Grand Traverse Band of Ottawa and Chippewa Indians

Natural Hazards Mitigation Plan

Networks Northwest
Talent / Business / Community

I. ACKNOWLEDGEMENTS

The Grand Traverse Band Hazard Mitigation Plan (GTB-HMP) is the culmination of the interdisciplinary and interagency planning effort that required the assistance and expertise of numerous agencies, organizations, and individuals. Without the technical assistance and contributions of time and ideas of these agencies, organizations, and individuals, the GTB-HMP could not have been completed.

Each entity within Grand Traverse Band of Ottawa and Chippewa Indians (GTB) reservation and on land owned by the GTB is a continuing participant in the update of the GTB-HMP. The following is a list of key contributors who were instrumental in the development of the GTB-HMP.

Grand Traverse Band Tribal Council
Chairman: Thurlow "Sam" McClellan
Vice-Chair: Kimberly Vargo
Treasurer: David Arroyo
Secretary: Jane Rohl
Tribal Councilor: Percy Bird Jr.
Tribal Councilor: Mark Wilson
Tribal Councilor: Frank Wilson

Grand Traverse Band Tribal Council (at time of Planning Process)
JoAnne Cook, Acting Chair/Vice-Chair
David Arroyo, Tribal Council Secretary
Tom Shomin, Tribal Council Treasurer
Mark Wilson, Tribal Council
Tanya Raphael, Tribal Council

Grand Traverse Band Tribal Manager
Mary Pelcher

Grand Traverse Band Emergency Management Coordinator
Jolanda Murphy

Grand Traverse Band Department Managers
Nicki Basch
Jolanda Murphy
Ron Anderson
Arlene Kashata
Desmond Berry
Dawn Shenoskey
George McClellan

Grand Traverse Band Health Department
Mari Raphael

Grand Traverse Band Legal Department
John Petoskey

Grand Traverse Band Tribal Police Department
David Crockett, Captain
Russ Cavanaugh, Sergeant
Todd Bonter, Police Officer

Grand Traverse Band Environmental Department
Melissa Witkowski

Grand Traverse Band Corporate Architect
Steve Feringa

Leelanau County Emergency Manager
Matt Ansorge

II. Resolutions of Adoption and Final FEMA LETTER OF TRANSMITTAL

U.S. Department of Homeland Security
Region V
536 S. Clark St., 6th Floor
Chicago, IL 60605-1509

FEMA

Mr. Thurlow McCellan, Chairman
Tribal Council of the Grand Traverse Band of Ottawa and Chippewa
Grand Traverse Band of Ottawa and Chippewa Indians
2605 N. West Bay Shore Dr.
Peshawbestown, MI 49682

JUN 15 2016

Dear Chairman McCellan:

We are pleased to inform you that the Grand Traverse Band Hazard Mitigation Plan has been *approved*, meeting the requirements for a Tribal Mitigation Plan as provided for under the Disaster Mitigation Act of 2000.

The approval of this plan ensures the availability within the Grand Traverse Band of Ottawa and Chippewa Indians of non-emergency Stafford Act funding including the Pre-Disaster Mitigation Program, Hazard Mitigation Grant Program, Fire Management Assistance Grants, and Public Assistance Categories C-G. All requests for funding, however, will be evaluated individually according to the specific eligibility and other requirements of the particular program under which the application is submitted.

We encourage the Grand Traverse Band to follow the plan's schedule for monitoring and updating the plan. The plan must be reviewed, revised as appropriate, and resubmitted for approval within five years.

Congratulations to the Grand Traverse Band of Ottawa and Chippewa Indians on completing this significant action. If you or other community representatives have any questions, please contact Christine Meissner at (312) 408-4460 or christine.meissner@fema.dhs.gov.

Sincerely,

Andrew Velasquez III
Regional Administrator

cc: Matt Schnepp, State Hazard Mitigation Officer

The Grand Traverse Band of Ottawa and Chippewa Indians

2605 N. West Bay Shore Drive • Peshawbestown, MI 49682 • (231) 534-7750

RESOLUTION
Number 16-34.2760

WHEREAS: The Grand Traverse Band of Ottawa and Chippewa Indians (GTB) became federally-recognized as an Indian Tribe having a government-to-government relationship with the United States effective May 27, 1980 (see 45 Fed. Reg. 18321-322 (March 25, 1980); and

WHEREAS: GTB is organized under a Tribal Constitution approved by the Secretary of the Interior on March 29, 1988; and

WHEREAS: GTB has a full Tribal Council currently consisting of Thurlow "Sam" McClellan, Tribal Chairman; Kimberly M. Vargo, Vice Chair; David Arroyo, Treasurer; Jane A. Rohl, Secretary; Percy Bird, Jr., Councilor; Mark L. Wilson, Councilor; and, Frank Wilson Councilor; and

