. Some of the most vulnerable populations, such as children, low-income individuals and families, and the elderly will be the most susceptible to health risks. These health risks include:

- Increased risks water-borne respiratory, and vector born disease as a result of flooding
- Wildfire smoke, severe storms, and high temperatures may exacerbate existing health problems in vulnerable populations like the elderly and disabled
- Increase in health problems like asthma and allergies
- Increased precipitation can pollute public water supplies and cause disease
- Increasing air temperatures may stress populations that lack access to air conditioning.

POPULATIONS & HOUSEHOLDS

As of the census of 2000, there were 3,542 people and 777 families residing in the Township. These census numbers include the Village along with inmates that are within the State of Michigan Correctional Facility located in the Village. The population density was 19.1 per square mile. There were 1,455 housing units at an average density of 7.8 per square mile. The racial makeup of the Township was 67.56% White, 12.11% African American, 14.00% Native American, 0.40% Asian, 0.48% from other races, and 5.45% from two or more races. Hispanic or Latino of any race were



1.19% of the population. 28.3% were of Finnish, 9.6% German and 8.8% French ancestry.

In recent decades, the nationwide trend has been a decline in household size due to higher divorce rates, families having fewer children and elderly living alone. Baraga Township follows these national trends. There were 1,178 households out of which 33.6% had children under the age of 18 living with them, 49.6% were married couples living together, 11.8% had a female householder with no husband present, and 34.0% were non-families. 30.0% of all households were made up of individuals and 13.3% had someone living alone who was 65 years of age or older. The average household size was 2.49 and the average family size was 3.10.

3.4 ECONOMIC TRENDS

TRANSITION FROM OLD ECONOMY TO NEW ECONOMY

Michigan is still in the recovery process from the recession and like everywhere, Michigan is shifting from “old economy” to the “new economy.” The old economy is based on industrial activity that had once a great amount of wealth for communities, which promoted growth and extensive development of infrastructure, such as roads, museums, and hospitals, which is evidenced by communities that are now too big, infrastructure-wise, for their current population.

The “new economy refers to a global, entrepreneurial and knowledge-based economy where business success comes increasingly from the ability to incorporate knowledge, technology, creativity and innovation into their products and services. This departs from old economic principles familiar in the manufacturing sector, such as “economies of scale.” Decreases in the U.S. manufacturing economy have accompanied a shift toward an economy built upon creativity and knowledge. The job market is increasingly geared towards people with increased technological skills, higher education, and vast social connections rather than towards skilled laborers. The shift from the old economy to the new economy requires communities to consider placemaking attributes, such as cultural amenities and access to nature-based recreation to help attract, retain and

inspire new economy workers.

BARAGA COMMUNITY ECONOMIC RECOVERY

Specific to the Baraga Community, Baraga County has suffered a number of economic blows, including the 2008 downsizing of the Pettibone Corporation in Baraga and the 2009 closure of Terex Handlers' Baraga facility. During the recession in March 2009, the county had the second highest unemployment rate in the nation, at 27.7 percent. It continues to consistently have one of the highest unemployment rates in the State of Michigan, though is making some strides towards economic recovery. Currently, the main employers for Baraga include, Michigan Dept. of Corrections, Keweenaw Bay Tribal Services, Laser North, Metal, Pettibone Traverse, Industrial Lift Machines, Selkey Fabricators, Baraga Co. Federal Credit Union, and Ojibwa Casino.

In 2015 The Keweenaw Economic Development Alliance (KEDA), a regional organization created to assist communities and businesses with economic development, created a strategic plan to help improve economic conditions for Baraga County and others.

The goals in this strategic plan include:

- Foster Business Growth. Foster the startup, retention, expansion and attraction of small companies that increase the diversification of the regional economy and take advantage of its unique resources and complement efforts in the attraction and retention of talent.
- Improve Infrastructure. Ensure that the infrastructure needed by business and community is in place and at a level and cost to meet current and future demands.
- Revitalize our Communities. Create communities in Baraga, Houghton and Keweenaw Counties that are attractive to recruiting and retaining talent.
- Develop and Attract Talent. Develop a comprehensive attraction, retention, and education system that seeks out, attracts, and retains skilled talent and allows area residents to develop the talent and skills most appropriate for them and the local economy.
- Enhance Cultural and Recreational Opportunities. Develop and market the region's cultural and outdoor oriented family friendly lifestyle.



CLIMATE TREND IMPACTS ON THE ECONOMY

In relation to the environmental trends that show an increase in temperatures, the Baraga community could see the following opportunities and issues in relation to the economy:

- Longer summer growing season, which is good for tourism and agriculture
 - Uncertain snowfall may result in a declining winter tourism industry
 - Energy costs may increase in the summer due to air conditioning; costs may decline in mild winters
 - Cold water fishing may decrease; warm water fishing may increase
 - Increase in hunting opportunities of deer and turkey
 - Birding opportunities may be less reliable and overall bird diversity may decrease
 - Fluctuating lake levels may make navigation more difficult
 - Changes in tree species and forestry may mean shifts in timber and logging
- Tourism is likely to increase as opportunities for clean water recreation decline elsewhere

From a local government budgeting perspective, warming temperatures may also have an impact on the funds that are needed to provide necessary public services and infrastructure. These impacts include:

- Wildfire risks may increase in the summer and spring, requiring extra capacity and resources for prevention and firefighting
- Increased need for emergency shelters with backup generators
- Increased demand for emergency response, flooding rescue, and recovery assistance
- Greater risk of damage to critical facilities like utilities, power generation, and water supply lines
- Increased stress on roads, bridges, and culverts caused by flooding and fluctuating temperatures
- Transportation routes may require relocation as a result of increased coastal erosion
- Power outages and communication interruptions may become more common



04

GOALS, OBJECTIVES & STRATEGIES

This chapter presents the Plan's goals, objectives, and strategies, which are a result of the data gathered, public feedback, first-hand insight, and best planning practices.



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GOAL 1: Preserve open space, farmland, natural beauty, and critical environmental areas

Objective 1.1: Direct development away from sensitive and significant natural areas

Strategy 1.1.1: Conduct a comprehensive inventory of sensitive and fragile lands, such as wetland, flood plains, and scenic vistas

Strategy 1.1.2: Utilize zoning to direct development away from natural lands and towards existing areas of development

Strategy 1.1.3: Develop and enforce a set of natural features ordinances that will protect key natural features

Strategy 1.1.4: Through the zoning ordinance, direct commercial development and other higher intensity developments to areas that are already served by or in close proximity to the necessary infrastructure, such as water, sewer, and roads

Objective 1.2: Protect the water quality of inland lakes, streams and rivers

Strategy 1.2.1: Limit percentages of impervious surfaces in new developments to 15% of the total lot size

Strategy 1.2.2: Develop vegetative and shoreline buffer ordinances that will help protect surface waters from pollutants

Objective 1.3: Protect the community against wildfire risks

Strategy 1.3.1: Update the Community Wildfire Protection Plan using factors such as available water supply, adequacy of road systems for access, and the availability of each fire department to respond to calls

GOAL 2: Generate and direct economic development

Objective 2.1: Target areas for recreation tourism investment

Strategy 2.1.1: Collaborate in a comprehensive tourism planning strategy including working with MDNR, WUPPDR, and other regional partners.

Strategy 2.1.2: Partner with the MDNR to promote hunting, hiking, biking, and other recreational opportunities

Adventure Tourism involves responsible travel to natural areas while still experiencing an exciting adventure.

Strategy 2.1.3: Create additional winter opportunities like ice fishing and cross-country skiing

Strategy 2.1.4: Collaboratively develop a waterfront plan that recognizes the shoreline as a key regional asset and addresses water quality, recreational opportunities, and viewsheds

GOAL 3:

Facilitate opportunities to adapt to changing conditions

Objective 3.1: Explore and support the use of renewable energy options

Strategy 3.1.1: Develop ordinances and permitting processes that encourage and streamline the ability to install renewable energy applications

Objective 3.2: Provide resources for vulnerable populations during hazards

Strategy 3.2.1: Use the Vulnerability Assessment findings when allocating new community gardens, parks, or other amenities to alleviate stress in vulnerable populations

GOAL 4:

Foster a distinctive, attractive community with a strong sense of place

Objective 4.1.: Maintain a high-quality visual character throughout the community

Strategy: 4.1.1: Develop a property maintenance education and assistance program to help raise awareness about local codes and ordinances

Strategy: 4.1.2: Pursue placemaking initiatives, such as streetscaping

05

FUTURE LAND USE

This chapter presents the Plan's future land use categories and map. These are a reflection of the Plan's goals, objectives, and strategies as they relate to land use.



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5.1 FUTURE LAND USE CATEGORIES & DEFINITIONS

WORKING LANDS

The Working Lands category includes land that is being used for resources based industries, such as forestry. The purpose of this district is to preserve large, contiguous blocks of productive and potentially productive lands to support forestry and potentially farming industries.

GENERAL RESIDENTIAL

The General Residential category includes land that is used for single, two-family and multi-family dwellings. The desired character of this category is a traditional neighborhood design, such a grid street system, sidewalks, small lots, and shallow setbacks.

GENERAL MIXED USE

The Mixed Use category provides for areas where combinations of employment, housing, shopping, services, and recreational amenities are integrated into a compact, pedestrian oriented form.

SHORELINE MIXED USE

The Shoreline Mixed Use category includes land that is used for all residential and commercial uses along the waterfront. The desire for these developments is to incorporate technique which minimize the potential negative environmental and aesthetic impacts on the water resource. For example, shoreline buffers that help prevent erosion and pervious pavement that allow for the filtration of stormwater runoff is an encouraged design feature of all new shoreline developments. In addition, developments that provide visual access to the water, pedestrian paths, public parks and open space are preferred over developments that “wall off” the community from water resources.

GENERAL COMMERCIAL

The General Commercial category includes all commercial uses that serve both residents and the nearby surrounding communities.

BUSINESS CAMPUS

The Business Campus category provides for high-tech, industrial, or medical uses. Ideally, these uses will have campus-style character with pedestrian amenities, attention to landscaping, and environmental protection techniques in place. In addition, unified signage, entrances and internal streetscaping are desired.

RECREATION

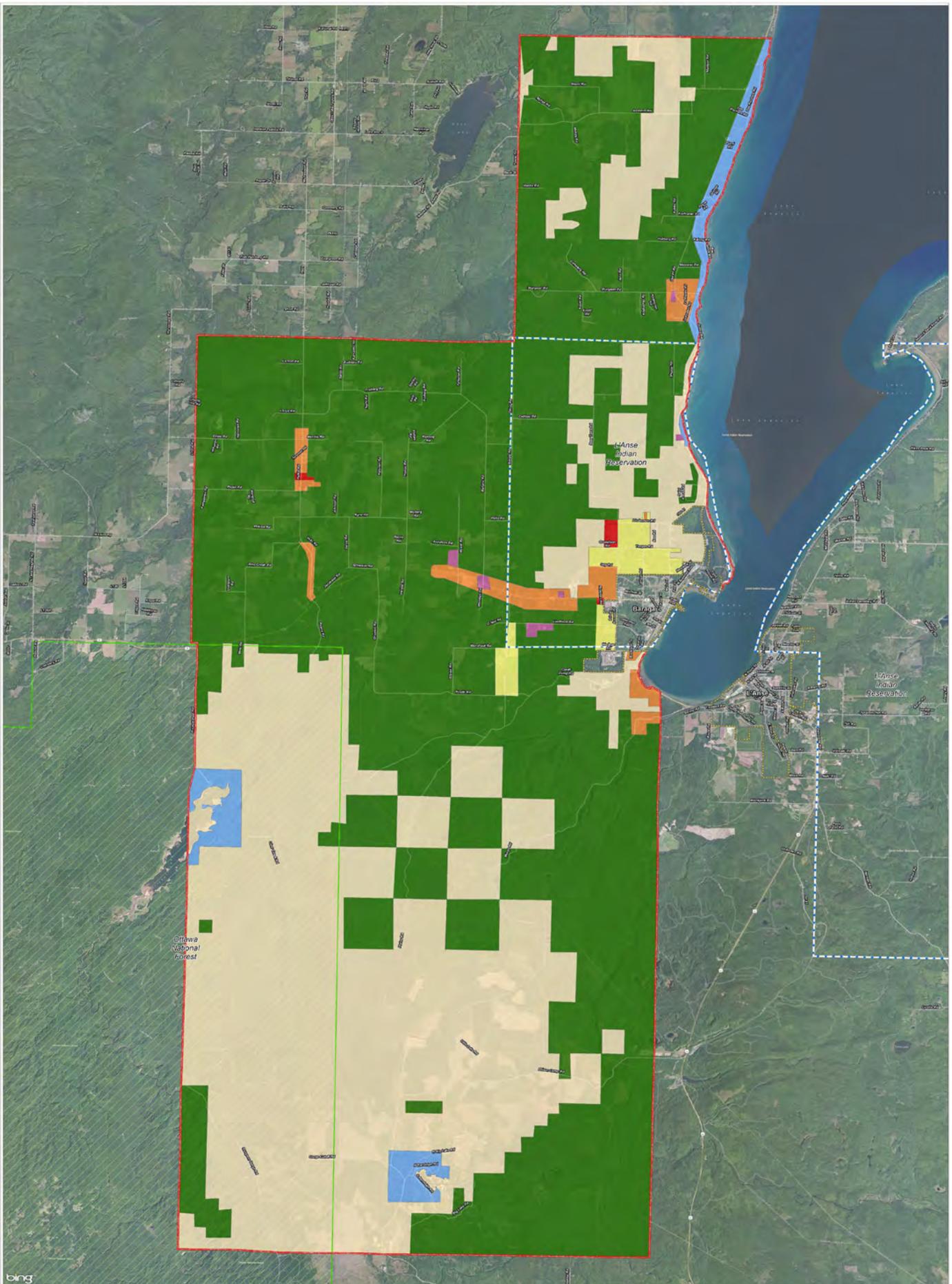
The Recreation category includes existing and future recreational facilities identified in the Recreation Plan. In general, this includes active and passive parks in addition to specialty parks, regional facilities, water access, trails and other unique facilities based on physical features or community focus.

FEDERAL/STATE LAND

This includes lands that owned by the U.S. or state government. Primarily, Michigan’s Department of Natural Resources manages these heavily forested areas, supervising recreational amenities, such as trails, and managing timber, water quality, and wildlife.

KEWEENAW BAY INDIAN COMMUNITY LAND

This is land that is federally recognized as being held in trust and under the jurisdiction of Keweenaw Bay Indian Community of the historic Lake Superior Band of Chippewa Indians. The trust land, or reservation, is located in two non-contiguous sections on either side of the Keweenaw Bay with portion of it in Baraga Township.



- Future Land Use**
- Shoreline Mixed Use
 - General Residential
 - Working Lands
 - General Commercial
 - General Mixed Use
 - Business Campus
 - FED - Federal / State Forest / Tribal
- Ottawa National Forest
- - - L'Anse Indian Reservation
- - - Village Boundary
- - - Municipal Boundary

**Baraga Township
Future Land Use**



DRAFT

Source: Data provided by OMA-Advisors, Village of Baraga, Bing Maps, and ESRI. OMA-Advisors does not warrant the accuracy of the data used in the map. This document is intended to assist the appropriate spatial location of the proposed features within the Community and all use is solely at the user's own risk.

Coordinate System: NAD 1983 StatePlane Michigan North FIPS 2011 Feet East

Map Published: January 21, 2017

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888.522.4711 | oma-advisors.com

06

PUTTING THE PLAN INTO ACTION

This chapter presents the action steps necessary to implement this Plan.



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CAPITAL IMPROVEMENT PLAN

OVERVIEW

A Capital Improvement Plan (CIP) is a tool to identify and prioritize the long-term capital project requirements of a local unit of government. The CIP is a schedule of proposed improvements to a community's public facilities that includes a prioritization of projects over a 6 year period. The first year of the CIP is the capital budget and the CIP is annually updated. The CIP's relationship to the master plan, as stated in the Michigan Planning Enabling Act (Act 33 of 2008), is "to further the desirable future development of the local unit of government under the master plan." To accomplish this, the planning commission, legislative body, or chief administrative official (depending on language in the charter), shall annually prepare the CIP to assist the planning commission and board or council in reviewing and approving public infrastructure projects, such as streets, parks, and utility infrastructure.

CIP PROCESS

A process known to be successful in creating CIPs is as follows:

1. Define CIP Process and Roles

- Appoint a CIP coordinator to lead the project
- Identify participants and roles for CIP preparation
- Establish a CIP Review Team
- Review and update capital improvement policies
- Collect data to assist with review, including budget projections, master plan amendments, policy changes and new regulations
- Define cost threshold, lifespan and types of projects to qualify for CIP
- Establish agreement on priority system to evaluate projects. Key considerations should include:
 - Is the project supported by the Master Plan or other plan
 - Is it legally required
 - Is it fiscally responsible
 - Is it a high priority for the community

Other considerations include:

- Relationship to or coordination with other projects
- Estimate of annual income from projects
- Estimate of annual operating expenses
- Duration of project
- Sequencing
- Project mandated by the state and/or federal law
- Projects essential to public health or safety
- Projects that save in operating costs

2. Hold Launch Meeting

- The CIP Review Team hosts launch meeting to explain purpose of CIP and roles in the process
- Members of the public are encouraged to share information about infrastructure needs and priorities
- Project lead summarized feedback from the public and provides to staff for consideration in identifying project

3. Identify Projects

- Complete asset inventory of existing capital investments, which includes
 - Age, condition and replacement dates
 - Status of projects currently underway
- Develop a schedule for replacement and improvement needs based on asset inventory
- Complete project application forms of projects to be considered for CIP

4. Evaluate and Score Projects

- The CIP Review Team uses criteria established in Step 1 to evaluate and score project requests (scoring can be done individually or as a team)

5. Rank Projects and Draft the CIP

- The CIP Review Team ranks projects based on:
 - Criteria established in Step 1
 - Available funding
 - Capacity to complete projects
- The project lead organized the projects into a table, with funding shown over 6 years (unfunded projects should also be included and scheduled for later years or compiled in a separate section)

6. Review and Approve the CIP

- The CIP Review Team provides draft to the Planning Commission
- Planning Commission reviews and conducts public hearing
- Planning Commission adopts the CIP and forwards to Council or Board
- Council or Board adopts CIP and uses for annual budget

7. Annually Review CIP

- For communities with two year budgets, the second year is a simple update
- Update costs, funding sources, and timing for a six-year system



ZONING STRATEGY

RELATIONSHIP BETWEEN THE PLAN AND ZONING

The Zoning Ordinance is a regulatory tool to manage land use that is enabled by the Michigan Zoning Enabling Act (MZEA), PA 110 of 2006. Section 203 (1) of the act requires that zoning be based on a plan, given that a plan describes the vision and policies for the future and the zoning ordinance provides the regulatory tool to achieve these policies. For instance, the Zoning Ordinance will help direct land uses to appropriate areas through zoning districts and promote community attractiveness through the dimensional standards designated for each land use.

ZONING DISTRICTS AND DIMENSIONAL STANDARDS

A description of each zoning district and dimensional standards is outlined in Township's zoning ordinance.

PROPOSED CHANGES TO THE ZONING ORDINANCE

Upon the adoption of this Plan, the Township intends to ensure that the zoning ordinance reflects the policies in this Plan. In general, all changes to the zoning ordinance will:

- Ensure that new developments uphold the desired natural and scenic character of the community
- Direct commercial development to lands that have the capacity to support such development and away from sensitive and significant natural features
- Establish adequate blight, lighting, natural feature protection, and noise regulations to minimize the negative impact on the community
- Allow for mixed land uses in designated areas to promote vibrancy and connection
- Promote recreational tourism
- Coordinate with adjacent jurisdictions
- Allow for a diversity of housing to provide "missing middle" housing options

Furthermore, to link the zoning ordinance to the Plan, the zoning districts will need to connect to the future land use districts described in this Plan and displayed on the Future Land Use Map. The zoning

districts, as they stand currently, and future land use districts are linked as follows:

FUTURE LAND USE/ZONING

Working lands/ Forest Resource and Agricultural
General Residential/Single Family
General Mixed Use/Mixed Use
Shoreline Mixed Use/Lake Shore Residential & Recreational
General Commercial/Commercial
Business Campus/Industrial
Recreation/Recreation
Federal and State Land/NA
Keweenaw Bay Indian Community Land/NA

IMPLEMENTATION MATRIX

The implementation matrix outlines each strategy with possible sources for funding and a general time frame. Because of the changing nature of these resources, this is only meant to serve as a guide for future budget planning and not as a rigid guide. Below are the time frames depicted in the matrix.