WHEREAS: Article IV, Section (1)(a) of the Tribal Constitution provides that a power of the Tribal Council is "[t]o promote and protect the health, education, and general welfare of the Band and its members;" and

WHEREAS: Article IV, Section (1) (c) of the Tribal Constitution provides that a power of the Tribal Council is "[t]o to make all laws, not inconsistent with this Constitution, which shall be necessary and proper to carry out the sovereign powers of the Tribe, and to implement and enforce the same," and

WHEREAS: Article IV, Section (1)(h) of the Tribal Constitution provides that a power of the Tribal Council is "[t]o manage and control the economic affairs, enterprises, property, and all other interests of the Band;" and

WHEREAS: the Grand Traverse Band of Ottawa and Chippewa Indians has historically experienced severe damage from natural and human-caused hazards such as flooding, wildfire, earthquake, drought, thunderstorms/high winds, and hazardous materials incidents on many occasions in the past century, resulting in loss of property and life, economic hardship, and threats to public health and safety;

WHEREAS: the Grand Traverse Band of Ottawa and Chippewa Indians has developed and received conditional approval from the Federal Emergency Management Agency (FEMA) for its All Hazard Mitigation Plan under the requirements of 44 CFR 201.7;

WHEREAS: the Plan specifically addresses hazard mitigation strategies and plan maintenance procedures for Grand Traverse Band of Ottawa and Chippewa Indians;

WHEREAS: the Plan recommends several hazard mitigation actions/projects that will provide mitigation for specific natural and human caused hazards that impact Grand Traverse Band of Ottawa and Chippewa Indians, with the effect of protecting people and property from loss associated with those hazards;

WHEREAS: adoption of this plan will make the Grand Traverse Band of Ottawa and Chippewa Indians eligible for funding to alleviate the impacts of future hazards on the Reservation.

NOW THEREFORE BE IT RESOLVED: by the Tribal Council of the Grand Traverse Band of Ottawa and Chippewa Indians that:

1. The Plan is hereby adopted as an official plan of Grand Traverse Band of Ottawa and Chippewa Indians.

2. The respective officials identified in the mitigation strategy of the Plan are hereby directed to pursue implementation of the recommended actions assigned to them.

3. Future revisions and Plan maintenance required by 44 CFR 201.7 and FEMA, are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.

4. An annual report on the progress of the implementation elements of the Plan shall be presented to the Grand Traverse Band of Ottawa and Chippewa Indians Tribal Council by June 30, 2016 of each calendar year.

5. The Grand Traverse Band of Ottawa and Chippewa Indians will comply with all applicable Federal statutes and regulations in effect with respect to the periods for which it receives grant funding, in compliance with 44 CFR 13.11 (c); and will amend our Plan whenever necessary to reflect applicable changes in Tribe, State or Federal laws and statutes as required in 44 CFR 13.11. (d).

BE IT FURTHER RESOLVED: That the Tribal Chairman, Thurlow "Sam" McClellan, and the Tribal Manager, Mary Pelcher, are authorized to contract, negotiate, execute, and otherwise provide for the administration of projects as required during their tenure or until completion of the programs, whichever is earlier.

APPROVED: _____ **ADOPTED:** _____
Thurlow "Sam" McClellan
Tribal Chairman

Jane A. Rohl
Secretary

CERTIFICATION

As Secretary of the Grand Traverse Band of Ottawa and Chippewa Indians Tribal Council, I hereby certify that the above Resolution was approved and adopted at a Regular Session of the Tribal Council held on June 15, 2016 by a vote of 5 for, 0 against, 0 abstaining, and 1 absent.

ATTEST: _____
Jane Rohl, Secretary

III. PREFACE

Hazard mitigation is any action taken before, during, or after a disaster to permanently eliminate or reduce the long-term risk to human life and property from natural and technological hazards. This procedure is an essential element of emergency management, along with preparedness, response, and recovery. Emergency management includes four phases: a community prepares for a disaster; responds when it occurs; and then there is a transition into the recovery process, during which mitigation measures are evaluated and adopted.

The evaluation improves the preparedness posture of the Tribal Government for the next incident, and so on. When successful, mitigation will lessen the impacts of natural hazards to such a degree that succeeding incidents will remain incidents and not become disasters.

The mission of the GTB-HMP is to permanently eliminate or reduce long-term risks to people and property from natural hazards so that the Tribal Government assets such as transportation, infrastructure, commerce, and tourism can be sustained and strengthened. This can be accomplished through collaborative efforts/activities amongst agencies within the Grand Traverse Band of Ottawa and Chippewa Indians.