SHORT TERM

0 to 3 years

MEDIUM TERM

4 to 6 years

LONG TERM

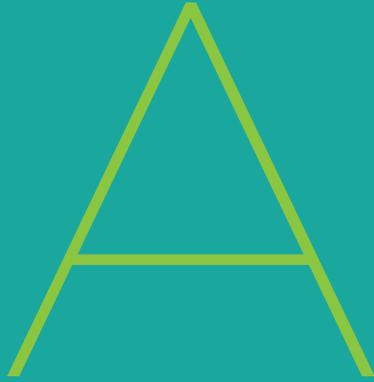
7 to 10 years

GOALS, OBJECTIVES & STRATEGIES	TIME FRAME	POTENTIAL FUNDING/ RESOURCES
Goal 1: Preserve open space, farmland, natural beauty and critical environmental areas		
Objective 1.1: Direct development away from sensitive and significant natural areas		Michigan Conservation Fund – Partnerships, Land Trusts
Strategy 1.1.1: Conduct a comprehensive inventory of sensitive and fragile lands, such as wetland, flood plains, and scenic vistas	SHORT TERM	
Strategy 1.1.2: Utilize zoning to direct development away from natural lands and towards existing areas of development	SHORT TERM	Michigan Department of Natural Resources’ Land and Water Conservation Fund Grants
Strategy 1.1.3: Develop and enforce a set of natural features ordinances that will protect key natural features	SHORT TERM	EPA Smart Growth Principles
Strategy 1.1.4: Through the zoning ordinance, direct commercial development and other higher intensity developments to areas that are already served by or in close proximity to the necessary infrastructure, such as water, sewer and roads	SHORT TERM	United States Department of Agriculture’s Rural Development’s Water and Waste Disposal Loan and Grant Program
Objective 1.2: Protect the water quality of inland lakes, streams and rivers		
Strategy 1.2.1: Limit percentages of impervious surfaces in new developments to 15% of the total lot size	SHORT TERM	
Strategy 1.2.2: Develop vegetative and shoreline buffer ordinances that will help protect surface waters from pollutants	SHORT TERM	DEQ – Various grants including Local Water Quality Monitoring Grants; Clean Water Revolving fund is loan to assist in construction of water pollution control facilities
Objective 1.3 Protect the community against wildfire risk		
Strategy 1.3.1: Update the Community Wildfire Protection Plan using factors such as available water supply, adequacy of road systems for access, and the available of each fire department to respond to calls	SHORT TERM	
Strategy 1.3.2: Evaluate the County’s Wildfire Risk Maps and create a Wildfire Hazard Overlay for Baraga Township	SHORT TERM	

GOALS, OBJECTIVES & STRATEGIES	TIME FRAME	POTENTIAL FUNDING/ RESOURCES
Goal 2: Generate and direct economic development		
Objective 2.1: Target areas for recreation tourism investment		Pure Michigan Tourism Strategic Plan
Strategy 2.1.1: Collaborate in a comprehensive tourism planning strategy including working with MDNR, WUPPDR, and other regional partners	MEDIUM TERM	Michigan DNR Snowmobile Trail Improvement Program
Strategy 2.1.2: Partner with the MDNR to promote hunting, hiking, biking, and other recreational opportunities	MEDIUM TERM	MDNR Trust Fund
Strategy 2.1.3: Create additional winter opportunities like ice fishing and cross-country skiing	MEDIUM TERM	MEDC Redevelopment Ready Communities
Strategy 2.1.4: Collaboratively develop a waterfront plan that recognizes the shoreline as a key regional asset and addresses water quality, recreational opportunities, and viewsheds	MEDIUM TERM	
Goal 3: Facilitate opportunities to adapt to changing conditions		
Objective 3.1: Explore and support the use of renewable energy options		Economic Development Administration's Public Works Program
Strategy 3.1.1: Examine ordinances and permitting processes that encourage and streamline the ability to install renewable energy applications	SHORT TERM	MDOT Transportation grants
Objective 3.2: Provide resources for vulnerable populations during hazards		
Strategy 3.2.1: Use the Vulnerability Assessment findings when allocating new emergency shelters, community gardens, parks, or other amenities to alleviate stress in vulnerable populations	ONGOING	

GOALS, OBJECTIVES & STRATEGIES	TIME FRAME	POTENTIAL FUNDING/ RESOURCES
Goal 4: Foster a distinctive, attractive community with a strong sense of place		
Objective 4.1.: Maintain a high-quality visual character throughout the community		MI Place
Strategy: 4.1.1: Develop a property maintenance education and assistance program to help raise awareness about local codes and ordinances	LONG TERM	MDOT Transportation Alternatives Program
Strategy: 4.1.2: Pursue placemaking initiatives, such as streetscaping	LONG TERM	MEDC Redevelopment Ready Communities





APPENDIX

Building Resiliency in Baraga Township



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BUILDING RESILIENCY IN
BARAGA TOWNSHIP

Acknowledgments

This report was prepared by the Land Information Access Association (LIAA) as part of the Baraga Township 2016 Master Plan Project. OHM Advisors facilitated the planning process and partnered with LIAA for the creation of this report. This project was funded by the Michigan Coastal Zone Management Program, Department of Environmental Quality, Office of the Great Lakes; and the National Oceanic and Atmospheric Administration, U.S. Department of Commerce through the Michigan Association of Planning.

A special thank you is owed to the organizations and individuals that contributed to the planning process.



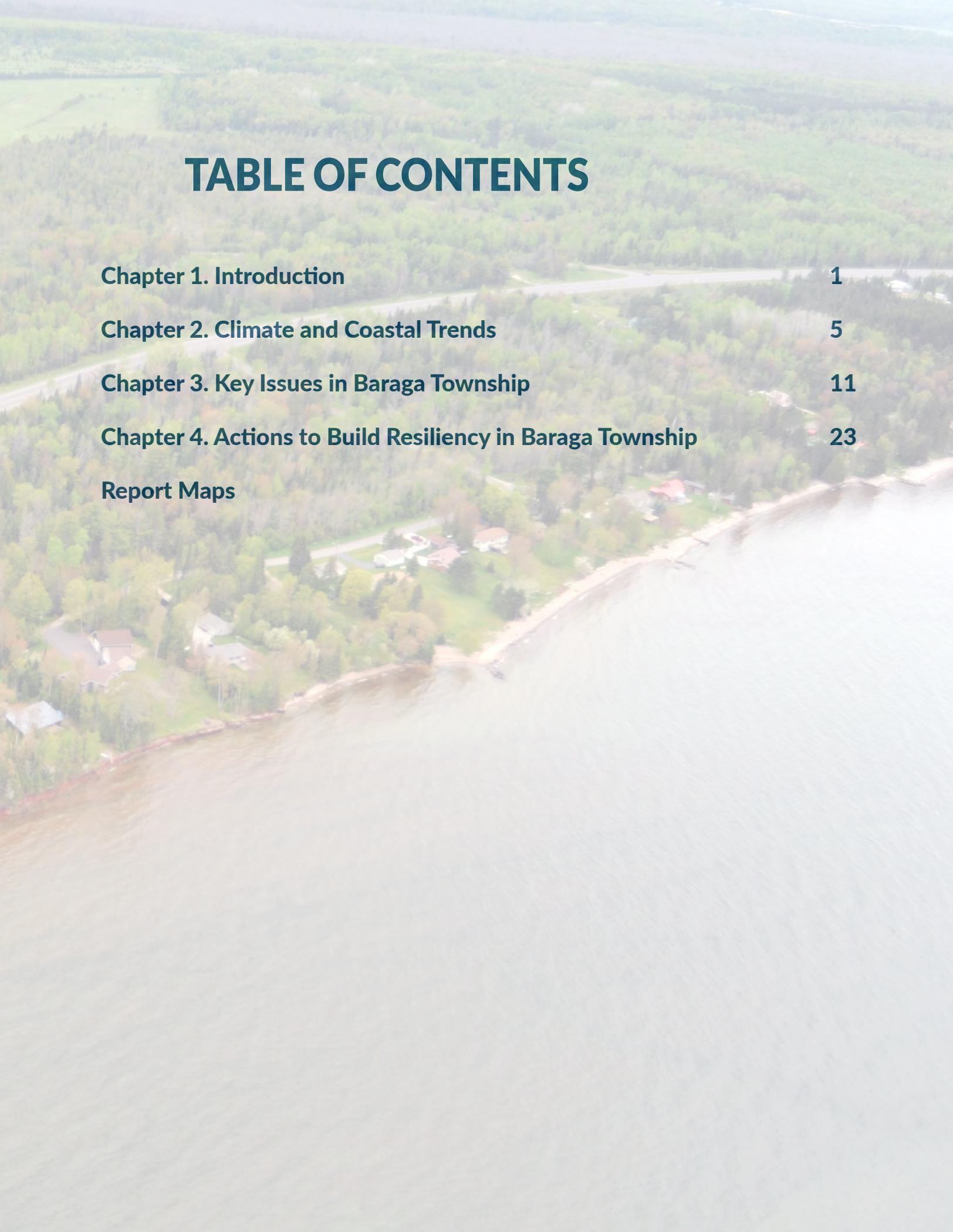


TABLE OF CONTENTS

Chapter 1. Introduction	1
Chapter 2. Climate and Coastal Trends	5
Chapter 3. Key Issues in Baraga Township	11
Chapter 4. Actions to Build Resiliency in Baraga Township	23
Report Maps	



1. INTRODUCTION

Why Plan for Greater Resiliency?

It is no secret the Great Lakes are one of the most unique and precious environmental features in the world. The Great Lakes contain more than 20% of the world's surface freshwater and support a population of more than 30 million people. Michigan is home to nearly 3,300 miles of Great Lakes shoreline, with 36,000 miles of rivers and streams, and 11,000 inland lakes.

Coastal communities have an especially important role to play in protecting the Great Lakes. Despite the great value of Michigan's coastal resources, coastal areas throughout Michigan are often not adequately protected from development pressures or environmental factors such as natural fluctuations in water levels. The Michigan Department of Environmental Quality has acknowledged the strong role local planning plays in protecting coastal areas from habitat fragmentation, loss of agricultural and forest lands, and increased impervious surfaces.

Planning for coastal areas at the local level requires knowledge of the dynamic coastal systems of Lake Superior and increasingly, an understanding of how global climate change is altering this system. This report aims to address these challenges for Baraga Township and provide clear, well-founded recommendations for the future.

About This Report

Building Resiliency in Baraga Township summarizes a Resiliency Workshop and Vulnerability Assessment conducted for the Baraga Township community during the summer of 2016. This report was developed as part of Baraga Township's Master Planning process facilitated by OHM Advisors and was funded by Michigan's Coastal Zone Management Program through the Michigan Association of Planning. The process to create this report included a Resiliency Workshop and a Vulnerability Assessment, each conducted with the goal of increasing the community's knowledge of coastal resources and strengthening Baraga Township's commitment to protecting valuable coastal areas. The nonprofit Land Information Access Association (LIAA) developed this report and OHM Advisors worked collaboratively with LIAA throughout the process. The key findings in this report, including the goals and objectives, were presented to the Baraga Township Planning Commission and used to inform the Baraga Township 2016 Master Plan.

A similar planning process was conducted simultaneously in the nearby City of Hancock, and many stakeholder meeting interviews, public meetings, and presentations were conducted jointly.

Coastal Michigan

Baraga Township is one of 250 local governments that directly touch a Great Lake. Coastal assets are part of what makes Baraga Township unique, and it is important to understand how to best plan for and manage dynamic coastal areas.



Coastal processes are influenced by natural systems such as wind, waves, lake levels, sediment and weather. Understanding coastal processes can help plan for naturally-occurring changes and activities along the shoreline.



Resiliency Workshop attendees worked as a team to brainstorm possible responses to the region's climate vulnerabilities.



The Village of Baraga Planning Commission Master Plan Open House provided an opportunity for the public to share their thoughts and ideas for the future of the community.

Public Process

This report was completed as a result of a public process that involved local officials, regional stakeholders, and community leaders.

Resiliency Workshop

LIAA and OHM Advisors hosted a Resiliency Workshop on June 13, 2016, at the First United Methodist Church in the City of Hancock. The workshop's purpose was to introduce information on changing climate trends and coastal dynamics to the Baraga Township Planning Commission and to the City of Hancock Master Plan Steering Committee. During the workshop, attendees participated in an exercise to discuss how climate changes may be impacting Baraga Township as well as the City of Hancock. Chapter 2 in this report summarizes the significant climate and coastal trends identified at the meeting by the workshop attendees. The agenda for the workshop was as follows:

- Overview of project and welcome - Heather Seyfarth, OHM
- What is resilience? - Harry Burkholder, LIAA
- Climate change impacts in the U.P. and Lake Superior - Dr. David Watkins and Dr. Sarah Green, MTU
- Vulnerability assessment overview - Katie Moss Sieb, LIAA
- Scenario activity

Stakeholder Meetings

On June 14, 2016, the project team met with representatives from a number of local, regional, and state agencies to learn about the community from a variety of perspectives. This information helped inform the action plan found in Chapter 4.

Meetings were held with the following agencies and groups:

- Baraga Township
- Michigan Department of Natural Resources, Baraga Office
- Western Upper Peninsula Planning and Development Region
- Keweenaw Bay Indian Community

Other Outreach

Additionally, the project team attended the Village of Baraga Planning Commission Master Plan Open House. The Open House was facilitated by MSU Extension and the Michigan Municipal League with purpose of collecting public input for the Village of Baraga's Master Plan project.



What is a Vulnerability Assessment?

This report includes the results of a qualitative vulnerability assessment conducted for Baraga Township. Results of this assessment may be useful for nearby communities including the Village of Baraga and the L'Anse Reservation, part of the Keweenaw Bay Indian Community. This vulnerability assessment process included analysis of social, environmental, and economic data and maps as well as interviews with local stakeholders, with the goal of identifying ways in which the Baraga community is especially vulnerable to a changing climate. Assessment results can help local officials and planning commissioners better understand where the most vulnerable populations in the community live and prioritize adaptation strategies. The assessment's findings and subsequent adaptation strategies can increase the community's resilience to extreme weather events and long-term projected changes to the climate in the future.

Summary of Main Findings

In general, the main findings from the vulnerability assessment process for Baraga Township include:

- Wildfire risk is very high in Baraga County, and the community should work to coordinate emergency response planning, understand where homes are most at risk, and manage lands to reduce the risk.
- The quality of road infrastructure may be increasingly threatened by more intense rain and snow events, greater erosion along the Lake Superior shoreline, and increasing “rain on snow” events in the spring and fall.
- Wildlife changes should be expected as tree species, plant communities, and habitat shift due to increasing temperatures.
- Tourism may be impacted by climate variability in the future in both positive and negative ways. For example, fishing and hunting may be restricted as temperatures warm and trout and other species move further north. However, warmer temperatures may extend the summer tourism season.
- A number of areas in the Baraga community have relatively high populations that may be more sensitive to a wildfire or climate-related event.

Baraga Township can take a number of steps toward increasing its resiliency to climate and coastal threats as discussed in Chapter 4.

Main Findings

More information about each of these findings can be found in Chapter 3, Key Issues in Baraga Township. Goals and Actions to address these key issues can be found in Chapter 4, Actions to Build Resiliency.



This report looks at the impacts of changing climate on the entire community, with an emphasis on coastal resources. Sectors including public health, water management, infrastructure, and public services are discussed in detail in Chapter 3.

2. CLIMATE AND COASTAL TRENDS

The climate in the Western U.P. is changing, and is expected to change even more. The impacts of climate variability are far-reaching, impacting economic, transportation, and natural systems. For coastal communities in the Upper Peninsula like Baraga Township, it is especially important to understand what a changing climate may mean for Lake Superior.

What is Changing in the Western U.P.?

Scientists from many fields have observed and documented significant changes in the Earth's climate. Many of the changes observed in the Western U.P. can be summarized into two trends: warmer temperatures and increased precipitation.

Warmer Temperatures

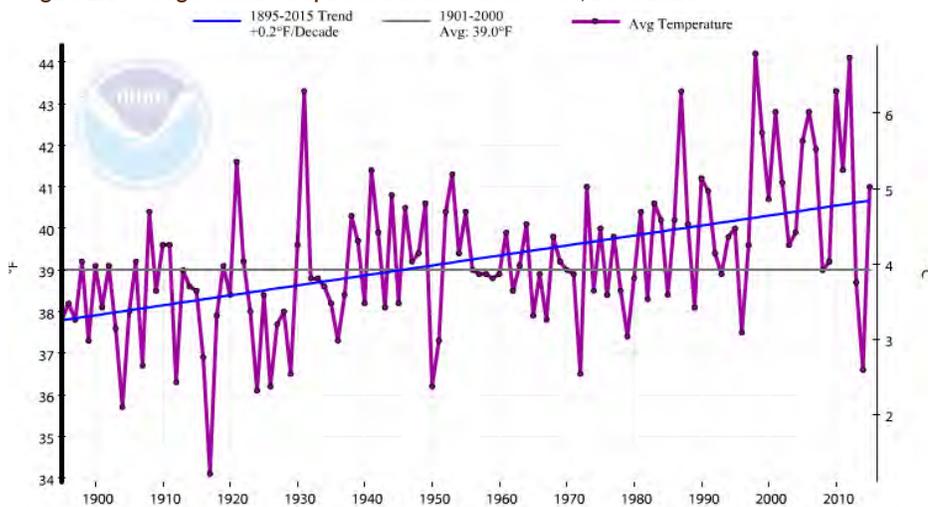
According to the Great Lakes Integrated Sciences + Assessments Center (GLISA), the average air temperature in the Great Lakes region increased by 2.3 degrees Fahrenheit from 1900 to 2012.¹ This regional trend holds true in the Western U.P., where the decadal average annual temperature has risen by about 2.5 degrees as shown in Figure 2.1.

GLISA has predicted an additional increase of 1.8 to 5.4° F in average air temperatures by 2050. Even a small increase in average temperature can drive dramatic changes in Michigan's climate and greatly impact the Great Lakes.

Climate and Weather

Climate and weather are directly related, but not the same thing. Weather refers to the day-to-day conditions in a particular place, like sunny or rainy, hot or cold. Climate refers to the long-term patterns of weather over large areas. When scientists speak of global climate change or climate variability, they are referring to changes in the generalized, regional patterns of weather over years and decades.

Figure 2.1 Average Annual Temperature in the Western U.P., 1895-2016



The average annual temperature in the Western Upper Peninsula has risen over time. Figure 2.1 shows the average annual temperature from 1895 to 2015 in the Western U.P. The blue line represents the trend per each decade and shows that the average temperature has increased locally, similar to regional trends.

Source: NOAA National Center for Environmental Information *Climate at a Glance: Global Time Series*, published July 2016, retrieved on August 9, 2016 from <http://www.ncdc.noaa.gov/cag/>

¹ The Great Lakes Integrated Sciences + Assessments Center (GLISA) is a consortium of scientists and educators from the University of Michigan and Michigan State University that provides climate models for the Great Lakes Region in support of community planning efforts like this report.



“What about the winters of 2013-2014?”

While average temperatures are rising in the Western U.P., it is also likely that longer durations of extreme cold will continue in the U.P. In 2013, communities throughout the U.P. experienced a record-breaking number of days below freezing. Marquette, for example, experienced 79 consecutive days of freezing temperatures! Many climate researchers believe this was due to a sustained change in the jetstream that allowed cold, polar air to travel further south. Many researchers, including Cornell University, believe this trend may reoccur in the Upper Peninsula, even as temperatures overall continue to rise.

See Cornell University's Climate Change research at: <http://climatechange.cornell.edu/what-is-a-polar-vortex/>

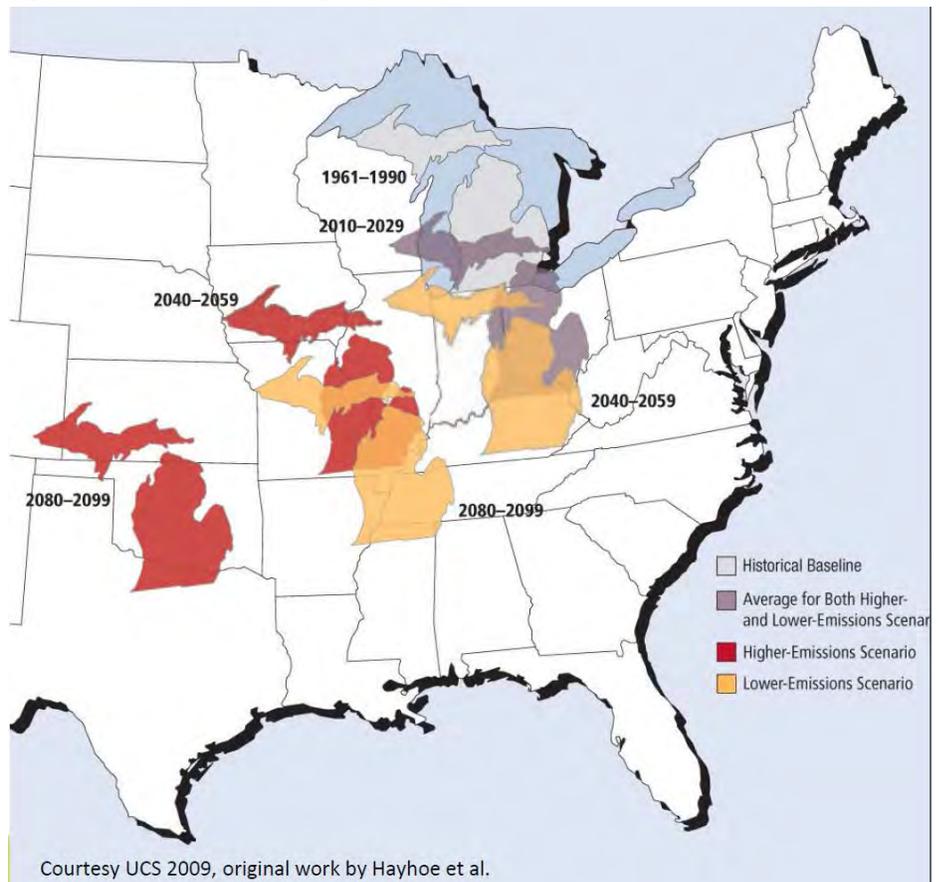
Effects of Warmer Air

Warmer air temperature has a number of secondary impacts on land and water. Increasing temperature in the Upper Peninsula has also led to increases in:

- The temperature of inland lakes and rivers
- The surface temperature and heat content of Lake Superior
- The number of days each year with high humidity and extreme heat

Figure 2.2 shows how temperatures in Michigan might feel by the end of the century under three different emissions scenarios. In the lower emissions scenario, Michigan's Upper Peninsula may feel more like Northwest Illinois, and if emissions continue to rise it may feel more like Kansas by 2099. Either way, air temperature increases will create a host of changes for communities in the Western U.P.

Figure 2.2 Temperatures in Michigan by 2099



Source: U.S. Global Change Research Program. *Global Climate Change in the United States, 2009*. Cambridge University Press, Cambridge, MA.

Increasing Precipitation

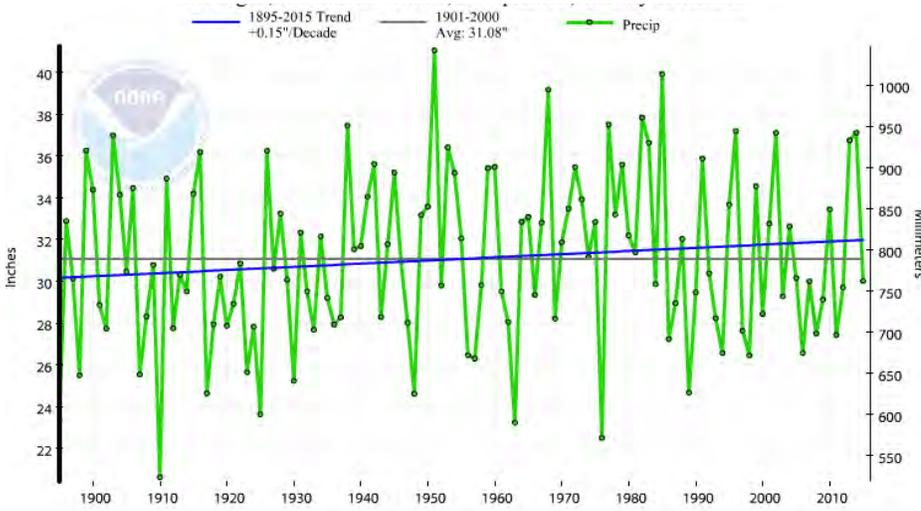
Increasing precipitation, primarily falling as rain, is a second major climate trend in the Western U.P. Both the number and severity of precipitation events has increased since as recently as the 1950s. In fact, GLISA reports that the amount of precipitation in the heaviest 1% of storms increased by 37% from 1958 to 2012 in the Midwest. In other words, heavy storms are becoming not only more frequent, but more severe. The number of inches of precipitation



has also increased in the Western U.P., as shown in Figure 2.3.

More precipitation may sound like good news to snow lovers in the Upper Peninsula, and in fact, additional snowfall may be a reality in the years to come. However, additional precipitation is likely to occur as rain, and predominantly in the shoulder seasons of spring and fall. Warmer air temperature combined with increasing precipitation means that communities in the Western U.P.

Figure 2.3 Annual Precipitation in Inches in the Western U.P., 1895-2016



The amount of precipitation in the Western Upper Peninsula has increased over time. Figure 2.3 shows the total inches in precipitation falling each year from 1895 to 2015 in the Western U.P. The blue line represents the trend per each decade and shows that the precipitation has increased locally, similar to regional trends.

Source: NOAA National Center for Environmental Information *Climate at a Glance: Global Time Series*, published July 2016, retrieved on August 9, 2016 from <http://www.ncdc.noaa.gov/cag/>

may see snow melting earlier in the year and more precipitation falling as rain, triggering greater amounts of runoff as winter transitions to spring. Snow is likely to become less reliable, with more snow resulting from sporadic lake-effect events.

Coastal Trends

Coastal communities in the Upper Peninsula are accustomed to Lake Superior’s powerful waves, erosion, and quickly changing shorelines. Each of these natural processes require thorough planning for development and infrastructure along the coast. Warmer temperatures and increasing precipitation, however, are augmenting these natural processes, requiring preemptive planning in coastal communities.

Researchers have found that the Lake Superior shoreline may be subject to more erosion and flooding risk as a result of climate variability.

Powerful Waves

High energy waves are high in speed and strong in intensity and are primarily created as fast winds move across the surface of the water for extended distances. Wave setup is the height of the water as waves reach the shore.



Erosion along the Great Lakes endangers homes built too close to the shoreline. This photo was taken on the Indiana coastline of Lake Michigan.

Source: EPA.gov



Flooding events resulting from heavy rains and melting snow are nothing new in Michigan, but are likely to increase in frequency and intensity.

Source: NOAA, Lansing State Journal File

Erosion

Increasing precipitation in the Western U.P. has caused an increase in the number and severity of severe storms. Storms create wind and rain patterns that result in powerful and tall waves along the coastline. Powerful and tall waves are natural conditions, but increases in the number and severity of severe storms is likely to increase the pace of erosion on and near the shoreline.

The Federal Emergency Management Agency (FEMA) projects approximately 28% of structures within 500 feet of a Great Lakes shoreline will be susceptible to erosion by 2060. Baraga's erosion vulnerability is discussed in the next chapter.

Shoreline and Riverine Flooding

An increase in severe storms throughout the Western Upper Peninsula is also likely to increase the risk of shoreline and riverine flooding in Baraga. Riverine flooding is caused when intense rainfall, ice jams, melting snow, or the failure of natural or manmade dams cause rivers and stormwater infrastructure to exceed carrying capacities and overflow. While riverine flooding is natural and occurs regularly in many places, future flooding may extend over several days, damage homes and roads, and have lasting impacts on water quality and public health. Increasing precipitation in the Western U.P. is likely to increase the risk of riverine flooding, especially in spring when the ground is still frozen or saturated with melting snow, and temperatures are likely to fluctuate quickly and unpredictably.

Shoreline flooding is caused by powerful and tall waves that overwhelm natural or manmade shoreline protective structures. Strong storms can cause storm surges that temporarily tilt the water surface up by as much as 8 feet. According to the Baraga County Hazard Mitigation Plan, this has happened a number of times along the Lake Superior shoreline in Baraga County. Severe storms are capable of pushing water inland from the shoreline, especially during periods of high water levels on Lake Superior. The Baraga County Hazard Mitigation Plan lists shoreline flooding as a highly probable event for Baraga Township, and it is likely that flooding elsewhere in surrounding communities could have impacts on the Township's infrastructure.



Summary of Climate Trends

The following table summarizes the climate trends expected in coastal communities in the Western U.P. The information on this table comes from a variety of data sets including the Great Lakes Integrated Sciences + Assessments Center and the Lake Superior Climate Adaptation and Implementation Plan.

Observed climate and coastal changes in the Western U.P.	Recent Events
Warmer temperatures overall with periods of drought in the summer	4/12/2002 – Extensive flooding caused by record snows in February and March followed by record-high temperatures in the 70s and 80s, and 2 inches of rain. Total damages topped \$18 million in the region.
Warmer temperatures in Lake Superior, inland lakes, and rivers	5/11/2003 – Rainfall exceeded 4.5 inches and flooded downtown L’Anse and many areas of the County.
Spring arriving earlier and generally shorter winters	9/24/2010 – As a result of heavy rain, the Sturgeon River overflowed at Halonen Road seven miles northwest of Baraga.
Increased number and severity of rain events, even in the winter	Late April 2013 – Rapidly melting snow caused extensive flooding, with the Sturgeon River slightly exceeding flood stage. In the Village of Baraga, the flooding caused failure of a major culvert, with a reconstruction cost of \$60,000 to \$80,000.
Less ice cover on Lake Superior causing stronger and taller waves	January 2015 – About 1/3rd of the Keweenaw Peninsula’s FJ McLain State Park closed as a result of coastal erosion.
Less predictable snowfall, with snow pack staying on the ground for fewer days	July 2016 – Severe storms in the Western U.P. caused straight line winds up to 90 mph and caused extensive damage to infrastructure throughout the area.
Increased occurrences of flooding, and shoreline erosion	

Recent Events

The observed changes to climate and coastal areas in the Western U.P. will have many impacts including severe storms, coastal erosion, and flooding. The recent events listed on the table on this page are chronicled in the Baraga County Hazard Mitigation Plan and are consistent with the events likely experienced as a result of climate and coastal variability.



3. KEY ISSUES IN BARAGA TOWNSHIP

Key Issues in Baraga Township

Chapter 2 described some of the major changes expected in Baraga Township and the Western U.P. in the future. This chapter attempts to answer the question, “What do these changes mean for Baraga Township?” The table on the next page identifies the high-risk climate impacts likely in Baraga Township, as organized by sector.

Defining Risk and Vulnerability

Climate adaptation experts define risk as a measure of both likelihood and impact. In other words, *likelihood*, or the probability of an event occurring, can be evaluated separately from the *impact*, or consequence, of an event occurring. An event may have little chance of ever happening but might be catastrophic if it does occur. This would be an example of an event with low likelihood but high impact. The table on the next page summarizes climate impacts by sector that have either moderate or high risk, which can mean either moderate to high likelihood or moderate to high impact.

The particular impacts discussed in depth in this report were classified as moderate to high, in most cases, by stakeholder feedback gathered during the process to develop this report. Most of these risks match those identified in the Lake Superior Climate Adaptation, Mitigation, and Implementation Plan completed for the region in 2014 by the Superior Watershed Partnership.

In addition to understanding the severity of risk associated with a climate impact, it is also helpful to think about how vulnerable the community is to a particular climate event. In general, vulnerability is defined as a measure of both sensitivity and exposure. *Sensitivity* refers to the degree to which a community or certain segments of a community could be impacted by an event, while *exposure* refers to hazards in the natural or built environment. Vulnerability occurs when the environment is more susceptible to extreme weather and where more sensitive populations live. This chapter describes how well the Baraga community can cope with moderate- or high-risk climate impacts.

Risk

The table on the next page summarizes climate impacts by sector that have either moderate or high risk for the Baraga community.

Vulnerability

This chapter describes the ways in which the Baraga community may be particularly vulnerable to the moderate-to-high risks identified on the next page.



Moderate to High Risk Climate Impacts By Sector for Coastal Western U.P.

Plants and Animals	Water Management	Public Services
<ul style="list-style-type: none"> Habitats for many species will shrink and move farther north Cold-water fish may decline; warm-water fish may increase Change in forest composition; decline in species like jack pine and birch New species may become established in the area such as turkey, ticks, and a variety of birds Increased risk of invasive species, pests, and diseases Habitat fragmentation may increase, disconnecting vital habitat and migration corridors Changes in wetlands, including changes in water temperature, seasonality, and habitat Increased risk of wetland habitat loss to erosion and flooding Declining seabird populations due to damaging coastal waves and eroding beach habitat Possible declines in particular fish species like whitefish due to declining ice cover 	<ul style="list-style-type: none"> Increased runoff may cause chronic flooding and water quality concerns Septic systems may be damaged from increased precipitation, triggering water quality and human health concerns Wetland health may decrease, reducing flood control and habitat 	<ul style="list-style-type: none"> Wildfire risk may increase in the summer and spring, requiring extra capacity and resources for prevention and firefighting Increased need for emergency shelters with backup generators Increased demand for emergency response, flooding rescue, and recovery assistance Greater risk of damage to critical facilities like utilities, power generation, and water supply lines
	<h3>Human Health</h3>	
	<ul style="list-style-type: none"> Increased risk of water-borne, respiratory, and vector-borne disease as a result of flooding Wildfire smoke, severe storms, and high temperatures may exacerbate existing health problems in vulnerable populations like the elderly and disabled Increase in health problems like asthma and allergies Increased precipitation can pollute public water supplies and cause disease Increasing air temperatures may stress populations that lack access to air conditioning 	<h3>Infrastructure</h3> <ul style="list-style-type: none"> Increased stress on roads, bridges, and culverts caused by flooding and fluctuating temperatures Transportation routes may require relocation as a result of increased coastal erosion Power outages and communication interruptions may become more common
<h3>Economy</h3>		
<ul style="list-style-type: none"> Longer summer growing season, good for tourism and agriculture Uncertain snowfall may result in a declining winter tourism industry Energy costs may increase in the summer due to air conditioning; costs may decline in mild winters 	<ul style="list-style-type: none"> Cold-water fishing may decrease; warm-water fishing may increase Increase in hunting opportunities of deer and turkey Birding opportunities may be less reliable and overall bird diversity may decrease 	<ul style="list-style-type: none"> Fluctuating lake levels may make navigation more difficult Changes in tree species and forestry may mean shifts in timber and logging Tourism is likely to increase as opportunities for clean water recreation decline elsewhere



Key Vulnerabilities in the Baraga community

The following section provides additional information on the moderate-to-high risks for each sector and ways in which the Baraga community may be particularly vulnerable to climate variability. Recommendations for action are included in the next chapter.

Plants and Animals

The Baraga community is well known for its abundance of flora and wildlife. It is important, therefore, to recognize the challenges that climate trends will pose for forest and wildlife management in the future and what changes are likely to occur in the region. The information in this section comes primarily from the Michigan Department of Natural Resources Forest Management Plan for the Baraga Division as well as from stakeholder discussions with wildlife and aquatic biologists and other experts.

FOREST MANAGEMENT

The types of trees in the Western U.P. are likely to change in the future as a result of climate variability. The Baraga Plains, as defined by the DNR, is about 12,200 acres and is mostly contiguous, with jack pines, aspen, and grass openings comprising the majority of the vegetative cover. Some of the DNR forestlands in and near Baraga Township are managed for timber products and recreation. The climate impacts identified on the previous page may have a number of ramifications on forest management in the Western U.P. overall, including:

- Increased soil erosion and storms may compromise the ability of forest managers to access areas of the forest
- Increased salvage cuts may be necessary as a result of increased tree mortality/stress
- Pest management will become even more important as warmer temperatures and fewer inches of snow pack may facilitate insect growth and migration

The projected impacts of climate change on forest type, distribution, and health are significant, especially in areas like the Western U.P. that have a strong cultural, economic, and recreational connection to forestlands. However, it's unclear exactly how vulnerable the region's forests are to climate change impacts. The Michigan DNR has qualitatively assessed the region's ability to cope with negative climate change impacts.

Changing Trees

Due to shifts in temperature and precipitation, forest conditions are changing. There are a number of tree species expected to decrease in the Western U.P. according to the USDA. These include:

- Balsam fir
- Black ash
- Black spruce
- Northern white cedar
- Paper and yellow birch

There are also a number of tree species expected to increase. These include:

- American beech
- American elm
- Black walnut
- Red mulberry
- River birch
- Silver maple
- White ash
- White oak

For more information, including a complete list of tree species, see the Forest Ecosystem Vulnerability Assessment and synthesis Report online at: <http://www.nrs.fs.fed.us/pubs/46393>



The endangered Kirtland's Warbler uses young jack pines as a primary habitat. Wildfires, once thought to be destructive to the Kirtland's Warbler, are vital to maintaining the Warbler's habitat, as wildfires allow adult jack pines to release their seeds and establish new young pines.

Photo Source: Wikimedia Commons courtesy of Dominic Sherony

There are several ways in which the forests near Baraga are less vulnerable to climate change impacts, including:

- The forest is contiguous, which allows for easier migration and adaptation.
- The region has more exposed bedrock and moraines than other areas in Michigan. Forests that have adapted to such conditions are likely to be more resilient to other changes.
- The forests in the Western U.P. are less reliant on replanting and have greater capacity for natural regeneration than others in Michigan. This means that species may experience less stress overall.
- The region has a lower wildfire risk than other locations generally, which allows easier adaptation and migration. However, the Baraga community has above-average wildfire risk, unlike the rest of the Western U.P.

There are also a number of ways in which the forests in Baraga may be particularly vulnerable to climate change. These include:

- The forests in the Western U.P. are home to many rare and endangered species which are likely to be further stressed by climate change impacts.
- Increased wildfire risk as a result of greater jack pine productivity.
- The region has many hardwood forests which may experience greater productivity but which are particularly vulnerable to drought stress, pests, and disease triggered by climate variability.
- Aspen forests are particularly vulnerable to climate change. The Baraga Plains have a higher proportion of aspen than other areas of Michigan.
- The region overall is more exposed to migrant and invasive species as a result of close proximity to other forest types in Wisconsin and Southern Michigan. New and invasive species threaten forest health by increasing competition and exacerbating existing stressors.

With these factors taken into account, the Michigan DNR has determined a number of steps to manage forests for greater resiliency in the future. There are a number of steps Baraga Township can take to better understand and respond to forest vulnerabilities, as identified in the action plan in the next chapter.



The Baraga State Park is just one of many opportunities to recreate in the area's abundant natural resources and beautiful forests.

Photo Source: Wikimedia Commons courtesy of RoyalBroil



WILDLIFE CHANGES

A number of local groups, including the Baraga Office of the DNR, are seeing changes in wildlife health and distribution as a result of climate shifts and other human activities. The following summarizes some of the expected impacts to wildlife in the area as a result of the Western U.P.'s particular vulnerabilities.

Deer

Less-severe winters in the Western U.P. have a profound effect on wildlife, especially deer. Deer populations tend to be higher after a mild winter than after a severe winter, but excess deer populations can damage forest vegetation and other ecological processes. Deer populations are likely already higher in Baraga than other places in the Western U.P., as the base of the Keweenaw Peninsula is relatively more sheltered from severe weather. Additionally, the abundance of mixed agricultural land in the area likely provides ample food supply.

Ticks

Less-severe winters also allow tick populations to survive year round. Year-round tick populations have increased the risk of Lyme disease in Michigan. A number of counties, including Baraga County, are at potential risk for Lyme disease according to the Michigan Department of Health and Human Services.¹ Year-round tick populations can also cause damage to wildlife. Notably, the moose population in the Western U.P. has declined in recent years partly as a result of severe tick infestations.² Lyme disease also poses a risk to human health, as described later in this chapter.

Birds

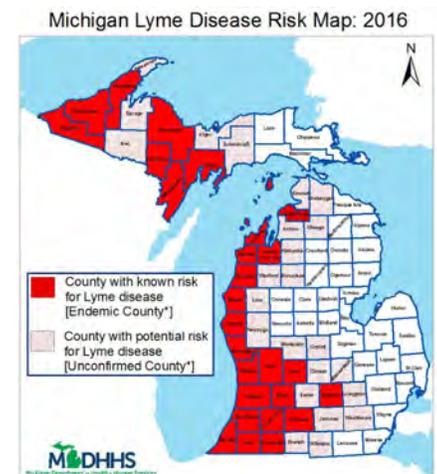
Climate projections show an increase in precipitation events, both in frequency and severity, for the Upper Peninsula. Severe rain events and wetter spring months can have negative impacts on the populations of ground-hatching birds. Chick health and survival can be threatened by storms, floods, rain events, and fluctuating temperatures. Food supply can be strained if grasslands flood and insect populations shrink. Habitat loss through human development and deer overpopulation also pose serious threats to birds in northern areas.

Climate changes also impact the migration patterns and habitats of many birds that depend on particular vegetation and temperatures. Earlier onsets of spring and changes in forest distribution have caused birds such as the Black-throated Blue Warbler and the Rose-breasted Grosbeak to arrive in



White-tailed deer are abundant in the Western U.P. and populations are expected to grow due to milder winter conditions.

Photo Source: Wikimedia Commons courtesy of Jon Sullivan



This map is produced by the Michigan Department of Health and Human Services and shows the counties where ticks infected with Lyme disease have been found (dark red) and counties with potential risk. Baraga is listed as a county with potential risk for Lyme disease.

¹ http://www.michigan.gov/emergingdiseases/0,1607,7-186-25890_26143-95445--,00.html

² <http://www.freep.com/story/news/local/michigan/2015/03/17/survey-moose-population-decline-michigan/24915125/>



Whitefish are a popular Lake Superior export and generate the greatest income for Great Lakes fisheries. Whitefish is one example of a fish that may have trouble adapting to rising water temperatures. A number of groups, including Michigan Sea Grant, have been working on restoration projects to stabilize whitefish populations in Lake Superior.