Mitigation allows repairs and reconstruction to be completed after an incident occurs in such a way that does not just restore the damaged property as quickly as possible to pre-disaster conditions. This process is needed to ensure that such cycles are broken, that post-disaster repairs and reconstruction take place after damages are analyzed, and that sounder, less vulnerable conditions are produced. Through a combination of regulatory, administrative, and engineering approaches, losses can be limited by reducing susceptibility to damage.

Recognizing the importance of reducing community vulnerability to natural hazards, the Grand Traverse Band seeks to actively address the issues through the development and implementation of this plan. The many benefits to be realized from this effort are:

Community Benefits of a Natural Hazard Mitigation Plan
Protection of the public health and safety
Preservation of essential services
Prevention of property damage
Preservation of the local economic base

This process will help ensure that the reservation and owned lands of the Grand Traverse Band remains vibrant, safe, enjoyable places in which to live, raise families, and continue to conduct business, and maintain a tourist base.

IV. EXECUTIVE SUMMARY

In 2000, the Disaster Mitigation Act shifted the Federal Emergency Management Agency's (FEMA) scope of work to promoting and supporting prevention, or what is called hazard mitigation planning. FEMA now requires government entities to have natural hazards mitigation plans in place as a condition for receiving grant money, such as hazard mitigation grant program funds, in the future.

To meet this requirement, the Michigan State Police provided funding to encourage regional cooperation in the development of individual county Natural Hazards Mitigation Plans. The Northwest Michigan Hazard Mitigation Planning Project update was coordinated by the Northwest Michigan Council of Governments (NWMCOG) with Leelanau County being the Fiduciary. The update included Antrim, Kalkaska, Missaukee, Wexford, Grand Traverse, Leelanau, Benzie, and Manistee counties and was expanded to include the GTB-HMP

Networks Northwest worked with the Task Forces to update the county plans for these counties as well as the GTB Tribal Government for the GTB-HMP, which includes a general community profile, a comprehensive inventory of existing hazards, risk assessment, goals and objectives, and feasible mitigation strategies to address the prioritized hazards.

The GTB-HMP focuses on natural hazards such as drought, wildfires, flooding, shoreline erosion, thunderstorms and high winds, tornadoes, and extreme winter weather, and was created to protect the health, safety, and economic interests of the residents and businesses by reducing the impacts of natural hazards through planning, awareness, and implementation. Through the GTB-HMP, a broad perspective was taken in examining multiple natural hazards mitigation activities and opportunities in GTB Tribal areas. Each natural hazard was analyzed from a historical perspective, evaluated for potential risk, and considered for possible mitigative action.

The GTB-HMP serves as the foundation for natural hazard mitigation activities and actions within the GTB Tribal area, and will be a resource for building coordination and cooperation within the community for local control of future mitigation and community preparedness around the following:

V. PURPOSE OF THE GTB-HMP

In 2000, the Disaster Mitigation Act shifted the Federal Emergency Management Agency's (FEMA) scope of work to promoting and supporting prevention, or what is referred to as hazard mitigation planning. FEMA requires government entities to have natural hazards mitigation plans in place and updated on a 5-year cycle as a condition for receiving grant money related to natural hazard remediation.

The purpose of the GTB-HMP is to find solutions to existing problems, anticipate future problems, prevent wasteful public and private expenditures, protect property values, and allocate land resources. The implementation of the GTB-HMP is intended to prevent injury, loss of life, property damage, breakdown in vital services like transportation and infrastructure, economic slumps, diminished tourist activity, liability issues, and damage to a community's reputation. For GTB Tribal lands in the northwest region of the lower peninsula of Michigan, the planning process utilized the following steps in the development of the GTB-HMP. Emphasis was placed on natural hazards that have had significant impact on the community in the past.

Steps in the Planning Process
Identification of natural hazards and risks
Preparation of draft plan
Identification of natural hazards mitigation goals and objectives for emergency management programs
Selection of evaluation criteria
Selection of mitigation strategies using locally chosen criteria
Public Comment
Completion of the final plan