Photo Source: Michigan Sea Grant

the Upper Peninsula about three weeks earlier than in the 1960s.³ Earlier springs also mean insects hatch too soon before migratory birds like warblers, tanagers, thrushes, and flycatchers arrive.

Fish

Warming waters and severe storms have an impact on fish survival. Less ice cover on Lake Superior may have a negative impact on some species like whitefish, whose eggs survive best in waters protected from windy winter storms by a thick layer of ice. In addition, warming rivers and streams may make it more difficult for cold-water fish, such as trout, to survive. Warming water makes it easier for invasive, predatory fish like the sea lamprey to survive, further threatening trout and other cold-water fish like whitefish.

Water Management

A severe storm or flooding event has a number of effects on property, infrastructure, and human health. Each of these are implications of climate variability that the Baraga community may be particularly vulnerable to. Map 1 at the end of this document shows the areas currently identified as having high flood risk according to the Federal Emergency Management Agency. These are areas where the environmental exposure, one component of vulnerability, is likely higher than other areas in the Township.



Sea lamprey are an example of a warm-water, invasive, predatory fish that is becoming more common in the Great Lakes. Sea lamprey prey on lake trout, salmon, whitefish, and others.

Photo Source: NOAA Great Lakes Environmental Research Laboratory

THREATS TO WATER QUALITY

As snow melts and rain falls onto impervious surfaces like roads and buildings, toxins can be flushed into streams, rivers, and lakes. These toxins can trigger water quality concerns that are avoided when excess water is given the opportunity to naturally percolate into the ground. Chronic flooding can even influence the water quality of public drinking water systems.

Increasing precipitation can also strain septic systems and increase the likelihood of septic failures. Leakages from septic systems can pollute nearby wells and water bodies. However, there is no septic code in Michigan that requires systems to be inspected for quality, and very few local communities have the knowledge to gauge whether septic systems are negatively impacting water quality.

THREATS TO PUBLIC HEALTH

Rain events and severe storms can cause health problems in the immediate and long term. During a flood event, people are at risk of injury and drowning caused by landslides, deep floodwaters, or other dangers. Rerouting traffic from washed-out roads and rescuing people trapped in cars or buildings can

³ <http://www.audubon.org/sites/default/files/documents/gwandbirds.pdf>



overwhelm the capacity of emergency responders. In the long term, people can be susceptible to shock, emotional stress from loss or injury, and disease or infection resulting from contact with polluted flood waters, mold exposure in damaged homes, and water-borne diseases.

WETLANDS

As temperatures rise and water warms, shallow wetlands may evaporate or shrink and the quality of habitat in the wetlands may decline. Wetlands provide a number of benefits, including flood absorption, carbon storage, and vital habitat for many plants and animals. A loss of wetlands threatens the health of many species of waterfowl, amphibians, and even mammals like moose that depend on aquatic plants. Wetlands in the Baraga community likely provide erosion control benefits as well, by helping to temporarily hold and slowly release flood waters caused by severe storms and high intensity waves. However, an increase in the number and intensity of storms may threaten wetland health, as storms may deposit silt and sedimentation into some wetlands.

Human Health

A number of the climate impacts described in this chapter have direct and secondary impacts on human health. Climate impacts will pose new threats to humans including Lyme disease, new allergens due to changing plant communities, and an increased risk of heat stress due to warming temperatures. Increases in the number of intense severe storms and heavy rains provide more opportunity for vector-borne and water-borne disease, while flooding can cause mental and physical distress and injury. Pollution to air and water caused by wildfires, severe storms, and rising temperatures can trigger asthma and other health problems in vulnerable populations like the elderly and the disabled.

Rising temperatures may put residents of the Upper Peninsula at increased risk of heat stress. This is particularly problematic as most residents of the Upper Peninsula are not accustomed to extreme heat, do not live and work in air-conditioned environments, and may not recognize the signs of heat stress.

Researchers who study the impacts of climate change on human health have found that several groups of people tend to experience the most harm from an extreme weather event. The following populations are considered relatively more sensitive, one element of overall vulnerability.⁴ Sensitive populations include:

Damaging Effects of Flooding

In addition to damage to properties and infrastructure, flooding poses a threat to human health and safety. The Michigan Department of Health and Human Services' Climate Health Adaptation Program has identified a number of public health concerns that result from severe flooding, including risk of water-borne diseases, ongoing water quality concerns, and mental health concerns during flood recovery. Baraga Township leaders should be aware and empowered to address these challenges with educational and policy tools, as discussed more in Chapter 4.



Wetlands provide many benefits including flood control, habitat, and carbon storage. Michigan's coastal wetlands are of special importance. Unfortunately, many of the state's wetlands have been filled in for development or agriculture.

⁴ Sensitive populations and vulnerability assessment methodology are based on a University of Michigan report: <http://graham.umich.edu/media/files/ClimateChateActionDetroit.pdf>



Healthcare buildings, like the Baraga County Memorial Hospital, are key facilities for vulnerable populations in times of emergency.

Who is more sensitive to climate impacts in Baraga Township?

The sensitivity map (Map 2) attempts to capture where more sensitive populations live in the Township. Emergency managers, township officials, and community service organizations should work together to identify emergency response strategies to communicate with and assist vulnerable populations during or after an extreme weather event.

- Residents 65 years of age and over - Studies indicate that older age is associated with higher hospital admission rates during heat waves and other emergencies.
- Residents living alone - Although living alone is not necessarily a risk, people who are socially isolated are at greater risk during an extreme weather event. Isolated people may not be able to recognize symptoms of illness and may fail to take proper action.
- Minority populations - Studies also suggest that minorities are at greater risk during extreme weather events. In many communities, this may be true for various reasons, including less reliable access to health care, transportation, and other social supports needed to reduce exposure. In other words, a correlation generally exists between non-white populations and increased sensitivity to extreme weather.
- Populations in poverty - Living in poverty is associated with increased heat-related morbidity, lower health outcomes, and mortality as a result from extreme weather. In general, persons living at or below the poverty line have less access to resources, like air conditioning and health care. This can limit a person's access to relief from an extreme weather event.
- People over 25 with less than a high school education - Similarly, studies demonstrate a link between low educational attainment and lower health outcomes.

Map 2 attempts to identify areas where these more sensitive populations live in the Baraga community. There are a number of areas within the Baraga community with relatively high concentrations of sensitive populations. This does not mean residents in areas with higher overall sensitivity are in immediate danger. Rather, Map 2 provides planning officials a new way of identifying areas where extreme weather could present serious problems for a significant number of citizens. In general, the map shows that the populations in some areas are relatively more sensitive to extreme weather than others.

Map 2 shows where the highest concentrations of the five populations listed above live at the Census Block Group level. It is important to note that this information came from the United States Census Bureau's American Community Survey data, collected on a rolling basis from 2009 to 2013. This data may count some people twice, such as in cases where a person is both a minority and over 65. This may overestimate the severity of the sensitivities in some locations. On the other hand, there are other factors that could increase an individual's risk of heat-related illness that were not mapped in this assessment. Many additional variables could be collected through local surveys or other sources including:



- The degree of social connections among individuals within a community
- Populations with preexisting health concerns like substance addiction, mental illness, or confinement
- Populations who live in overcrowded conditions or tall buildings

A number of recommendations for addressing Baraga’s human health vulnerability to climate change are included in the next chapter, while many of the recommendations in other sectors also have human health benefits.

Public Services

Demand for quality public services may become more difficult to satisfy as a result of climate variability. In particular, an increasing risk of wildfires and more frequent severe storms may strain the capacity of emergency responders and may damage critical infrastructure.

WILDFIRE

Nationwide, the risk of wildfires has increased substantially, often requiring more resources for fire suppression at great financial cost.⁵ The financial cost to suppress and recover from wildfires is burdensome for many local communities equipped with volunteer fire departments and little capital funding for equipment.

The Baraga community is particularly vulnerable to an increased risk of wildfire. According to the Baraga County Wildfire Protection Plan, Baraga County has one of the highest wildfire risks in the State of Michigan, and has a history of wildfires. Unfortunately, climate trends suggest that Baraga County can expect to have drier soils and warmer conditions at certain points of the year, exacerbating conditions suitable to wildfires.

Baraga Township has a number of areas forested primarily by jack pine, a tree species particularly vulnerable to wildfire. Long-term forest projections suggest that jack pines are likely to increase and become a dominant tree type in the future. The Michigan DNR in Baraga is also working in collaboration with the United States Forest Service to increase the amount of land logged for jack pines. This may bring an economic benefit to the region while increasing the amount of land managed for the Kirtland’s Warbler, an endangered bird species. However, expansion of jack pine forests has a secondary effect of increasing the risk of wildfire.

One component of wildfire exposure is the Wildland-Urban Interface, or WUI. The WUI is the area between development and unoccupied land, where



In many ways, wildfire is a natural process that promotes a healthy forest. The photo above is an example of forest recovery shortly after the 2010 Meridian Forest Fire in Crawford County, Michigan. An increased wildfire risk requires control and response when fires threaten homes and businesses.

Photo Source: U.S. Fish and Wildlife Service



An example of the Wildland Urban Interface. Smoke rises in the distance, approaching nearby homes and infrastructure.

Photo Source: U.S. Fish and Wildlife Service

⁵ http://www.ucsusa.org/global_warming/science_and_impacts/impacts/global-warming-and-wildfire.html



Wildfire and Precipitation

It may seem contradictory that wildfire risk is expected to increase along with overall precipitation. However, increases in precipitation are expected to take the form of more severe storms, with periods of drought in between. Drought is an essential contributor to wildfire risk, and a prolonged period of dry conditions can create the right fuel conditions for ignition and a quickly spreading fire. Warmer temperatures also contribute to increased wildfire risk.



Road washouts like the one above occurred throughout the Western U.P. as a result of heavy storms in July 2016.

Photo Source: MLive.com, Gary Jackson

wildfires may pose the greatest risk to human safety. Map 3 shows the areas that where homes and vegetation intermix and interface in the Baraga area. The areas of interface are often at the greatest risk, as properties may be less prepared for wildfire events and less accessible.

Several studies have been conducted to understand Baraga's wildfire risk. Map 4 shows where fire hazards are relatively high, according to the Baraga community Wildfire Protection Plan completed by MSU Extension's Firewise Program. This map also shows the origin and size of previous wildfires. In general, the risk of wildfire appears the greatest in the southern areas of the Township, near the concentrations of jack pine forests managed by the DNR.

EMERGENCY RESPONSE AND WILDFIRES

Wildfires pose a significant challenge to first responders. Evacuation out of residential areas may be constrained in areas that depend on just one or two exit routes. Seasonal homes in the community are at especially high risk, as it can be unclear for emergency responders whether a home is occupied or vacant. Additionally, excess leafy debris and brush around a seasonally-maintained home can increase risk of damage from fire.

Wildfires also pollute the air and trigger respiratory problems that may require hospital visits in both vulnerable and healthy populations. Additionally, wildfires actually increase the future risk of flooding as less vegetation remains to absorb rain water.

The Baraga community can take a number of steps to address its high and increasing wildfire risk. These steps are listed in the action plan in the next chapter.

Infrastructure

Increases in temperatures, precipitation, and erosion risk all pose threats to infrastructure in the Baraga community. Infrastructure includes transportation networks like roads and bridges as well as utilities and communications infrastructure like power lines and phone lines.

The key transportation route from Houghton to Marquette runs through the Baraga community, and much of the region's critical infrastructure is within the County, including railways, bridges, water supply lines, water treatment facilities, hospitals, and power generation and transmission facilities.

ROADS AND BRIDGES

While roads are designed to withstand some fluctuation in temperature, sustained periods of high temperatures can cause road surfaces to soften



and expand, leading to damaging potholes and rutting, especially on bridges.⁶ Meanwhile, heavy rains can weaken and erode the soil and culverts, causing further damage to roads and bridges. Chronic flooding shortens the lifespan of the road surface, requiring costly reconstruction and rebuilding of infrastructure.

Fluctuating temperatures coupled with increased precipitation, most notably during the transition from the winter to spring season, create difficult road conditions. During this period, snow may temporarily melt and cause runoff to pool on low-lying roads. Evening temperatures or a front of colder air can cause this standing water to refreeze, putting extreme stress on road surfaces and bridges.

HIGH RISK EROSION AREAS

Erosion can cause roadbeds to give way and damage shoreline and riverine infrastructure. Costly reconstruction and relocation of roads, especially high-volume local roads, can result in a financial burden to communities.

Several areas along the shoreline in the Baraga community are already designated as High Risk Erosion Areas by the Michigan Department of Environmental Quality. These areas have a history of eroding by at least one foot per year over a 15-year period. Development in a High Risk Erosion Area must be a certain distance from the shoreline in order to protect structures from erosion for a period of 30 to 60 years. The required setbacks and the High Risk Erosion Areas in the Baraga community are shown on Map 5 and vary depending on the size and type of new construction.

However, because the High Risk Erosion Areas are based on historical erosion and do not consider recent and projected increases in severe storms, the High Risk Erosion Areas are likely underestimated. In fact, severe erosion is reported along the Baraga shoreline near Assinins Church, the Cemetery along US-41, and in several places near Lakeshore Road. The 2013 Baraga County Hazard Mitigation Plan identified shoreline erosion as a moderate to extreme risk in Baraga Township.

UTILITIES AND COMMUNICATIONS

In rural communities, a power or communication outage can be especially damaging. Emergency services may not be notified or capable of responding to an emergency, such as a wildfire, severe storm, or extreme heat event. Vulnerable populations, such as the elderly, disabled or poor, may not be able to access necessary resources and services like grocery stores or health care. Shelters may not be universally accessible or familiar to residents, and often

Effects of Erosion

Erosion is a natural process and most shoreline property owners understand that the dynamic coast changes year to year. Climate change, however, is causing stronger storms on Lake Superior and may exacerbate erosion rates. Erosion can have a number of negative impacts that communities should be aware of, including damage to properties and people, degradation of fish spawning areas and natural habitat, and decreases in water quality as septic systems are damaged and pollutants in runoff are carried to water bodies.



Downed power lines are a common occurrence during a severe wind or rain storm.

Photo Source: Wikimedia, Courtesy of Arlington County

⁶ <https://www3.epa.gov/climatechange/impacts/transportation.html#landtransportation>



Snowmobiling is a popular draw for tourism in the Upper Peninsula. Unfortunately, it seems likely that climate change may reduce the number of days each year with snow on the ground in the Western U.P. However, other places are sure to have even less snow than the Western U.P.

Photo Source: Michigan.org, Courtesy of GoSnowmobiling.org



Water-based recreation, like kayaking and paddling, are becoming increasingly popular in the Great Lakes region, and the Upper Peninsula will have a longer summer season as a result of climate change.

lack backup electrical power. The likelihood of power outages is particularly high in rural areas, where miles of sprawling utilities through forested areas are vulnerable to damage from high winds and downed trees. The time for utility companies to identify and fix a problem can be lengthy, and outages are common both in winter months and summer months due to storms.

Economy

The Western U.P. is largely dependent on tourism and natural resources for jobs and industry. Therefore, the local economy may be particularly vulnerable to a changing climate.

TOURISM

Changes in temperature and precipitation may mean a longer summer tourism season in the Western U.P. and a less reliable winter tourism industry. As spring begins earlier and the first frost occurs later in the year, the summer season may extend and hunting, birding, mountain biking, camping, hiking, and other forms of recreation may be possible for more days each year. However, increased rain events and severe storms may mean the spring season is fraught with rainy days and less predictability.

Winter tourism, including snowmobiling, skiing, ice fishing and other winter activities, relies on continuous days of frozen ground and snow pack. Climate impacts are likely to reduce the number of days with snow on the ground in the Western U.P. by as many as 25 to 50 days each year.⁷ However, it is certain that even less snow will fall in southern areas, which may give the Western Upper Peninsula an advantage in attracting winter tourism.

WATERFRONT TOURISM

As drought conditions are expected to worsen in many places across the Sun Belt and Southwest U.S., the Great Lakes are an increasingly important natural resource and economic driver. Communities across Michigan are embracing their waterfronts through investments in shoreline amenities like kayak launches, bike trails, and waterfront redevelopment projects. Recreational boating, fishing, birding, beach visits, and kayaking help support a \$17 billion tourism industry in Michigan. Increased turbulence on Lake Superior may even be an opportunity for adventure sports like surfing and wind surfing. These activities are already becoming more popular in the Great Lakes region.

Baraga Township could capitalize on changing climate conditions to capture more water-based tourism in the summer months. A number of steps to do so are included in the next chapter.

⁷ Center for Climatic Research, University of Wisconsin-Madison



4. ACTIONS TO BUILD RESILIENCY

Creating an Action Plan

This action plan was created by the Land Information Access Association for Baraga Township as part of the Baraga Township Master Planning Process in 2016. It is important to note that these actions are merely recommended options the community could choose to take, and may not all be suitable for local circumstances in Baraga Township.

The recommendations included in this action plan are grouped by sector. The goals and actions are designed to help Baraga Township address the region's vulnerabilities and are derived from a variety of sources including:

- Community feedback gathered at the Resiliency Workshop and Open House
- Stakeholder feedback from key leaders and organizations in the Western U.P.
- The Lake Superior Climate Adaptation, Mitigation, and Implementation Plan conducted by the Superior Watershed Partnership
- Other regional planning documents including studies and materials produced by the Keweenaw Bay Indian Community, the Michigan Department of Natural Resources, the U.S. Forest Service's Northern Institute of Applied Climate Science, and others

The Baraga Township Planning Commission should review this action plan and include the appropriate actions in the Master Plan and other Township policies.

What is Resiliency?

Resiliency is the ability to withstand, adapt to, and recover from changing conditions. Resilience is an umbrella term for the planning strategies needed to help communities develop the necessary capacity to address new challenges. The goals and action steps included in this Action Plan are designed to help the Baraga community be resilient to the impacts of a changing climate.

A Regional Approach

Many of these actions require regional partnerships and collaboration with neighboring communities. The Keweenaw Bay Indian Community, the Village of Baraga, and the Superior Watershed Partnership are natural allies in implementing many of the action steps in this chapter.

Actions to Build Resiliency in Baraga Township

Sector		
Plants and Animals		
Climate Impacts	Goals	Actions
<ul style="list-style-type: none"> Habitats for many species will shrink and move farther north Cold-water fish may decline; warm-water fish may increase Change in forest composition; decline in species like jack pine and birch New species may become established in the area such as turkey ticks, and a variety of birds Increased risk of invasive species, pests, and diseases Habitat fragmentation may increase, disconnecting vital habitat and migration corridors Changes in wetlands, including changes in water temperature, seasonality, and habitat Increase risk of wetland habitat loss to erosion and flooding Declining seabird populations due to damaging coastal waves and eroding beach habitat Possible declines in particular fish species like whitefish due to declining ice cover 	<ul style="list-style-type: none"> Maintain healthy forests. 	<ul style="list-style-type: none"> Build relationships with state and federal agencies like the DNR and U.S. Forest Service to identify appropriate forest adaptation projects to fund and support. Ban the clear-cutting of forested sites for residential and commercial development. Instead, create standards for preparing a forested site for development. Encourage large landowners to complete a forest management plan through the U.S. Forest Service's Northern Institute of Applied Climate Science.
	<ul style="list-style-type: none"> Protect the habitats of vulnerable plants and animals. 	<ul style="list-style-type: none"> Work with regional partners such as the Keweenaw Bay Indian Community and Baraga County to map cold-water streams and other riparian corridors. Protect riparian streams from development through vegetated buffer requirements and setbacks. Collaborate with environmental groups to protect cold-water streams with tree plantings, bank stabilization, or other efforts. Evaluate existing culvert and road infrastructure for its impact on aquatic organism passage. Remove any barriers currently in place. Reduce landscape fragmentation by promoting cluster development and open-space preservation.
	<ul style="list-style-type: none"> Minimize damage from invasive species. 	<ul style="list-style-type: none"> Create educational materials to distribute to residents on recognizing and eradicating invasive plant species. Work with local conservation organizations to map the locations of invasive species and target resources.

Actions to Build Resiliency in Baraga Township

Sector		
Water Management		
Climate Impacts	Goals	Actions
<ul style="list-style-type: none"> Increased runoff may cause chronic flooding and water quality concerns Septic systems may be damaged from increased precipitation, triggering water quality and human health concerns Wetland health may decrease, reducing flood control and habitat 	<ul style="list-style-type: none"> Protect water quality in the Township by reducing stormwater runoff. 	<ul style="list-style-type: none"> Pilot water retention projects in the Township on public properties. Examples include grey water storage and reuse, rain barrels, and green roofs. Adopt site plans requirements that reduce or eliminate allowable runoff. Encourage green infrastructure on private properties through programs and incentives, such as a stormwater utility fee rate structure. Pilot the construction of pedestrian and biking trails with pervious pavement, especially near open drains and shorelines. Prioritize open-space protection for areas that are contiguous, provide flood protection, and filter stormwater.
	<ul style="list-style-type: none"> Protect water quality in the Township by reducing the risk of septic contamination. 	<ul style="list-style-type: none"> Support County policies and adopt Township policies that require a septic system to be inspected at the time of transfer.
	<ul style="list-style-type: none"> Protect water quality, habitat, and reduce flooding risk by protecting wetlands. 	<ul style="list-style-type: none"> Work with local partners to map and prioritize wetland areas for restoration based on vulnerability to flooding, erosion, siltation, degradation, and invasive species. Buffer development from wetlands by adopting a local wetland protection ordinance.
	<ul style="list-style-type: none"> Improve planning for water quality in the region. 	<ul style="list-style-type: none"> Collaborate with regional entities to undergo a watershed management planning project to guide restoration efforts.

Actions to Build Resiliency in Baraga Township

Sector

Human Health

Climate Impacts	Goals	Actions
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<ul style="list-style-type: none"> Increased risk of water-borne, respiratory, and vector-borne disease as a result of flooding Wildfire smoke, severe storms, and high temperatures may exacerbate existing health problems in vulnerable populations like the elderly and disabled Increase in health problems like asthma and allergies Increased precipitation can pollute public water supplies and cause disease Increasing air temperatures may stress populations that lack access to air conditioning 	<ul style="list-style-type: none"> Collaborate on and promote public education and awareness of climate change impacts. 	<ul style="list-style-type: none"> Coordinate with public schools to incorporate environmental education about health risks, such as tick protection. Create and build on recreational opportunities that bring diverse groups together. Develop a guidebook with educational information to homeowners living within sensitive landscapes. Include data and information on the Township website and other communication methods to ensure residents are aware of warnings and resources. Promote healthy lifestyles through Township programs that acknowledge the growing health impacts of climate change, such as childhood asthma or Lyme disease awareness events.
	<ul style="list-style-type: none"> Integrate public health goals into local decision making. 	<ul style="list-style-type: none"> Collaborate with the Health Department to assess the readiness of local emergency response, public health, social services, communications, and energy plans to cope with climate changes. Consider the public health impacts of development, perhaps by requiring a Health Impact Assessment for Planned Development projects. Participate in county-wide emergency response and hazard mitigation planning processes.
	<ul style="list-style-type: none"> Allocate services and programming toward sensitive populations including those who are low-income, elderly, or disabled. 	<ul style="list-style-type: none"> Provide transportation services to amenities, healthcare, and essential services. Partner with local leaders in public health, public safety, and social services to investigate the impacts of severe storms, extreme heat, and coastal hazards. Use information about where vulnerable populations live when allocating new emergency shelters, community gardens, parks, or other amenities in order to relieve stress in vulnerable populations.

Actions to Build Resiliency in Baraga Township

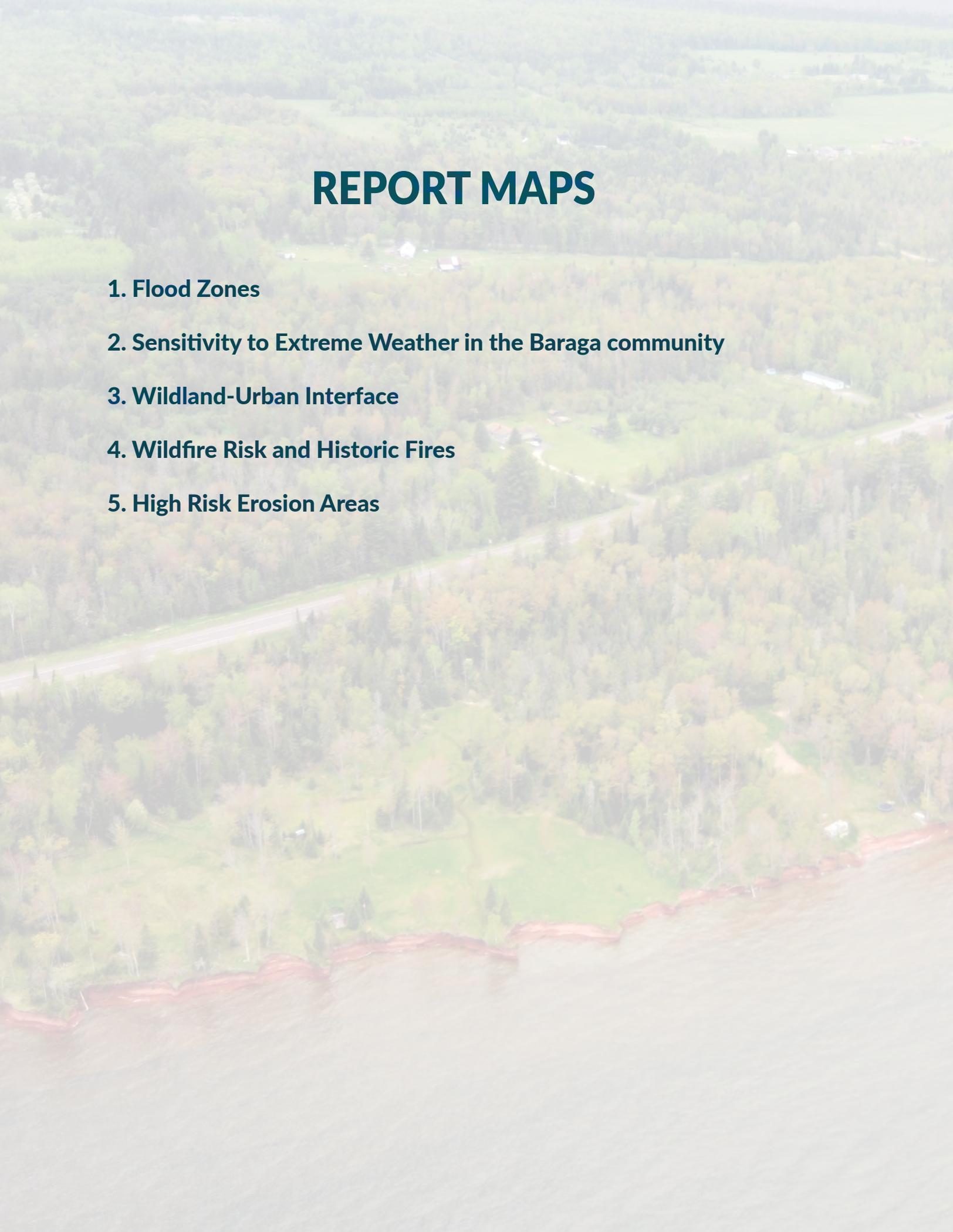
Sector		
Public Services		
Climate Impacts	Goals	Actions
<ul style="list-style-type: none"> Wildfire risk may increase in the summer and spring, requiring extra capacity and resources for prevention and firefighting Increase need for emergency shelters with backup generators Increased demand for emergency response, flooding rescue, and recovery assistance Greater risk of damage to critical facilities like utilities, power generation, and water supply lines 	<ul style="list-style-type: none"> Prepare for increased wildfire risk in and near the Township. 	<ul style="list-style-type: none"> Update the Baraga community Wildfire Protection Plan using information such as available water supply, adequacy of road systems for access, and the capacity of each fire department. Create a Wildfire Hazard Overlay Zone for Baraga Township in areas with the highest risk. Amend the Zoning Ordinance to require that applicants seeking building permits in the Wildfire Hazard Overlay Zone be provided educational materials on the area's wildfire risk and take steps to reduce the risk. Implement road, driveway, and land-use standards to reduce fire risk. These may include ensuring that fire departments have adequate access to properties and that properties have adequate fuel break lines and defensible space.
	<ul style="list-style-type: none"> Increase capacity for emergency response through effective communications. 	<ul style="list-style-type: none"> Educate the public about new warning systems and response plans. Establish a Reverse 911 automated call-back system in order to notify residents of evacuation or other emergency notices. Implement an early warning system for extreme storms, flooding, heat waves, poor air quality days, and disease outbreak.
	<ul style="list-style-type: none"> Increase emergency management preparations. 	<ul style="list-style-type: none"> Convene collaborative discussions regarding emergency management with many partners. Rehearse emergency management response plans. Recommend changes to the Baraga County Hazard Mitigation Plan that address climate and coastal trends. Designate shelters for extreme cold- and warm-weather events and advertise them to the public, particularly to sensitive populations like the elderly and low-income residents. Equip emergency shelters with backup energy systems, such as generators. Identify alternative routes and modes for transportation during and after an emergency. Ensure large institutions have emergency plans.
	<ul style="list-style-type: none"> Protect critical infrastructure from severe weather damage. 	<ul style="list-style-type: none"> Identify essential services that are located in flood zones or that could be isolated by flooding and work to ensure reliable services.

Actions to Build Resiliency in Baraga Township

Sector		
Infrastructure		
Climate Impacts	Goals	Actions
<ul style="list-style-type: none"> Increased stress on roads, bridges, and culverts caused by flooding and fluctuating temperatures Transportation routes may require relocation as a result of increased coastal erosion Power outages and communication interruptions may become more common 	<ul style="list-style-type: none"> Protect properties from erosion and flooding. 	<ul style="list-style-type: none"> Adopt performance standards to minimize on-site soil and vegetative disruptions, especially in vulnerable coastal areas. Consider creating a Shoreline Protection Zone to require enhanced building standards and greater setbacks in coastal areas. Identify the proximity of coastal development to sensitive habitats and areas with high erosion risk. Consider acquiring areas with the highest risk. In new development along the coastline, consider clustering development in less vulnerable coastal areas.
	<ul style="list-style-type: none"> Reduce stress on transportation and communication infrastructure. 	<ul style="list-style-type: none"> Map and inventory the road damages caused by extreme weather. Identify areas subject to repeated damages. Inventory infrastructure most vulnerable to extreme weather. Identify areas that would allow for the safe burial of power lines to avoid power interruption. Reduce reliance on conventional energy by investing in green building designs and other energy-saving methods on public properties.
	<ul style="list-style-type: none"> Plan for future conditions when building and repairing infrastructure. 	<ul style="list-style-type: none"> Adopt building design standards that better reflect climate conditions, such as the provision of an ice falling zone. Incorporate updated precipitation tables in construction or repair of roads, culverts, bridges, and hydraulic structures.

Actions to Build Resiliency in Baraga Township

Sector		
Economy		
Climate Impacts	Goals	Actions
<ul style="list-style-type: none"> • Longer summer growing season, good for tourism and agriculture • Uncertain snowfall may result in a declining winter tourism industry • Energy costs may increase in the summer due to air conditioning; costs may decline in mild winters • Cold-water fishing may decrease; warm-water fishing may increase • Increase in hunting opportunities of deer and turkey • Birding opportunities may be less reliable and overall bird diversity may decrease • Fluctuating lake levels may make navigation more difficult • Changes in tree species and forestry may mean shifts in timber and logging • Tourism is likely to increase as opportunities for clean water recreation decline elsewhere 	<ul style="list-style-type: none"> • Ensure the sustainability of timber and fishing industries. 	<ul style="list-style-type: none"> • Hold meetings with timber industry leaders in the region to discuss the predicted climate trends and identify management strategies. • Require sustainable forest management plans for any commercial logging. • Work with regional organizations to identify vulnerable breeding grounds for cold-water fish and conduct habitat improvements as feasible.
	<ul style="list-style-type: none"> • Prepare for changes to the tourism industry, including a possible increase in water-based recreation in the summer months. 	<ul style="list-style-type: none"> • Gather information from local businesses and visitor's bureaus to understand the region's tourism capacity and projected growth. • Create a marketing strategy to attract tourists to local businesses. • Adapt winter-based recreation opportunities to year-round opportunities, such as the conversion of snowmobile trails to multi-use trails. • Host community discussions on ways to help local businesses minimize economic losses and take advantage of increased tourism.
	<ul style="list-style-type: none"> • Increase the community's connection to the waterfront. 	<ul style="list-style-type: none"> • Develop and implement a waterfront area plan that includes signage, wayfinding, and other placemaking strategies • Support efforts to construct a biking and multi-use path along the waterfront in the Baraga area. • Strengthen accessibility to the waterfront to meet or exceed ADA standards. • Partner with recreation groups to plan appropriate locations for kayak, paddling, and boat launch areas. • Promote waterfront activities through event and recreation planning.

An aerial photograph of a rural landscape. The foreground shows a body of water with a reddish-brown shoreline. A road runs diagonally across the middle ground, surrounded by dense green and yellowish trees. In the background, there are rolling green hills and scattered houses.

REPORT MAPS

1. Flood Zones

2. Sensitivity to Extreme Weather in the Baraga community

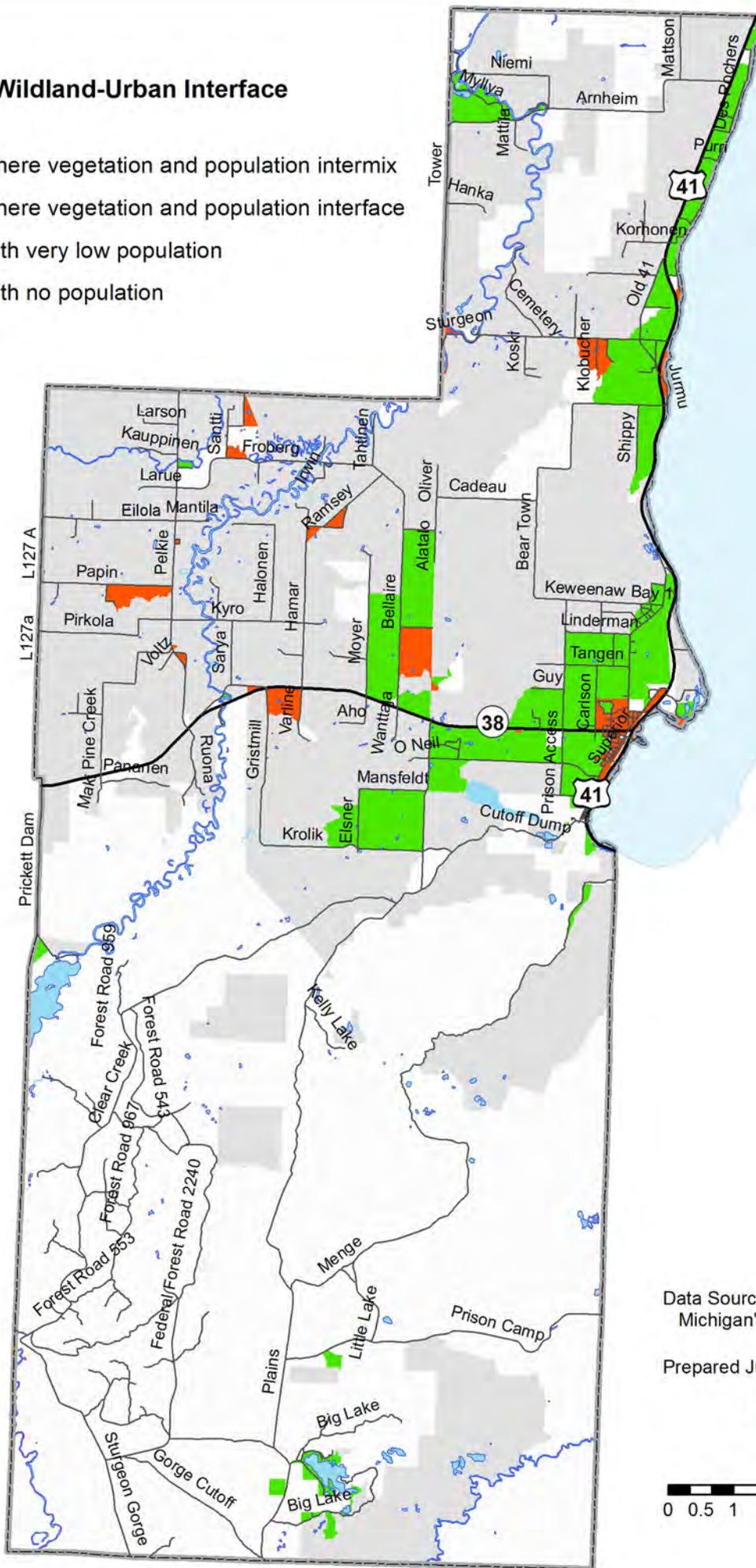
3. Wildland-Urban Interface

4. Wildfire Risk and Historic Fires

5. High Risk Erosion Areas

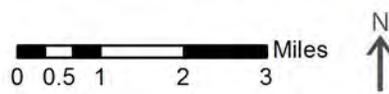
3 - Wildland-Urban Interface

- Areas where vegetation and population intermix
- Areas where vegetation and population interface
- Areas with very low population
- Areas with no population
- Water