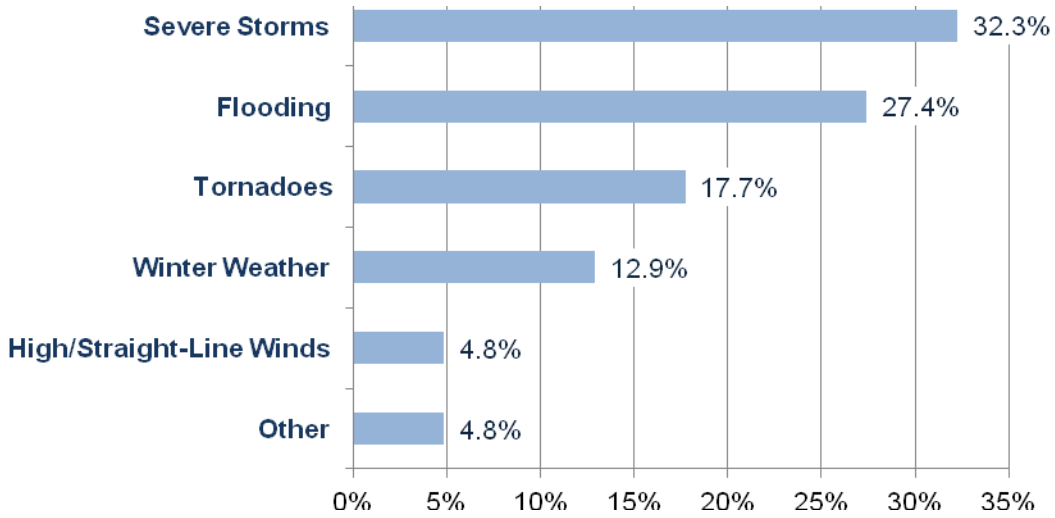
What is a Hazard?

A hazard is an event or physical condition that has potential to cause fatalities, injuries, property damage, infrastructure damage, and agricultural loss, damage to the environment, interruption of business, or other types of harm or loss. The GTB-HMP focuses on principle natural hazards that affect GTB Tribal lands. The GTB-HMP is intended to be a resource for building coordination and cooperation within a community for local control of future mitigation and community preparedness.

Principle Natural Hazards in Northern Lower Michigan
Severe Storms (Thunderstorms, Winter storms)
High Winds
Tornadoes
Extreme Temperatures
Flooding
Shoreline Hazards
Dam Failures
Drought
Wildfires
Invasive Species
Subsidence

Source: FEMA

Figure 1: Disaster Declarations for the State of Michigan



What is Mitigation?

Mitigation is the sustained action taken to lessen the impact from natural hazards and to work to reduce the long-term risk to human life and property, and their effects. This long-term planning distinguishes mitigation from actions geared primarily to emergency preparedness and short-term recovery. The GTB-HMP can be used to lessen the impact, to support and be compatible with community goals, to lay out considerations in choosing and evaluating methods, and to look at the feasibility of mitigation strategies.

VI. COMMUNITY PROFILE

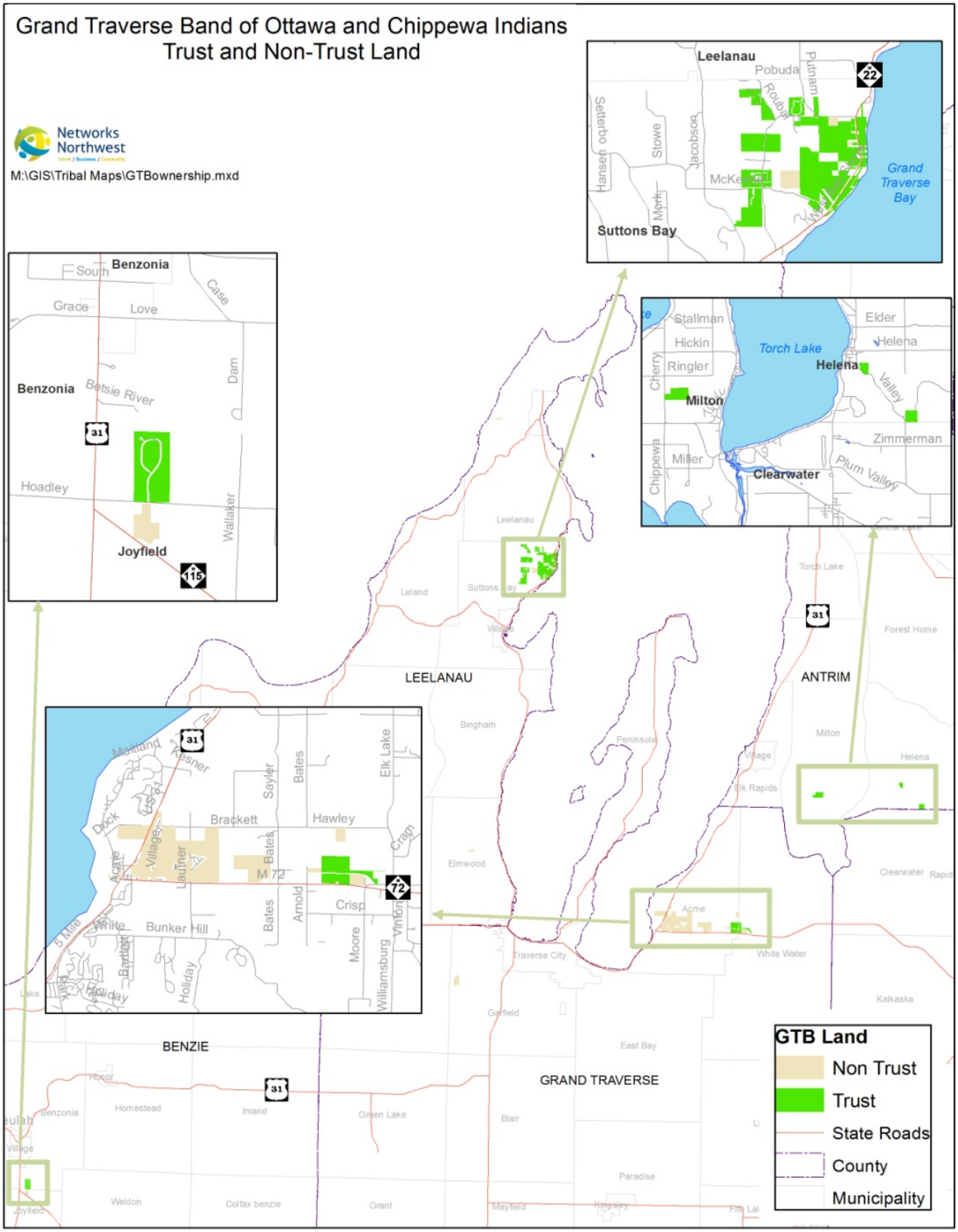
The Grand Traverse Band of Ottawa and Chippewa Indians (GTB) were one of many tribes throughout the United States who entered into agreements with the United States through the Treaties of 1836 and 1855. As a result of these Treaties the Ottawa and Chippewa nation of Indians ceded large tracts of land to the United States while in turn the nation of Indians could reserve tracts of land in common for their own use.