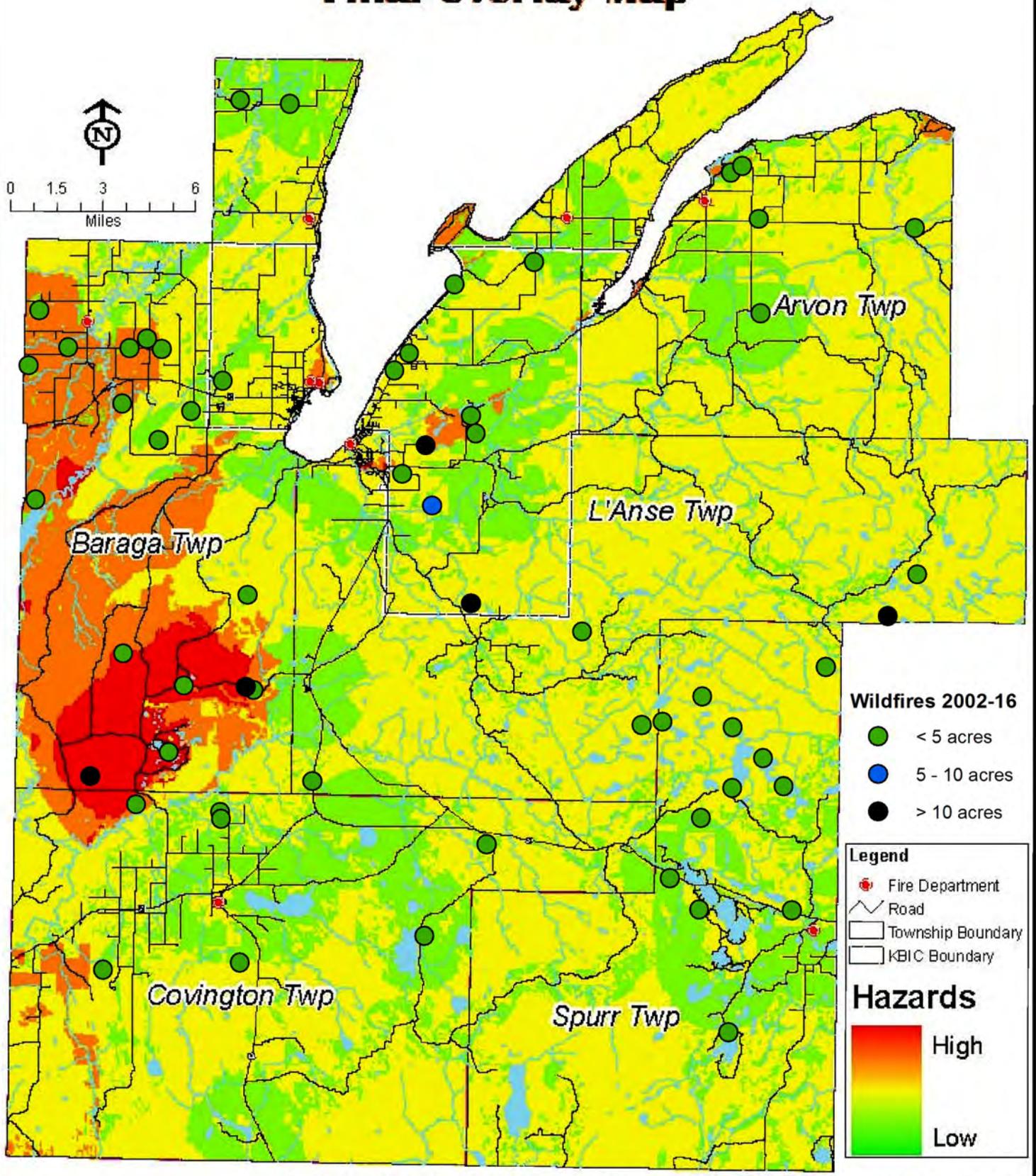


Data Sources:
Michigan's GIS Open Data

Prepared June 2016 by:
LIAA



Community Wildfire Protection Plan Baraga County Final Overlay Map

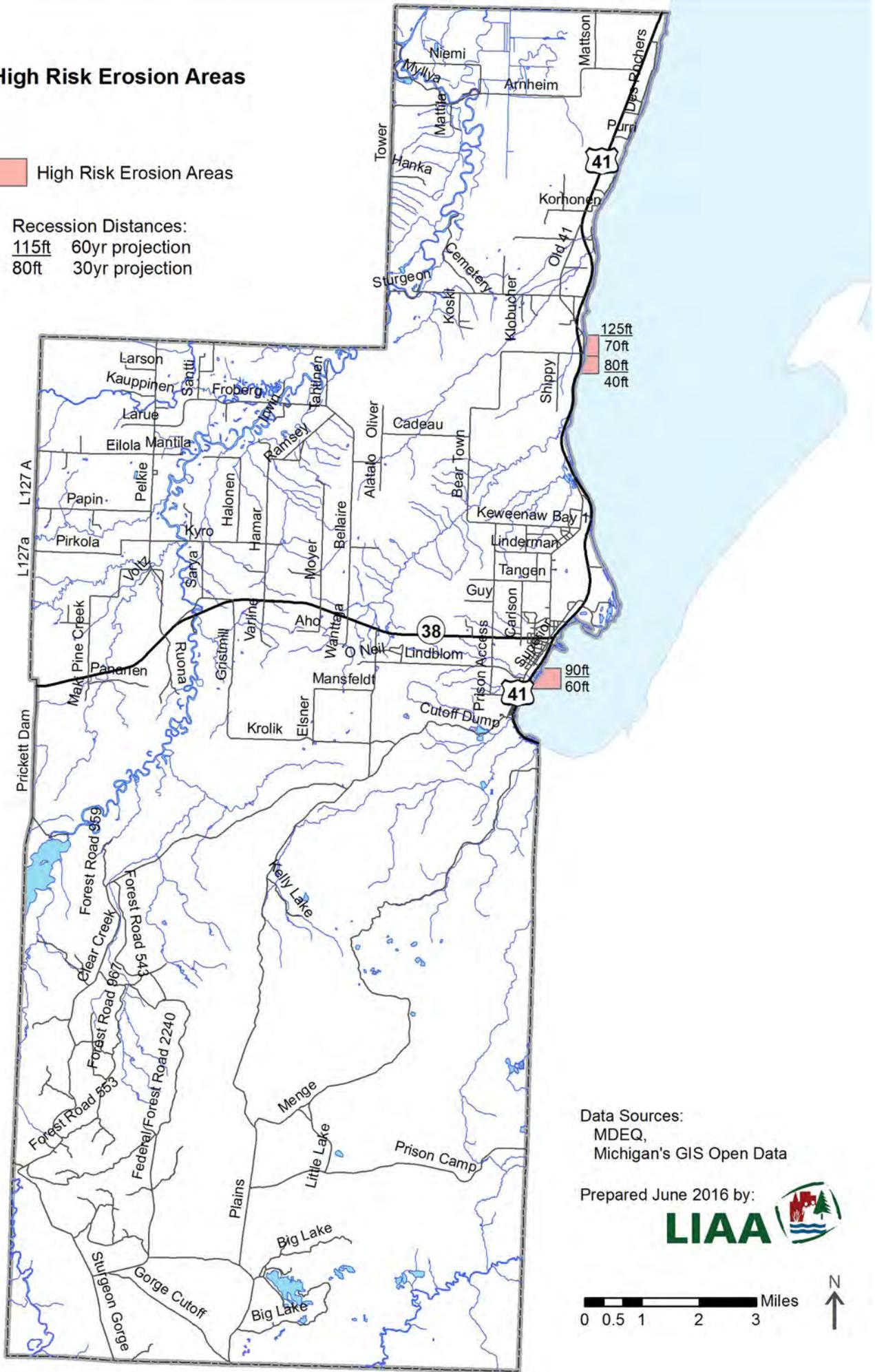


Created by: Ken Marshall, KBIC; Source: Baraga County and Townships, USFS, BIA, MIDNR

5 - High Risk Erosion Areas

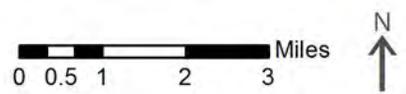
 High Risk Erosion Areas

Recession Distances:
 115ft 60yr projection
 80ft 30yr projection



Data Sources:
 MDEQ,
 Michigan's GIS Open Data

Prepared June 2016 by:



B

APPENDIX

Survey Results



BARAGA TWP.
MASTER PLAN

Report for Baraga Twp. Master Plan

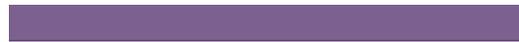
Response Counts

Completion Rate:

100%



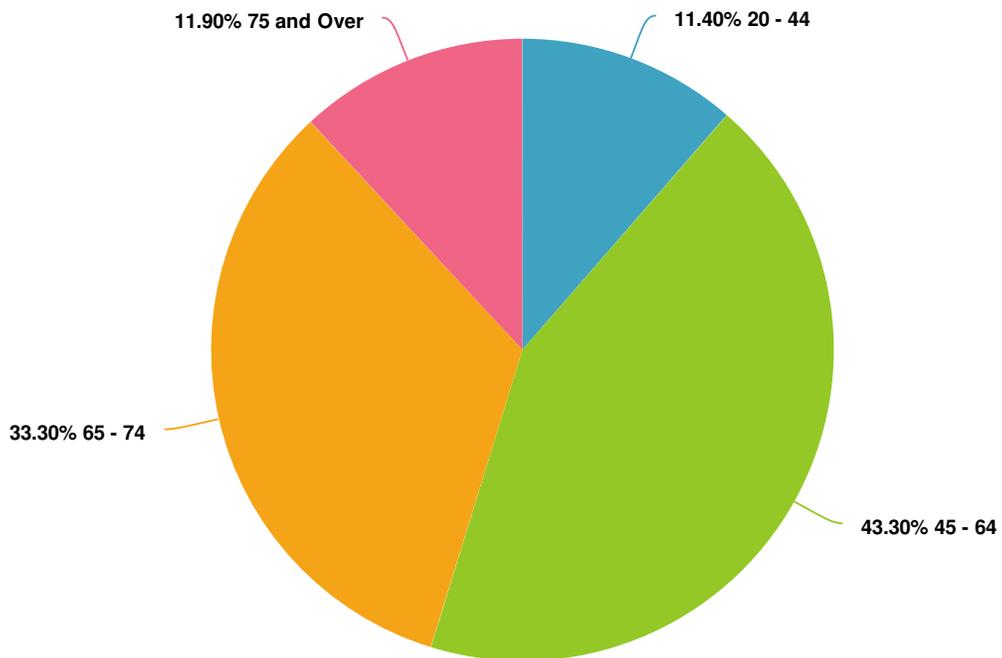
Complete



212

Total: 212

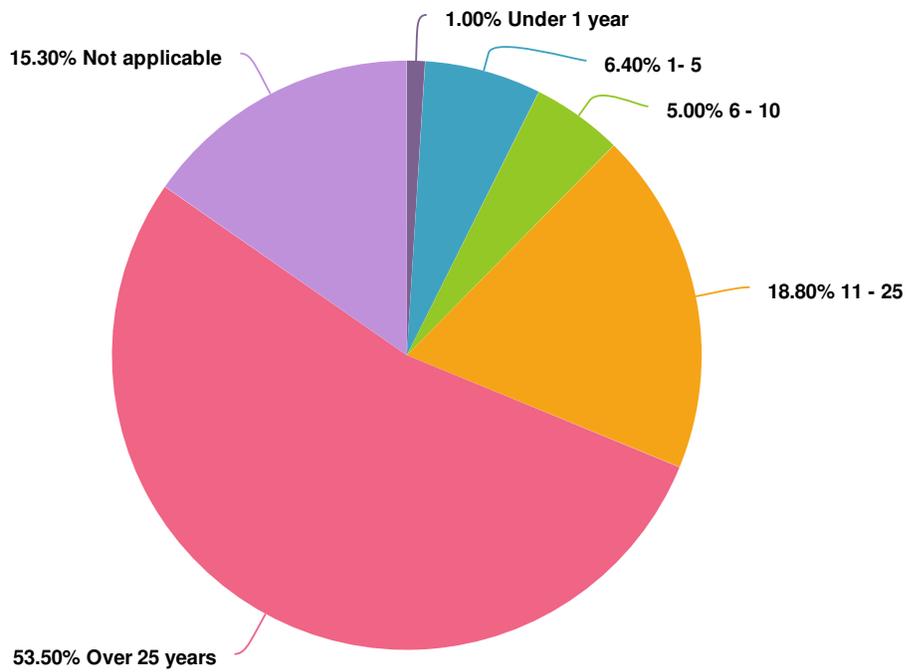
1. What is your age category?



Value		Percent	Responses
20 - 44		11.4%	23
45 - 64		43.3%	87
65 - 74		33.3%	67
75 and Over		11.9%	24

Total: 201

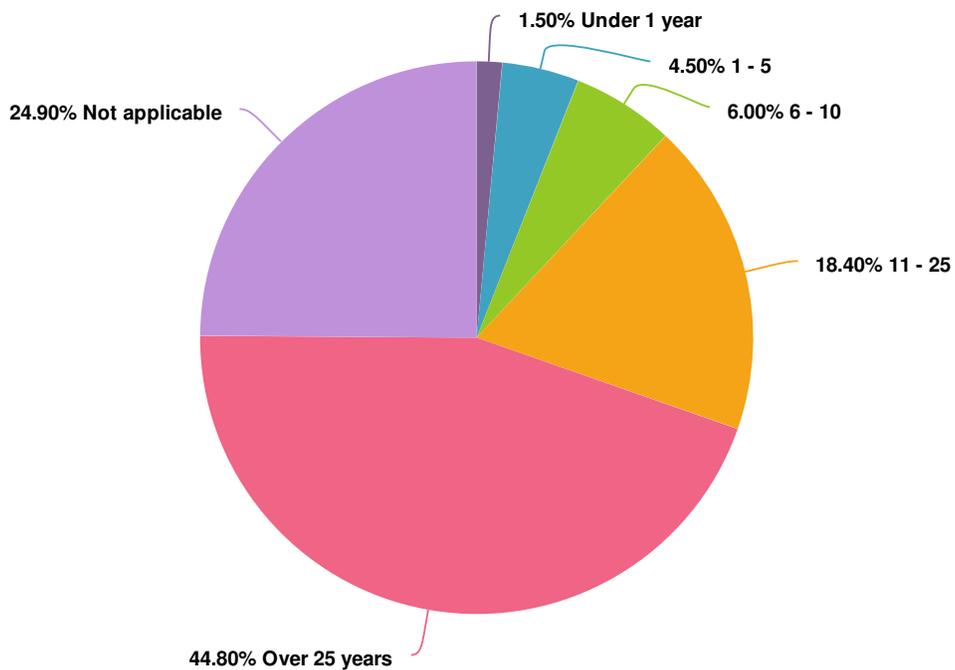
2. How long have you lived in Baraga Township?

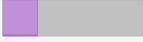


Value		Percent	Responses
Under 1 year		1.0%	2
1- 5		6.4%	13
6 - 10		5.0%	10
11 - 25		18.8%	38
Over 25 years		53.5%	108
Not applicable		15.3%	31

Total: 202

3. How long do you plan to continue living in Baraga Township?



Value		Percent	Responses
Under 1 year		1.5%	3
1 - 5		4.5%	9
6 - 10		6.0%	12
11 - 25		18.4%	37
Over 25 years		44.8%	90
Not applicable		24.9%	50

Total: 201

4. On a scale of 1 to 5, with 5 being very satisfied and 1 being very dissatisfied, how satisfied are you with:

	1 - Very Dissatisfied	2 - Dissatisfied	3 - Neutral	4 - Satisfied	5 - Very Satisfied
Public Service Count	17	18	85	65	10
Appearance of buildings Count	18	62	74	36	5
Sense of community Count	10	30	73	69	14
Road quality Count	28	49	49	61	11
Recreational resources Count	17	28	56	68	26
Natural beauty Count	6	3	12	82	95
Access to natural areas Count	12	14	41	84	45
Community and cultural events Count	10	42	87	41	13
Public Transportation Count	52	42	86	9	4
Entertainment opportunities Count	32	61	75	23	5
Employment opportunities Count	47	69	64	14	3
Sense of safety Count	7	11	58	98	23

5. On a scale of 1 to 5, with 5 being very satisfied and 1 being very dissatisfied, how satisfied are you with: - comments

I am not a resident of the Township. Only a property owner.

Equalize property tax structure to promote recreational property purchase

Better internet service. UP NET is terrible!

"Downtown" Pelkie is disgraceful. Needs some real effort to require at least clan appearance. Blighted.

Building inspector is not very public capable and is extremely rude

Fine entertainment with any artist and museum

I support any industrial or natural development which develop more population.

Count	Response
1	"Downtown" Pelkie is disgraceful. Needs some real effort to require at least clan appearance. Blighted.
1	As a retired senior - many opportunities to stay active and involved in life.
1	Baraga Township doesn't necessarily have the sites or services on the previous page, but they are nearby and accessible in Baraga or Houghton Co.
1	Baraga can do more to promote the Native American Ojibwa culture and to educate the public regarding it.
1	Better access to natural areas along Keweenaw Bay desired safer crossing from the park to the water (across Hwy 41). Perhaps groom the beachfront along the head of the bay to be more inviting and more park like.
1	Better internet service. UP NET is terrible!
1	Building inspector is not very public capable and is extremely rude
1	Dust Control - Black top or put used blacktop down 1 mile in from M-38 on Pine Creek Road (M-38 to Kostamo Rd.)
1	Equalize property tax structure to promote recreational property purchase
1	Family owned summer cottage since 1943 Your goals are all commendable BUT it may be too late to initiate many of them - growth is already underway, affecting 1 and 4
1	Fine entertainment with any artist and museum
1	For Baraga County would like to see the drug problem taken care of and stronger penalties for Abuses. Area of all wood in Baraga mad into a handicapped accessible park.
1	Gas pipeline was ran through our property on Lindblom Rd put we cannot be connected to Natural Gas. No access to cable TV/Internet. Not road signs on over road.

Count Response

1	Great location and Natural Beauty with the bay and surrounding forest. Close to Michigan Tech for business and R and D purposes and the county offers many beautiful sites for leisure and family and exploring.
1	Greater employment is the key for a tax base to all these things. federal forest regulations should be lifted on ORVS! Need to work toward this.
1	Have healthy habits in community and not promoting drinking like the beerfest in L'Anse waterfront park.
1	How much did this survey- which looks nice on paper but the township will not use - cost me as a taxpayer?
1	I am not a resident of Baraga County at the present time. I have a home there since 1980, and still have an interest in what goes on and in the general welfare of its people.
1	I am not a resident of the Township. Only a property owner.
1	I enjoy living in Baraga Township because of the proximity to Keweenaw Bay. I like having public boat launches and access to state forest for utv riding.
1	I left the area for 12 30 years to make a living....accordingly that is reflected in the following rating.
1	I live in Keweenaw Bay and some of the properties are blight. not working cars and junk in the yard. Embarrassing to have this
1	I live in the county. Roads are muddy in spring. Dusty, bumpy in summer. Need more entertainment, culture events. Too many activities involve alcohol we need more business jobs.
1	I really feel Baraga Township has lost its vision. We have a low population and not much of a tax base. Realize that not everyone can have a job locally. Pick up a new vision that Baraga Township has tremendous natural resources that if used in conjunction with DNR and Native Americans can be promoted through tourism. Work to improve these as a day or week destinations. Promote education for teens as well as adults and foster community education programs through the public school and Native American organizations and let folks know they are open to all.
1	I support any industrial or natural development which develop more population.
1	Keeping your town looking clean is great
1	Lots of Natural Beauty, roads are much better than those downstate, lots of community events well advertised. Village services very helpful, friendly people. Awesome 4th of July celebration
1	Many of the row choices in Q.4 seem geared to a larger metropolitan area. Have you seen Baraga Twp.? There is not public transportation, entertainment other than bars, or employment. It is 1960 here.
1	More walking trails

Count Response

1	My family came from the area and have a place on big lake. I do think that de L'Anse Baraga area has an opportunity to develop a consistent "architectural front and provide a walking environment for both the residential people in the area.
1	My wife has lived in Baraga/L'Anse for 45 years. I have a Masters Degree and cannot find work in area, so have always worked out of state.
1	Need more community events which vary not just fishing, hunting, snowmobile, concert.
1	Need more things for the kids to do....Programs. Work programs for kids/teenagers
1	No enforcement
1	Not Currently a resident
1	Our town/community needs to be cleaned up! Old building not be used need to either fixed or cleaned up. A new casino would have been a perfect thing for our community. Would have really made us a destination. It's a shame that it isn't going to happen.
1	Pelkie is in Baraga Twp. and is neglected. The outlying areas are important and have much potential.
1	Please- leave it alone- it looks much nicer without the stain of development!
1	Poor customer service leads to lack of sense of community More cultural sights cant even tell there is a reservation Lack of foliage around transformers - distracts from natural beauty Need more business and sights to attract people - produce income for town.
1	Property taxes too high to support school system with low number of students! Don't feel safe with so many guns in the area and children using guns! Dividedness between races! Need to consolidate and Baraga and L'Anse Schools!
1	Put the township office in Pelkie.
1	Recreational use - sand point under used. Walking trail
1	Road quality has deteriorated over the years. T ransportation is key to tourism and economic developments.
1	Roads look like a war zone. no paving has been done for years. Can't even fill potholes.
1	See last page! Did not realize this sheet had a backside
1	Some of this stuff I have never used
1	Some yards need cleaning up to much junk in plain view.
1	Stop the Drugs. Everybody knows who they are, even cops. some are involved

Count Response

1	Tahtinen Road is neglected. Roadside weed growth has not been cut in over two years and presents a hazard in passing oncoming vehicles and pulling out onto the road. This needs to be cut at least twice per summer season also no garbage pick up site or collection site.
1	Taxes are unfair. Non residents are being gouged with unfair rates. Taxes get raised just because the township can't meet their budget. People that own recreational properties up there love the U.P. But they keep getting notified that government hired agencies are going through and investigating their properties. This invasion of privacy is for one reason only and that's to increase revenue for the Township. Taxes are raised and there is no return on the taxes that are paid. I worry that this master plan is just going to cost the landowner more money.
1	Thank you
1	The county is run by old money. Taxes are too high for new business.
1	The town (downtown) is in really bad shape. We have houses that need to be cleaned up as several are full of junk and debris.
1	There is no public transportation in Baraga Twp Entertainment in Baraga Twp consists of the casino and local Bars and sporting events at the school.
1	Trade-school- job development youth programs to promote learning in home, budget skills for coping with getting by in hard economic times - ideas recycling programs that produce and "end" product
1	Utilities; specifically electrical services seems to be acceptable, but the price for this service is extraordinarily high, and prices continue to rise at or above the rate of inflation. If this trend continues economic development in Baraga Twp. will become increasingly difficult and many people will find it more difficult to live here.
1	We are part-time residents. I answered "neutral" to the questions I did not feel equipped to answer.
1	We fell in love with the natural beauty and feeling of "community" when visiting - recently purchased and loved it!
1	We have very little employment and nothing for our youth to do. No entertainment, except casino in the area.
1	We need better public transportation and bike trails, and a sense of what we as a community are working for in the future.
1	We own property on Payne Rd in Keweenaw bay, but reside in California
1	What public services do we have? I don't know of any. Transportation and garbage pickup would be nice.
1	Why is 1 and 5 very dissatisfied?

Count Response

1	With the natural beauty in the area, there is no reason Baraga Twp cannot become a prime destination.
1	Work with the village and have one recreation area
1	bike paths/lanes would be great
1	in rural Baraga county the ONLY public service our overpriced property taxes get us is a clear road in the winter. Most Baraga homes all look like they could use help but back again to property taxes, this county has almost no signs actually telling visitors where the natural site is. This pushes it back onto us(property owners)
1	love it here
1	lower the speed limit before someone else gets killed!! it shouldn't take a life before the speed is reduced on us-41. for crying out loud it is 35mph in Kenton.
1	make the Barage to L'Anse non-motorized trail a priority
1	satisfy about open space.

6. Based on previous planning efforts and input received so far, the Plan's Steering committee has developed the following four draft goals. Using 1 through 4, please rank these in order that is most important to you.

	1	2	3	4
Goal 1: Preserve open space, natural beauty, and critical environmental areas Count	55	28	32	42
Goal 2: Generate and direct economic development Count	70	28	24	34
Goal 3: Provide, facilitate and maintain quality public services and infrastructure Count	25	50	54	26
Goal 4: Foster a distinctive, attractive community with a strong sense of place Count	22	45	39	48

7. What actions do you think will support these goals?



Count	Response
1	#1 likely to advance value of everything open stores needed to attract those who would most likely protect and preserve needed recreational property.
1	1. Attend conventions and promote our county to small business companies wanting to expand or rebate size of small business company sales of \$500,000 to 10 million a year. 2. Offer lower tax for the business company for a 10 year period.
1	1. Garbage pick up/services
1	All four goals are important. They work hand in hand. We have several small organizations that should help each area and get a representative from each to meet and form a new committee to help promote (unless we already have this group) tourism, business development; our natural resources are our strongest point. When new people come to the site I worked from (In Baraga City) the first thing they said was commenting on our beautiful site we had. The lakes, the trees the red rocks; we need to use it more by providing a township/village park with easy access to a pavilion or open building etc.
1	Along US 41 Signage needs to be more welcoming and uniform - not so cluttered. Keep bayside properties open for the view! Roadside debris- constant menace. Increase public transportation for elderly/home bound.
1	An attractive community needs much attention to clean up yards, business along US 41.
1	Better Roads
1	Better schools programs/activities for kids stress tolerance of others - in schools, domestic abuse, gangs, etc.
1	Bring business not just welding shops

Count Response

1	Bring in work Get rid of the drug problem Get some after school programs to keep kids off the drugs Find better ways to enforce kids to go to school
1	Bringing new businesses related to tourism, clean/renewable energy in Businesses like casinos and smoke shops that can be destructive and health and financial well being can be dangerous to community.
1	Build some smaller buildings in Industrial Park to rent out like big cities do.
1	Clean up Baraga Twp! Encourage property owners to take pride in their property and surroundings. Places look neglected and abandoned with junk cars and trash around homes and buildings (Pelkie proper). The Twp. provides the dumpsters in Pelkie and Keweenaw Bay in the spring, provide that service in the fall also. Please, please, please help the residents find a source to dispose of old tires. The KBIC has provided hazardous waste pick up, I hope that service will be able to continue. If the area at least looks like people care, it may help with home sales and population growth.
1	Clean up reservation area to promote tourism.
1	Consolidate Baraga and L'Anse Schools Trash pick up! Not residential but trash from litterbugs! clean up the roadside!
1	Continued investment in schools, roads and infrastructure. Clean up blight -> open spaces, esp. on shoreline. Active policing to keep drugs, especially meth out of our community.
1	Create Renaissance zone to attract business
1	Create more jobs to make community attractive Support new businesses
1	Develop all wood area on US 41 near marina for recreation, picnic area, paved trails for handicapped. Provide incentives to draw business in.
1	Develop sport for the youth baseball - football - chess- soccer find these to keep children active
1	Develop the open space on the water into an attractive park.
1	Development of businesses drawing tourism and improving the appearance of downtown businesses.
1	Don't allow outside help in the community: that's all city and unnatural things in their ideas. Keep it simple
1	Don't allow pollution. watch the LWEC.
1	Economic Development
1	Economic development will take a major investment in human capabilities, capital development, and the ability to motivate the community to improve themselves and stay focused on developing commercial / industrial partners.

Count Response

1	Electing people who care for community more than their personal interests. Involving the Native American community.
1	Encourage environmentally responsible economic development to the area. I grew up in the Baraga Township area but had to relocate for employment. It is a beautiful area which I enjoy visiting often. I feel very strongly about preserving this beauty, but I also realize preservation efforts along with quality public services and infrastructure requires tax dollars.
1	Encouraging industry to come to the area to promote jobs. Encouraging the residents to support our local public services and businesses rather than going out of the area.
1	Everyone needs to work together make use of the buildings we have re-use Community Prides
1	Fix up the Baraga Marina
1	Focus on bringing Tourism and large employers like pettibone. Preserve scenic views and access to Keweenaw Bay. Develop UTV trails to access downtown to bring in money in non-snowmobiles season.
1	Funding and Education
1	Goal #2: Get people to clean up debris, rotting vehicles, and other crap laying around on their property. Goal#1: Don't allow mining. Enforce pollution laws against Warden Electric.
1	Good paying jobs
1	Grocery and gas prices the same as places in the Houghton area - it is smarter for me to shop in Houghton for groceries that it is to shop in town.
1	How were these set? They seem focused in one area. Plenty of open space/nature. We need jobs and training for them!
1	I am satisfied. Its a good place to live.
1	I believe we need to take advantage of the natural bounty of the area and promote ourselves for visitors. Again, bicycle paths would be great. They significantly contributed to many vettes development.
1	Improved transportation facilities will attract businesses. Don't forget rail service and ship access. An improved economic picture will improve the areas you want to address.
1	In no priority order, I think Baraga Twp. schools need to teach more vocational skills along with computer fluency, reading services. We need job creation, affordable housing.
1	Install public utilities and repair streets, roads, ditches

Count Response

1	Involving active seniors in learning programs and developing old/young appreciation of new and old time skills - can any of these skills be used to produce a product that can be an economic plus? food product? skilled woodcraft? to be produced here and sold? on the job training? public transport? there is no way for people especially younger and unemployed to travel if a possible job comes up to use these services if they are even a few miles away. Its hard to get any where without access to transport.
1	Joint MDNR Keweenaw Bay Indian KBTC MTU MSU extension and environmental group educational opportunities, classes, seminars, etc and enhance environmental awareness and activism. Joint cultural awareness events with KRTC to reach tolerance cultural exchange and understanding
1	Keep Goal #1 our goal #1. Baraga's natural beauty is a vital factor in the sense of quality of life in our community. Hoton/Hancock is Hoton/Hancock (urban), Marquette is a sprawl Baraga feels more like paradise (to me its water views of Keweenaw Bay compare to those seen at Isle Royale National Park.) Preserving Baraga's natural wild beauty I think is paramount to attracting people and businesses who seek a slower paced place to live near nature and outdoor recreational opportunities (hunting, boating, fishing)
1	Keep natural areas undeveloped Encourage growth of small businesses Keep community events such as he Halloween Party at the Firehall.
1	Look at the resources around the county. Consider internet businesses. What do you have in Baraga County that other places don't have?
1	Lower Taxes Help for small business
1	Lower property taxes industrial enterprise zones
1	Lower taxers for businesses/incentives to attract new companies = more jobs = people will have more income
1	Member of the community must/should congregate/work together just like the saying "United we stand, divided we fall."
1	More attention to youth/drugs/Alcohol and other addictions.
1	More recreational developed for area
1	Must attract industry tourism is great, but not enough.
1	Need safe, strong, environmentally sound new business opportunities. Need cost effective power (upcco is too expensive) Need natural gas on tribal land and surrounding areas vs. propane. Convert Baraga waterfront to an open space like my home town of traverse City, MI.
1	Open Space and Natural Beauty. Continue to work toward the Baraga to L'Anse Non-motorized T rail. Develop nice, well kept public beach. The bay is a huge asset . . . use it.

Count	Response
1	Open space and keep shore line open to lake superior as good recreation and fishing, boating and winter sports
1	Orderly garbage collection Blight control - start with the removal of junk cars, trucks, etc. Treat all home areas as though they are residential.
1	Partner with the Indians of the community.
1	Passage and enforcement of blight ordinances. Create a community website that both provides a reference point for community services but also fosters active community involvement.
1	Pave my road that is crumbling apart instead of patching it every other week. Enforce blight rules especially in Pelkie. Get Grants to build a recreation area, cross country skiing, baseball fields, swimming pool.
1	Paved trails along the highway. This will facilitate biking and walking and bring in healthy tourists and keep the locals health.
1	People getting more involved in their surroundings, educate in meetings.
1	Preserve natural beauty
1	Proper access points to Keweenaw bay especially for ice fishing.
1	Public Garbage/Recycle collection site open 2 days per week at times that working folks can use it. Roads are always on the priority list. An attractive community will bring those who will invest in business opportunities, but if roads are neglected, it is like a billboard saying stay away, go home, no opportunities here. Tahiten Road sign has been torn down many times. Put up a game camera and catch the purps. Put up a sign that cant be ripped off.
1	Some form of transportation would be nice. apply for all improvement grants available.
1	Stop clearcutting or letting lumber companies do this along the highway north of Baraga! (Behind a this line of trees)
1	Stopping the warden plant from burning poison rail ties over the lake and converting to natural gas.
1	Strong Township Board
1	Take a vote from the people
1	Take more action to clean up areas of buildings crumbling. Hold residents to a standard of cleanliness. Make sure to use local companies whenever possible.
1	The UP including Baraga relies on tourism - should promote trending outdoor recreation including bike paths around bay, water trails of interest.

Count Response

1	The drug law enforcement needs to be stricter, actual prosecution and harder sentencing for drug offenses would help. Too many unproductive citizens due to pot, alcohol, and meth. A better job outlining to our youth the values of hard work and that America/Baraga can only be what we make it.
1	The lakefront park has been improving each year. The kids love it. Keep it up.
1	There is no cute downtown area in Baraga (L'Anse is ok) Less hunting The main focus in the UP is hunting and snowmobilers. Both groups use private lands (usually without permission) and again there are no designated areas for hunting since the number of vehicles "trolling" around our property has increased. I adamantly suggest Baraga County focus on other activities that don't involve noise (hunting/snow mobilers.) Are there state parks? What about the restaurants that don't feel so local. museums? one that isn't about mining please.
1	This should be decided by current residents.
1	Training for trades in high school
1	Use funds currently available in a wiser way. I think tis very important Not to squander any funds.
1	Woods, quiet outdoor recreation, small community.
1	Work on getting grant funding to improve homes and property, need to get WI-FI service in the Township set up time and goals on people cleaning up their land.
1	Working with Native American Community and the MDNR to promote existing attractions. Be like an advertizing agency for both of their attractions. Foster community identity through local history programs that go beyond Bishop Baraga.
1	Years ago I was Pat Gallaragh Dad coach in Bessemer. We played in Baraga. I think its a great community and has a chance to be developed in Industry and Banking and Natural Resources.
1	architectural (structural and environmental) plans to be voted on by taxpayers.
1	building/converting a freeway or a toll road through the u.p., maybe m28?
1	by keeping baraga township small where everyone knows almost everyone, no work needs to be done or money spent to reach and keep their goals.
1	don't know
1	education, civics
1	goal 2 will pay for 1,3 and 4 Do not create useless public services and survey to waste tax money
1	there are all important - very difficult!
1	we need more jobs for younger people and more positive things for them to do to keep them away from drugs and alcohol

8. Is there another goal you would add?



Count Response

Count	Response
2	no
1	Accept people who own property and pay taxes on the county, but don't live there. Baraga is probably no different than the other places in the U.P. - Visit, stay, spend your money, and go home.
1	BLIGHT ordinance with enforcement. I.e. Downtown Pelkie! Availability of flood insurance on lands that border the Sturgeon and west branch of Sturgeon. Those in charge should support these measures, especially on their own properties.
1	Baraga Area Schools and L'Anse " " to consolidate.
1	Blacktop Moyer Rd.
1	Bring in new employers not connected to gambling!
1	Canoe livery, When I worked at Baraga Beach, I was asked many times where they could go canoeing, we to work on that.
1	Clean up the town of Pelkie
1	Clean water and Air.
1	Consolidation of L'Anse and Baraga

Count Response

1	Create some sort of activities and entertainment for youth and adults! To make a safe, fun. where children and adults can play and learn in a safe and alcohol free zone.
1	Cut down on the drug problem in the county
1	Educational opportunities - programs offered at the school more program focused. Help kids learn some actual skills/trades to get a start in life. OR youth programs to do so.
1	Encourage Tribe to pay taxes to support community.
1	Extend L'Anse Lake Dock out to existing old underwater cribbing. Just like it was in the early 1900s.
1	Find an alternative to UPPCO that people can afford
1	Foster a tourism plan that will seek to improve local restaurants and business to work with the community to promote local events. Be the lubricant that gets businesses, agencies and the Native Americans together to foster this identity and to bring in folks to "play" in Baraga Township.
1	Furniture Factory in old Pelkie School.
1	Garbage pick up
1	Get funding for fun indoor water park and nice (non bloody ways) to enjoy nature....hiking trails/horse trails (no ATVs no hunting). You do realize that people would pay big \$ to visit to bird watch etc. but where are the hotels/motels/great food? coffee shops? So it would help if baraga gets out of the mindset of that's what we do here in the UP and if you don't like it leave....Ghost town comes to mind. This isn't the 1800s and we have to shoot animals for our dinner. I live in the country and hardly see birds, raccoons, squirrels, deer etc because this place is the sports men's paradise. well the sportmen have decimated the wildlife and taken the joy out of seeing wildlife for all of us. There is no sense of community just long lived families that don't fit with most of society. Loo into what other rural areas have done to revitalize themselves. And don't rely on the casino. One....a lot of people don't gamble, two the natives are not friendly, three...the food is mediocre....
1	Get rid of the cell phones! And fast electronics- let's get back to the ol' fashion stuff.
1	Goal 3: I once called the county sheriff because I had a threatening visitor at my cottage. I got a voice mail - called back and got the bailiff. Never got a return call.
1	Goal 5: "Slow Down and See the Beauty" I do like the reduced speed limit on US 41 through Baraga city limits.. I think it complements the idea of a slower, calmer, more natural pace of life in Baraga. Keep petitioning the State of Michigan to make it official. T hanks.
1	Goals - Develop educational events to enhance awareness of alternative cultures, the environment, including global warming and native for citizens of all ages. Use Moyer clinic building and work with BHK Early childhood development (Owner of Moyer Clinic) to accomplish this - Exhibits classes, etc. in building which is vacant and for sale.

Count Response

1	Have the twp board get more involved with the people and publish meetings results in the local paper so residents of the twp will know what's going and can participate or not, you will get more input with the public being more informed.
1	I am happy to see movement toward educating our young people in trades programs- so they can find work here and not have to go elsewhere. As baby boomers age, it's hard to find handymen or other help like mowing, shoveling, plowing.
1	I believe our children need more to do. T rails, parks, play grounds, etc.
1	I wish there could be more flexibility in the Michigan construction standards in the case of the Pelkie school building. The existing codes preclude the use of the beautiful historically significant building for anything other than a school as defined by Michigan state fire safety board. The estimated renovation costs make it impossible to repurpose it for community use. If it isn't sold or transferred to another school, I believe it will become a blight to the Pelkie community and Baraga Twp. as a whole. We should value our history as part of community identity.
1	If children find through to enjoy fundamentally to enjoy audience pay money to watch award can be given. A trophy is an accomplishment.
1	If we reach above completion we done excellent job. Dr. MaAyyad
1	Improve educational and community health options through outreach programs - especially: utilize the pelkie elementary School
1	Improve educational opportunities should combine with L'Anse Schools.
1	Improve on the Baraga Township's employment capabilities
1	Incentives to encourage foot traffic, shops, restaurants, office shops
1	Increase jobs so people don't leave the area. This is a bedroom community and families have to travel to places like Marquette and Houghton to work. Jobs and more names in the town shop, put the tax burden on a wider vase, not have fewer pay more taxes
1	Increase tax revenue by taxing those individuals and corporations who hold mineral rights but are not paying taxes for surface rights.
1	Jobs Jobs Jobs!
1	Keep your roads up
1	Logging and lumber. A lot of resources are shipped out of this area.
1	Lower property tax millage on standing woods owned by private individuals.

Count Response

1	Make/take notice of the drugs in our area. Offer things for our young people... like turning one of the 3 bars on main street into a teen center. make something fun for the kids to do. Look at L'Anse, they seem to have it together.
1	Maybe develop a webpage for Baraga Township like the Baraga Chamber of Commerce has. Maybe there is one, but I'm not aware of it. My husband and I aren't quite sure of what area is considered Baraga Township. What businesses are located in Baraga Township? Our friends in the fire department let us know when events are going on, but we wouldn't know otherwise.
1	More employment with cost of living being met. Small business being promoted. Cut back on nepotism of KBIC. false sense of economy.
1	More places for entertainment like other towns have.
1	More senior housing - low income housing halfway programs and housing are necessary - the need is more critical than a lot of folks realize.
1	Natural Spaces
1	No
1	No.
1	Outlying communities like Kew Bay are a mess! There is not enforcements of incentives make people clean up their yards or homes. There is no pride in community.
1	Promote community health and will bring look at the activities done in Ulm, Minnesota
1	Promote diversity in the community! Education and treatment about/for alcohol abuse and drug abuse.
1	Provide opportunities for human capital development. This is more on a county and regional basis, but there needs to be a reason for business to locate here beyond cheap physical capital.
1	Public transportation is non-existent in this county Less alcohol based entertainment
1	Put a kiln or looms into Pelkie School where people could learn a craft. Put a trade school in Pelkie School to teach our young - why do we have to travel everywhere for everything.
1	Re open airport.
1	Recruit building inspector who is fair minded not manipulating business for his friends. we need more than one inspector to choose from.
1	Renewable energy - would like to write a grant to put solar panels on every house.
1	Roads

Count	Response
1	Schools are lousy, especial Baraga.
1	See line two on comment above
1	Seek development
1	Shopping for food - 2 grocery stores - with prices too high - we need competition!
1	Stiffer penalties for drug abuse.
1	Support industry
1	Support local business to promote industry in the area work with L'Anse as a team.
1	Tackle the drug and alcohol problem. People know who the dealers are. Law enforcement should act on it. Get serious about this issue. If not, it will only get worse.
1	Target drunk driving, we have 40% alcohol-impaired driving deaths in Baraga, the national best is 14%, lots of room for improvement.
1	The drug problem is very bad. Courts need to do more- quit pleading everything done. Drug court is a joke.
1	The old side track tavern used to be quite an experience with all old logging days photos...Too bad we can't preserve these types of interesting buildings that tell a story and give the community a sense of place. There is such a strong native American community...Celebrate that with historic gatherings and connect our earth with all our brothers and sisters!
1	The promotion of health in our community - encouragement and promotion of healthier lifestyle choices for all- encourage indoor and outdoor activities to provide exercise and fresh air for individuals- families-hiking / walking trails- bike trails- safe areas promoting the beauty of our environment. open gym nights for community volleyball, basketball, and dodgeball to get people moving! family yoga night at the Keweenaw Bay Firehall! Yes!
1	Too much dope use, goal to reduce use. With 6 police agencies I would think something could be done. Better prosecuting - not so many plea bargains.
1	Trails for mountain biking and 4 wheels/ATV - many more
1	Turn the old school in Pelkie into senior housing. Help get the old school up and doing business.
1	Utilize natural beauty as attractions place (YMCA, community building) in these places.
1	clean up area - a lot of areas in homes - stuff falling apart. Not a good view for T township drug problems!
1	continue cleaning up the waterfront

Count	Response
1	more ORV trails open back up (i.e. George)
1	public transportation

9. What do you want Baraga Township to be known for (future identity) in the next 5 to 10 years?



Count	Response
2	Natural Beauty
1	" Safe, green, and welcoming"
1	-Quality of life -access to natural resources -protection of environmental quality
1	1. Friendly and easy to work with the local Government agencies for small business companies 2. Lake trout capital of America 3. Safe county low crime and low drug area 4. Great Schools 5. Fair property costs
1	1. Pro business 2. Safety
1	1. quality of life for all residents. 2. Care for all citizens of diverse origins, background and cultures. 3. Environmental awareness and protection 4. A good place to raise and educate children 5. A good place to be citizen at any age 6. Good Schools teaching kids to participant volunteer and educated citizens involved with our democracy.
1	A Superior Environment

Count Response

1	A beautiful shoreline with public access. Keep it as open as possible. No visual intrusions. Develop a swimming beach near marina and a good picnic area. Keep our wild country wild! Upgrade school programs like IREP (Isle Royale Education Program)
1	A beautiful, friendly, growing economic area.
1	A better justice system. Not slap on the hand for drug use. Better selection of shopping and stores. Fair taxes and let Indians pay their fair share for property and driving on roads we pay for.
1	A clean, safe community with a real sense of self identity. Welcoming to the visitor or passerby.
1	A community that welcomes all residents and visitors with open arms. A place where people are attracted to live.
1	A decent and safe place to live.
1	A destination. We could have had a class act with a new casino with great gaming and entertainment and food. We could have been the Island Resort of the northern UP. This really needs to happen. This town was the birthplace of Indian gaming. Be proud of that. With that we would have economic growth, job opportunities, and entertainment. Also as a place where our kids are happy to call home and not just some place they can't wait to get out of. They need opportunity so they may decide to return after their future schooling is complete. This is a great place to live for 45 and up....we need to make it so for the younger group as well.
1	A drug free community that offers job opportunities and a resort destination. We have a lot of beautify areas that we do not utilize.
1	A good area to live and work
1	A good balance on Industry and Conservation.
1	A good neighbor to Keweenaw Bay's waters - I suspect residences use it as a place to dispose of waste water.
1	A good place to raise a family. Better schools - on par with Chassell. Very involved in education of trades.
1	A great place to live, visit, or work
1	A nice place to live.
1	A place my grand children would want to live and be able to work at good paying jobs.
1	A place to come and visit
1	A place where people can be proud of where we live.