For the Michigan based tribe, Grand Traverse Band of Ottawa and Chippewa Indians formerly known as the Anishinaabek, this meant that they reserved a twenty thousand acre tract of land located on the north shore of Grand Travers Bay, through the 1836 Treaty, in addition to approximately 84,000 acres of land divided between two separate tracts of land located in Leelanau County and Antrim County, through the 1855 Treaty.

Unfortunately, even though the GTB had documented reservation lands it still was a struggle getting their tribe recognized by the United States Government. It wasn't until 1980, that the Anishinaabek people were finally recognized as the Grand Traverse Band of Ottawa and Chippewa Indians through the Indian Reorganization Act.

There are 4,179 members of the Grand Traverse Band, of which 1,891 members and their dependents reside on the reservation lands or within the GTB service area; the county breakdown is as follows:

County	GTB Members	County	GTB Members
Antrim	**86**	**Grand Traverse**	**675**
Benzie	**157**	**Leelanau**	**761**
Charlevoix	**188**	**Manistee**	**24**


Grand Traverse Band of Ottawa and Chippewa Indians
Trust and Non-Trust Land
Networks Northwest
M:\GIS\Tribal Maps\GTBownership.mxd
Leelanau
Pobuda
Putnam
Roubal
Setterbo
Hansen
Stowe
Jacobson
Mork
McKe
Grand Traverse Bay
Suttons Bay
Benzonia
South
Grace
Love
Case
Dam
Benzonia
Betsie River
31
Hoadley
Wallaker
Joyfield
115
Stallman
Hickin
Ringler
Cherry
Torch Lake
Elder
Helena
Valley
Milton
Zimmerman
Chippewa
Miller
Clearwater
Plum Valley
Leelanau
Suttons Bay
Leland
Village
Torch Lake
31
Forest Home
LEELANAU
ANTRIM
Bingham
Peninsula
Milton
Village
Helena
Elk Rapids
Elmwood
Clearwater
Rapid
Acme
White Water
Traverse City
Kalkaska
Garfield
East Bay
BENZIE
GRAND TRAVERSE
Homestead
Inland
Green Lake
Blair
Paradise
Benzonia
Village
Weldon
Colfax benzie
Grant
Mayfield
Kingsley
Fife Lal
Maitland
Resner
Sayler
Bates
Elk Lake
Dock
US-31
Brackett
Hawley
Village
Lautner
Acme
Bates
M 72
Cram
72
Crisp
Arnold
Bates
Vinton
5 Mile
White
Bunker Hill
Moore
Williamsburg
Bartlett
Holiday
Holiday
Lake
GTB Land
Non Trust
Trust
State Roads
County
Municipality