Count	Response
1	A place where you can live after high school/college have a fulfilling job and make an adequate living for your family. Good luck!
1	A place you can afford to live, less taxes.
1	A safe community with steady economic growth. Increase in business development. Non-tribal
1	A safe, clean place to enjoy the beautiful U.P.
1	A safe, quiet clean place to live with internet and cell phone accessibility
1	A slowly growing community which encourages business and tourism to the area.
1	A strong community where people still mix well, a community that provides its residents with high quality of life, good job opportunities and reasons for our kids to want to stay and raise their families here.
1	A well rounded, diverse community that takes care of each other, is nice to visit, and encourages people to stay and prosper.
1	All of Baraga County together as a center for career and technical education options to support manufacturing and other local businesses.
1	An attractive community with a large fresh water lake that has ample opportunities for fishing, recreation, and snowmobiling in the winter.
1	An organized and pro-active local government working for its people. A place where individuals and families can develop.
1	As a community that stopped pollution.
1	As a community that welcomes and assists new business, job creation. Also an area that shows hospitality to visitors.
1	As a safe, close community
1	As a very pleasant place to reside
1	Baraga Township is already beautify and relatively safe. We are a caring and giving community that comes together both in celebration and in time of need. That is a lot to be proud of. In the next 5-10 years I would like to see more opportunity for employment that is outside of the Tribe. I would also like to see more housing options. I want our children to be able to make a decent living with ought having to leave the area.
1	Baraga Township will be a great place to live and visit. We will preserve our history and create a modern future, good education, jobs, affordable housing, attractive waterfront park, community events, revitalized downtown, new small businesses

Count	Response
1	Baraga Twp. Natural beauty.
1	Baraga Twp. could invest in wind and solar power, living so close to Lake Superior with plenty of wind. Solar could ease the burden of electric companies, with and excessive costs trimmed with supplemental sun power.
1	Be progress in all departments
1	Beautiful Rural Living
1	Beauty and recreational opportunities year round.
1	Beauty of Nature. Keep lake out of pollution, safety of visitor in area and add for vacationer, and tourist attractions.
1	Beauty, Recreation, T ransportation for elderly
1	Beauty, recreational opportunities, excellent grocery shopping/competitive prices with other areas, public transportation.
1	Beauty, recreational, tourism, cultural diversity, and ability to earn a living and raise families here. We need to keep our youth close to home.
1	Better roads
1	Bike path center of the U.P. more hiking and camping kayaking canoe rent scooters/create sight-seeing opportunities
1	Biking, hiking, and snowmobile trails. more info on waterfalls and other scenic areas.
1	Blue sky would be an economic renaissance from 'environmentally-safe' mining in the area, along with seasonal influxes of tourism. Clean air, clean water, good jobs.
1	Bring Technological businesses in so youth do not move away to gain employment.
1	Clean, tidy and attractive township.
1	Cleanliness of community plenty of employment a place where people look forward to visiting or seeking job opportunities.
1	Community prosperity, celebration of cultural diversity.
1	Creativity, kindness and innovation overcame an outdated mindset
1	Cultural history center - exploit the history of Baraga to encourage people to visit.
1	Economic Development

Count	Response
1	Employment opportunities. Educational Excellence . Job training. Activities for young people in summer and after school.
1	Environment, natural beauty, good schools.
1	Fair government staying out of our way.
1	Friendly people, natural beauty, quiet, simple lifestyles, not developed.
1	Get a real main street with retail businesses
1	Get manufacturing jobs and more jobs - greatest export is our children!
1	Good Tourism. Good small businesses and school with continuing to improve the appearance of local area.
1	Good place to raise a family, opportunity for children and young adults, job opportunities, services for returning retirees.
1	Growth. Our population is declining due to lack of jobs.
1	Hidden gem on the lake Gateway to God's Country Your vacation home
1	Historic Natural Beauty Clean Water
1	How about antique and craft shops. Farmers market and access to healthy foods and activities. Nutrition classes for kids and parents. Kids exercise games, walks, programs.
1	I want Baraga Township to retain its natural beauty. I would like to see some business re-open and give young people chance to earn a living wage here.
1	I would like to see more attention given to Baraga's waterfront access to the general public in terms of a boardwalk or waterfront park that is inviting for residents or those who drive by.
1	I would like us to be known for our clean and visually appealing environment downtown, empty lots and old buildings people personal property - clean it up- spruce it up take pride in our community - encourage each other and help each other to make it look nice to ourselves and visitors.
1	It's Christian Faith For being able to take care of each other in difficult moments For caring for those less fortunate For its beauty and public services As a place to be able to relax and enjoy our surroundings.
1	It's beauty! Homes and yard kept up so everyone can enjoy what we have in Baraga Township.
1	It's caring people, beautiful seasons, improve on our beautiful parks such as the Baraga State park, maintain harmonious living, continue on the native American pow-wow.
1	It's safety and beauty

Count	Response
1	JOBS
1	Jobs and Natural Beauty
1	Known as a place of honest hard working people.
1	Less drugs - cleaner/safer
1	Less nets and better fishing
1	Leverage the beauty of the area and offer more access in terms of better maintained biking/hiking trails. Have more entertainment options, especially live music.
1	Look at Park City, UT or Jackson, WY. to see how they are able to grow and prosper. Think Big!
1	Lost in time.
1	Lower taxes, freezes pending as much as possible.
1	Manufacturing Center
1	Master plans without typos. Safe community. Available jobs. Affordable cost of living.
1	More jobs We need competition with grocery stores.
1	More tourism; year-round- get more outside events to occur- and get people out of their homes and moving.
1	More walking trails
1	Most "Drug Free" County in UP. The County that listens to the voice of the community.
1	Native American Traditions, Natural Resources and as a great place to spend a Day Vacation.
1	Natural Beauty, friendly residents and unique style of this township.
1	Natural Beauty. Recreation Hub. Easy access to the water. Baraga needs a better public beach.
1	Natural beauty with conscientious growth. Marquette is a strong mentor.
1	Natural beauty, job availability, friendly surroundings.
1	Nice and safe community to raise a family.
1	Nice place to live or return not just visit.

Count	Response
1	Not a ghost town not the near highest unemployment rate in the country Not a township where Everyone leaves for opportunities a place that attracts development and opportunities while maintaining its natural beauty.
1	Not an Indian Reservation
1	Nothing
1	Our townships natural beauty, especially Keweenaw Bay which is gorgeous to behold driving along US 41. Often I see cars pulled off to the shoulder to take pictures of water or wildlife. More safe parking overlooks would be advantageous, or a wider shoulder on the lake side of US 41 - or- a bike lane. I am not a biker (bicyclist?) but notice there is an increasing number of bicycles on US 41 every year. I worry for their safety.
1	Outdoor recreation and rural/small town living.
1	Picturesque views and pristine waters economic recovery (not 2nd highest unemployment in nation) strong tourism in all 4 seasons.
1	Promote heritage identity with Indians, Finlanders, and Swedish backgrounds
1	Promote tourism, attract some larger employers which will enhance economic conditions.
1	Property values go down when homes and businesses lack pride in community. tourists must be aghast when we have beautify lake Superior shoreline and then must quickly past by because the unattractive business community. The Baraga State park is attractive and inviting. I am grateful to be able to access the shoreline there.
1	Quiet, safe, friendly
1	Safe T own
1	Safety
1	Secure Jobs with good wages and benefits. Environmental integrity. A government that puts stockholders interests second to us stakeholders.
1	Sense of community Being welcoming of tourists Small town beauty
1	Sense of community to be strong employment and tourist improvements.
1	Some place to come and visit and replace and have a good time. Someplace for Adults and for children with things to do for both. plus beautiful scenery and waterfront!
1	That there is much more to do here other than get drunk and high.
1	The great bars. the farms the township lowers the taxes on, so they can prosper.

Count Response

1	The most progressive small town in 1st the UP and 2nd the state. it can be done.
1	They are in the 21st Century, but with 19th or 20th century values, manners. Preserve the past but embrace the future.
1	Thriving community, diversity, inclusiveness, smart financial actions, addressing long-standing problem of alcohol abuse.
1	To remain as a natural beauty.
1	Tourism, access to natural resources.
1	Vacation Spot, Fishing, Camping, Hunting, ATV Trails, Snow mobiles etc.
1	Vegas Baby!!!
1	We need tourism in the form of recreational vehicles. We have a casino! People will stay there and ride side by side on snowmobiles. While we have good snow trails, we are very limited in RTU trails. stoop netting in the bay and fishing will improve.
1	Would like to see Lake Superior more utilized for tourists.
1	a family friendly safe and fun place to be
1	a place to take your family for a week and weekend to be entertained with natural beauty and cultural diversity.
1	a place where wilderness still exists
1	cozy small town atmosphere, friendly/caring people year round recreation opportunities. Natural beauty - waterfalls, trails, the bay, skies, seasons, wildlife.
1	creasing more jobs in the area
1	economic/drug problem recovery
1	fun safe place to visit
1	low taxes - good jobs
1	upcoming economy and innovation opportunity for young people and those with families to want to stay in the area.
1	work hard to bring in and promote business.

10. Additional Comments:



Count	Response
1	"Rails to trails" We live north of the city on US 41. The abandoned RR grade runs through our back yard, parallel to 41. It would be a safe natural corridor for bikes and non motorized and foot traffic and wildlife corridor. Please no snowmobiles through obnoxious and smelly (they spoil the peace and quiet). Very many rural intersections are unmarked and therefore hard for people to find their way. More "street signs" would be helpful to many drivers, especially our visitors.
1	12 step recovery programs should be communicated and encouraged: AA, AL-ANON, OA, NA, NAR-ANON Less Sports, more arts!
1	A boat launch near Keweenaw Bay Protect the Townships natural shoreline it is being washed away and county doesn't care Develop/strengthen / update the blight law if there is one - too many houses with junk - old cars- etc- would you want to live next to house like that?
1	As a part time resident I hope to continue the sense of remoteness in this area
1	Baraga Twp. and the surrounding villages and other townships could embrace great change that could improve the standards of living. But many people are stuck in the past and Do Not want change, the detriment of the citizenry.
1	Baraga Twp. should be a friendly and welcoming commenting that could cause someone traveling through to want to stay and rest a while.
1	Baraga is a nice place let's make it more accessible and more employment and business.
1	Community activities, educate, etc. to foster sense of community.
1	Currently the answer to #6 is what we identify Baraga T township as, so no major changes needed. Baraga Township as, a whole is beautiful and we like that it is appreciated, but not a tourist attraction like Copper Harbor.

Count Response

1	Do something with the Beaches along Highway 41. Get them to be public if they are not or work toward opening them for swimming or whatever. Don't leave them as the shoulder of US41.
1	Don't spend money you don't have. Use grant money to get new businesses to the area. If they get a tax break have them pay the money back if they leave early. We have the highest unemployment in the state. We need to employ people in the area, have homes for them and expand the tax base not the tax rate.
1	Equal rights for hunting and fishing Red man versus white man
1	Get message to students from early age the need to improve the educational learning needed.
1	Have Baraga County's own staff to travel and office in Baraga County to promote our county for small business companies to locate and operate their business in our county.
1	How much \$ has been spent on planning rather than doing?
1	I am not a resident of Baraga Township. WE do own a cottage in Baraga Twp. We live in Covington Twp.
1	I appreciate this survey and am glad it is being done.
1	I don't see the communities master plan being followed. Why bother with this if its not pursued.
1	I have worked in local government for over 20 years. Currently I live in Madison WI and work for Dane County WI. I am willing to assist if needed. J. McLellan 608/334-8443
1	I live in Pelkie. I would like to see the old Co-op store in use. It looks like it's new owner has a plan for it's future use. I would like to see the Pelkie school used and maintained. I would like to see the MTU credit union open and operational.
1	I lived in Keweenaw Bay for approximately 15 years. My husband passed away 8 years ago. I moved to Chassee but still own property in Baraga County. I applaud a developing of a master plan for Baraga Township . Like the people there!
1	I love the Keweenaw Bay area for its kayaking, canoeing, hunting, and fishing. These are ways that most of the folks relate to this Township. To protect the woods and waters are the most important actions we could teach our young people. I want my grandchildren to say that their parents gave the tools to help promote clean water and respect for the land.
1	I love where I live - it is beautiful here - but there are some real eyesores which need attending to - don't allow a few to spoil the view. Encourage community clean up and fix up projects. you meet some great people when you are a great person and work together for the goal...Many hands make light work.

Count Response

1	I own property and vacation cottage on otter river. It has been in our family for 113 years. River is being negatively impacted by Farming, cattle and logging in Houghton County. Township. needs to work with Houghton County to correct issues such as erosion, algae growth and poor water quality upstream from the Baraga County section. Fish Habitat is also impacted, not just recreation.
1	I own property but do not live in Baraga Twp. so my answers might not be too helpful. Sorry.
1	I rarely get up there any more not because I don't want to but my job prevents - My dad comes more with my mom. I have no opinion.
1	I really wish you the best....and good luck. You have an uphill battle against complacency, apathy, cruelty to nature, using nature and the belief that the status quo is going to continue to work . I can hear this piece of paper being crumpled up and thrown away due to nothing more than the fear of change....BTW we have lived all over the US and traveled the world. The beauty drew us in BUT there are lots of pretty places.
1	I suspect that summer homes/cottages contribute a significant % of the tax base - so holding board of review in winter gives us little opportunity to share our concerns.
1	I think you should lower our taxes instead of pissing money away on engineer's.
1	I would like nothing more than to live in Baraga township for the rest of my life, but the lack of job opportunities for someone with a college degree will always push the best and brightest of our youth away... So, without opportunities, you are left in the exact position you're in...Not enough tax revenue to fix your issues and help create a community you desire. The cost of electricity is one of the major reasons it is too expensive for manufacturing to locate in you area, much less for your citizens to be able to afford to live here. \$250-\$450/month electric bills depending upon weather for a household is INSANE and add to that \$300-\$400/month propane bill adds to that. So all that money doesn't go into community stores but to energy firms. Chip away at the real problems and provide opportunity and jobs, and reduce drug and social problems. And lure a new prosecutor to the area too!
1	I'd like any Master Plan include a Community Benefit agreement and insist on Responsible construction contracting language in hiring contractors.
1	I'm thankful to the road commission for how well they keep DesRochers Rd. up both in the summer and winter.
1	It seems as though the Baraga Township board has a good working relationship with the KBIC that is a plus. Two entities working together and helping each other out is a lot better than only one of them going it alone. Both entities are involved with Bara Township. Use each other to benefit all of the residents.
1	It's as God made it - whatever makes you think humans can improve upon it?

Count Response

1	It's good to know a plan is being developed! Please be sure that it is robust, and takes a long hard look 25 years down the road. It's a tough picture but we must plan. Environmental quality is a real asset. Market it along with proximity to MTO. To this end make sure that there is excellent high speed internet. Go after telework jobs, that don't require being in a metro setting.
1	Keep Baraga rural and naturally beautiful. Don't spoil its natural and wild atmosphere!
1	Lack of Telephone cellphone communication lack of grocery stores no on street phone for safety
1	Leave farmers alone they keep the fields from going to weeds. Ref. Roger Turunen Pig Farm
1	Look at what worked in Houghton/Marquette area to promote growth - "they weren't always developed" where did they succeed? where did they screw up? There are a host of young people who have given up even trying to get work in the area because of lack of employment and transportation issues. They cant even afford to relocate to find work. They don't want to leave their home towns and cant find a way to get any help to better themselves even when they really want to because of lack of training, funds to hold them over until they start earning when they do find an opportunity in another area and become stuck and turn to alcohol and drugs. in some cases they are from families that cant provide help for them beyond a place to sleep and a meal.
1	Most of the Township is in fair shape except to the town of Pelkie. There is not blight ordinances and there should be. We are fortunate not to live in the downtown area. We take pride in our home and it shows.
1	My husband has passed on but he did work as his employees forester for more than 40 years. I would like to have the Baraga Township to take care of the logging businesses and its forest. "It takes a village to raise child."
1	No spring clean up for the rural areas of Baraga. We feel the only benefit we get from our property taxes is snow removal. Traffic on Lindblom Rd has increased tenfold. Many use this road rather than M38. speed limit is 55. It has been built up many residential homes. Cars speed up and down the road 24/7. speed limit should at least be 50 mph or less since most are traveling 60 plus mph. We have enough law enforcement in the area per chance something could be done.
1	One could achieve all of the 4 goals stated; and withouta pleasant surrounding, why would one want to live here.
1	Our children in this area leave after high school and never return to live because there is NO future for them here. That should be the number 1 priority of all areas of the Upper Peninsula. Also something needs to be done to lower electric rates. It is outrageous to be the number 1 in the nation for cost of electricity. The Master plan should focus on opportunities for you and creation of jobs by encouraging companies to settle in our area. Tourism does little for the majority of residents. This is a waste of taxpayers money if all this does is create a plan without any real action!
1	Please don't make any changes that is going to result in more money needed from the already overburdened taxpayer.
1	Plus we have a solid industrial base with good jobs.

Count	Response
1	Pre Survey info
1	Property Taxes to high
1	Rich in historical aspects - ethnic (Finns, Native Americans, French) Farming, lumbering, Bishop Baraga. Drugs are still a problem. I love living here.
1	Rural Baraga Twp. was once a large farming area. It is unfortunate that farming has become so expensive. It seems like such a waste of land to see all those farms go fallow. The farmers market is a nice addition to the community and I hope it continues to grow.
1	Search for more federal and state and private funds.
1	Sorry I have not lived in Baraga township since 1957. Still visit but for short periods.
1	Stop allowing more tax base land from being put into government hands, what is the percentage of land in any government hands? what happens to the taxes of the smaller tax base when government holdings increase. My taxes go up my services go down!
1	Thanks for asking resident information and output
1	Thanks for the new attitude Sincerely Jont Tyson
1	The Native American community has an excellent opportunity to participate in improving the community. Transform the casino from a smoky, dingy, gambling facility into a more upscale resort with better entertainment opportunities for a broader cross section of the community.
1	The natural beauty of this area is a great asset, we need to encourage tourism and at the same time preserve our resources; keeping them unspoiled.
1	The unique location, habitat, diversity of flora, fauna, lake superior presence make Baraga Twp. a special part of Michigan. The townships should work develop taware, informed and active citizens to participate in all aspects of governmental, tribal and secular life.
1	This area has great history and beauty which should be recognized.
1	United we stand divided we fall. We have to refrain from and limit logging, as our forests be aware of global warming, artic ice caps are receding.
1	Use Baraga Township on Envelope as I thought it was junk mail.
1	We are happy here but all the young people have to leave to find employment opportunities. It would be great if that could change.

Count Response

1	We are selling or property there, partly because it is far away and difficult to visit, but mostly because we feel people have just taken advantage of us. WE are paying residential taxes on an old farm that is 10 miles out of town. There have been some we have met that were very helpful, nice, but many others that only wanted to use us - probably because we are trolls. My parents were from the UP (Germtask, Newberry) and going up there never gave me a bad opinion of that area. So why did Baraga fail?
1	We bought our property in Baraga about 4 years ago because of the natural beauty of the area. We thought of buying a boat because of the bay and Lake Superior. We soon realized that was nothing to do once you were out of the water! You can fish or ride around in circles. The marina is old and hard to use, we point our visitors to the one in L'Anse. The dining is almost non-existent, we take our visitors to Houghton to eat! The fact that there is so much beautiful shoreline with nothing on it but a water treatment plant, a BP station and a yard waste dump is just ridiculous. We have almost lost all the logging jobs and the mining jobs but we could still make the UP a tourist destination. Look at Marquette and the beautiful job they are doing with their water front. If people could easily put a boat and dock at a nice eating place or a nice marina it would be great. The main street should be used for businesses and the shoreline should be full of eating and drinking places with nice li
1	We do not have much to do in Baraga Township.
1	We have a problem with taxes - There are two groups - tribe and Mennonite - which contribute nothing to local taxes.
1	We have nice snowmobile trails in the winter; could they be used as ORV trails in the summer? 4th of July fireworks on the bay is always enjoyable. The new hospital is nice, and I like what the tribe is doing with their community college.
1	We live downstate and own forest land in Baraga Township. We visit Baraga annually.
1	We love to come and visit but we really don't live here so we just come and go - I'm not out and around a lot as were getting elderly!
1	We moved to Baraga because of family that grew up here. We are very proud to call Baraga our home and our future. We would like more community functions to meet others- we need more that Bars and Drinking functions and more family/young adult gatherings.
1	We own a recreational lot on Keweenaw bay and have ono intention of building or living there because of our age and the fact our family children and grand children live close by here in Madison Wisconsin. We greatly enjoy the beauty of the area and look forward to doing so in the future. We are on our lot perhaps 50 days each year.
1	We pay high property taxes but what do we get for that? Poor schools and no services. Where does the money go? Until that changes the count will continue to stagnate.
1	When sending any letter out the the public at least 2 people should review the spelling etc. People remember the negative things more than positive things we are doing in the county.
1	Would like to see efforts stepped up to help eliminate local drug problem.

Count Response

1 appearance of buildings: Part of question 4 Example: Green House on Pine Creek Road has been condemned and now is a terrible eyesore (in Pelkie) Example: Kostamo's tank yard doesn't anyone ever police that place there is more and more junk that you can see from the road and it keeps spreading our war. I don't like looking out my front window and seeing all their junk. Can't anything be done about it? It is on Kostamo Rd off of the Pine Creek Road in Pelkie. Road quality (part of question 4) would like to see snow plow drivers lift blade when going by a freshly plowed out driveway. Wish they would be more respectful. a very long time ago we on and off the Pine Creek Rd were told the County would pave our road but we were on a list to have it done. I would think we should be close to the top of that list by now. Even if you only paved from Hwy 38 to Kostamo Rd would be great.

1 less taxes

1 love it here

1 must clean up drug problem.

1 open back up public lands to the public.