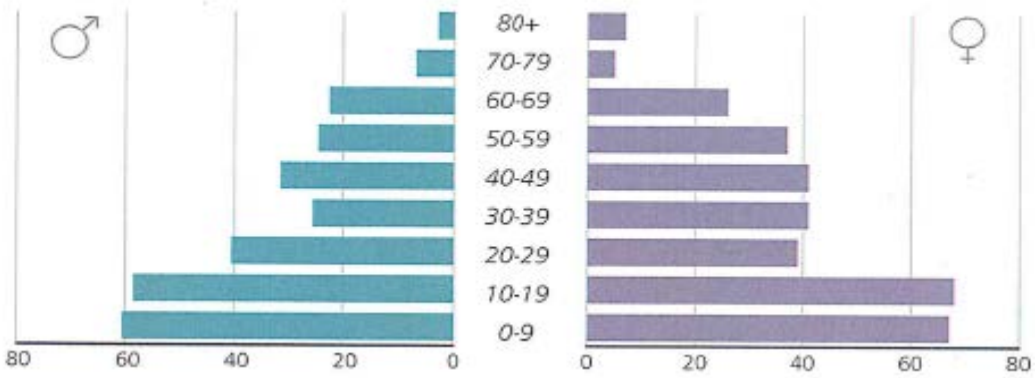
Demographics

According to the 2010 US Census, the population of the Grand Traverse Reservation and Off-Reservation Trust Land was 608 people, an 11.6% increase over the 2000 population of 545 people. The population distribution between males and females is 45.6% and 54.4% respectively.

2010 U.S. Census Statistics				
Geography		Population	Male (%)	Female (%)
Reservations	**Grand Traverse Reservation and Off-Reservation Trust Land**	**608**	**45.6**	**54.4**
	Little Traverse Bay Reservation and Off-Reservation Trust Land	51	52.9	47.1
	Little River Reservation and Off-Reservation Trust Land	57	52.6	47.4
	Sault Ste Marie Reservation and Off-Reservation Trust Land	1,747	47.9	52.1
	Isabella Reservation*	26,274	50.1	49.9
Village & City	Suttons Bay	618	44.7	55.3
	Traverse City	14,674	47.4	52.6
Counties	Leelanau County	21,708	49.3	50.7
	Grand Traverse County	86,986	49.4	50.6
State of Michigan		9,883,640	49.1	50.9
United States of America		308,745,538	49.2	50.8

Source: U.S. Census Bureau, 2010 SF1 General Population and Housing Characteristics Profiles
*Off-Reservation Trust Land data for Isabella Reservation is not yet available.

The population pyramid (below) has a broad base indicating a high proportion of children living on reservation land compared to elderly populations. The pyramid also depicts a rapid rate of population growth. Such pyramids indicate a high birth rate, high death rate and short life expectancy.



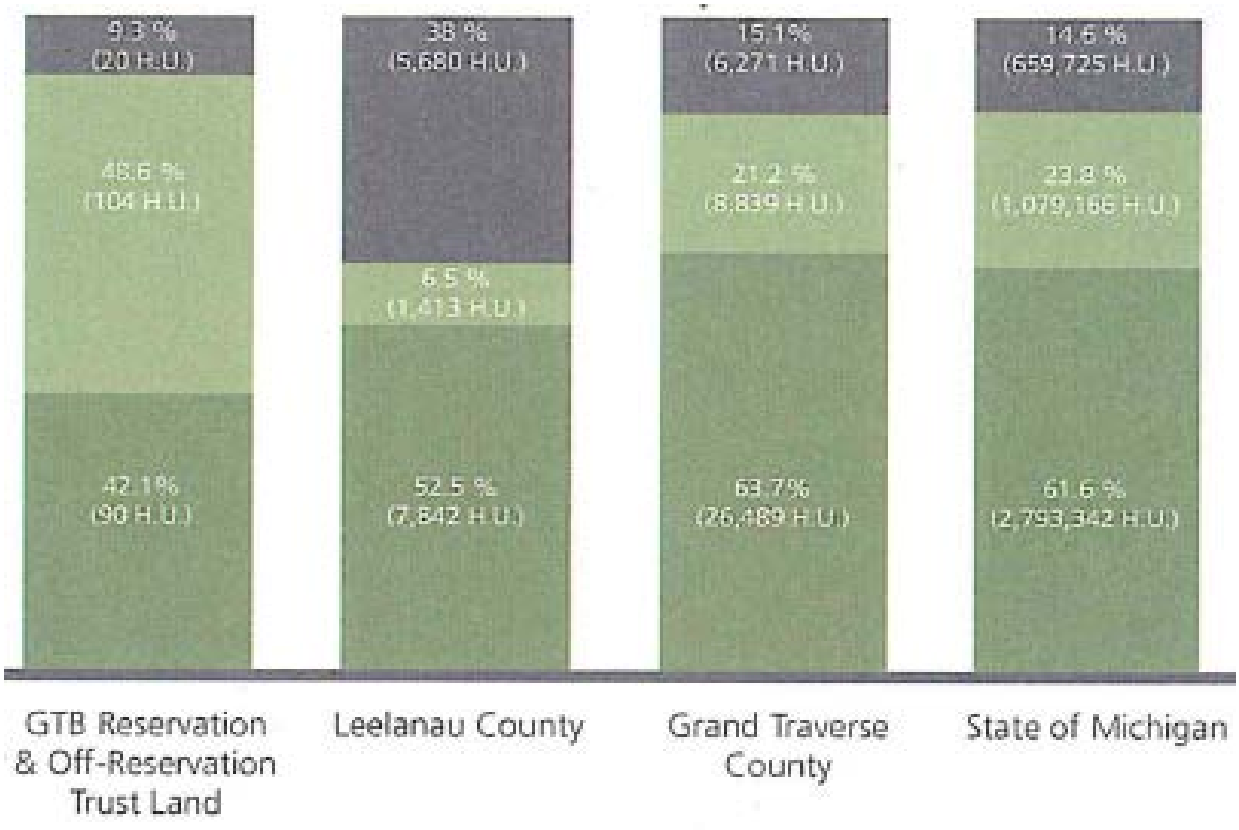
Based on ACS estimates, roughly 34% of the GTB Reservation population has an income of less than $10,000

2006-2010 American Community Survey 5-Year Estimates				
Income	Estimate	Estimate Margin of Error	Percent (%)	Percent Margin of Error
Total households	279	+/-68	-	-
Less than $10,000	94	+/-48	33.7	+/-14.3
$10,000 to $14,999	7	+/-8	2.5	+/-2.9
$15,000 to $24,999	62	+/-28	22.2	+/-8.6
$25,000 to $34,999	27	+/-21	9.7	+/-7.5
$35,000 to $49,999	31	+/-22	11.1	+/-7.3
$50,000 to $74,999	8	+/-8	2.9	+/-2.8
$75,000 to $99,999	39	+/-29	14.0	+/-10.2
$100,000 to $149,999	3	+/-6	1.1	+/-2.3
$150,000 to $199,999	4	+/-6	1.4	+/-2.0
$200,000 or more	4	+/-6	1.4	+/-2.3

Source: U.S. Census Bureau, 2006-2010 American Community Survey 5-Year Estimates
2010 Census Income Data for American Indian Areas are not yet available.

Housing

In 2010, 48.6% and 42.1% of homes on GTB Reservation were renter and owner occupied. Only 9.3% of the housing stock was vacant. Compared to Leelanau and Grand Traverse Counties, along with the State of Michigan, the GTB Reservation has the highest percentage of renters and the lowest number of homeowners as well as the lowest amount of vacancies. Leelanau County has the highest number of vacant homes at 38% which is nearly three times that of the national average of 11.4% Grand Traverse County has occupancy and vacancy percentages similar to the State of Michigan.



VII. Planning Process

Representatives from the Grand Traverse Band (GTB) have been invited to participate in all County Local Planning Team (LPT) meetings where tribal land is owned within the regional planning area for this process. These counties include Antrim, Benzie, Grand Traverse and Leelanau. Other forms of participation included more informal settings such as phone conversations and email communications.

The first set of county planning committee meetings were held in the autumn of 2013 with a defined goal of updating each County's Natural Hazard Mitigation Plan. The LPT for each county served as the oversight committee for the development of the County Natural Hazard Mitigation Plan. The LPT is a committee appointed by the County Board that includes representation from jurisdictions within the county, including response agencies, elected officials, and community groups. Those who participated in the LPT meetings is listed on page 4 of each county's plan.

The LPT reviewed portions of the plan, assisted in development of the risk assessment matrix and finalized the rating of those identified risks. Throughout the course of the past year, the LPT has met several times, typically at least once per month, to discuss updates to the plan, including demographics, event occurrences, vulnerability and risk assessment modifications, and updating the mitigation strategies.

The Natural Hazard Mitigation Plan Update was presented and discussed at several local township meetings, advertised for public comment, and presented to the County Board of Commissioners. As the planning process continued to evolve, individual communities and representatives were sought after for participation and information on matters that directly impacted them. LPT meeting invitations were widely distributed, and as always, these meetings are open to the public, with input from the public welcome. When these meetings were not convenient for those parties whose information was vital to the plan update, individual meetings or discussions were held to gather this information.

Other groups or committees that have offered input throughout the planning process including filling out and/or discussing the risk assessment matrix are EMS service providers, the Sheriff's Departments, Health Departments, Planning Departments Board of Commissioners, Michigan State Police, and individual fire and ambulance departments.

Tribal

In the Code of Federal Regulations (44 CFR 201.7) it states that tribal communities may participate in multi-jurisdictional plans but it also states that "Indian tribal governments that participate in multi-jurisdictional plans, must address all the elements identified in this section to ensure eligibility as a grantee or sub grantee".

Tribal Agencies Involvement

Therefore, the Grand Traverse Band of Ottawa and Chippewa formed their own Local Planning Team (LPT) in order to develop the GTB-HMP. The GTB LPT met on a bi-monthly basis. The GTB Tribal Manager holds monthly Department Manager meetings and all Government Departments have opportunities to share department information, specifically 2/10/16, 3/10/16

and 4/18/2016 to comment on the plan. The GTB Tribal LPT was comprised of tribal leaders including representation from the following Tribal Agencies:

Organization	Department
GTB	Public Safety
GTB	Public Works
GTB	Planning
GTB	Fire
GTB	Information Technology/Cyber Security
GTB	Human Services
GTB	Housing
GTB	Health
GTB	Natural Resources/Environmental
GTB	Office of Management and Budget
GTB	Law Enforcement
GTB	Cultural Department

The identified divisions and agencies are responsible for both ensuring that disasters do not impact local residents, and responding when appropriate. Funding for implementing mitigation strategies will likely derive from local sources, the Bureau of Indian Affairs (BIA) and FEMA.

Throughout the planning process, several references were made during various discussions about the informal networks that exist among individuals, families and communities. When disaster strikes, jurisdictional boundaries begin to fade, and people pull together to respond with resilience. While the tribe does not have all the tools necessary for any job, they rely on and coordinate extensively with the associated Counties. A diagramed Organizational Structure can be seen in Appendix B.

The Grand Traverse Band LPT met several times to identify local hazards, identify local assets, assess vulnerability and perform a risk assessment. And finally the GTB Tribal LPT met to identify goals, priorities, and mitigation strategies. Members of the public were given the opportunity to attend each of the GTB Tribal LPT meetings.

The GTB Local Planning Team consists of public safety, public works, planning, fire, IT cyber security, human services, housing director, health, natural resources/environmental, OMB, law enforcement, and cultural department. GTB LPT meets on a bi-monthly basis. The GTB Tribal Manager holds monthly Department Manager meetings and all Government Departments have opportunities to share department information, specifically 2/10/16, 3/10/16 and 30-Day Public Comment period 3/17/2016 to 4/17/2016 to comment on the plan.

Furthermore, advertisement of community meetings were placed in the January 2016 GTB Newsletter and community meetings were held four times in January 2016 at the four tribal sites with a fifth meeting held 1/28/16 at GTB Medicine Lodge in Peshawbestown, MI.

In addition, the GTB DRAFT Tribal , FEMA questions and County Natural Hazard Mitigation Plans (Antrim, Benzie, Grand Traverse and Leelanau County) were posted on the Grand Traverse Band Tribal website 1/8/2016, under the Emergency Management link accepting comments.

Additional information was requested from the GTB Local Planning Team 2/16/16, 3/11/16 and the GTB Department Managers Meeting 2/10/16 and 3/10/16.

Additionally, the LIHEAP program also provides services to populations defined as vulnerable including those with disabilities, elderly, and children.

The table below lists each of the GTB Tribal LPT meetings:

- January 4th, 2016 LPT/Public Meeting
- January 11th, 2016 LPT/Public Meeting
- January 18th, 2016 LPT/Public Meeting
- January 25th, 2016 LPT/Public Meeting
- January 28th, 2016 LPT/Public Meeting
- February 18th, 2016 LPT Meeting
- March 11th, 2016 LPT Meeting
- April 18th, 2016 LPT Meeting

Public Involvement

Furthermore, the DRAFT GTB-HMP was made available to the public for review and comment for a 30 day period between March 17, 2016 – April 17, 2016. Additionally, the opportunity for the public to both review and comment was made known via newspaper and website

- January 2016 GTB Newsletter
- Grand Traverse Band Government Website – Emergency Management link – 1/8/2016
- GTB LPT Meetings: 8/28/2015, 2/18/2016, 3/11/2016
- GTB Dept. Managers Meetings: 2/10/2016, 3/10/2016

Integration into Existing planning Mechanisms

Existing plans were reviewed and incorporated into the GTB-HMP, where appropriate. The GTB-HMP will augment the current County, Township, Village and Tribal Comprehensive Plans already in place. Portions of the GTB-HMP will be incorporated into other plans where applicable.

A listing of Grand Traverse Band plans and documents that provided information for the Counties Natural Hazard Mitigation Plans follows:

Grand Traverse Band Emergency Action Guide – updated February 24, 2016 Tribal Council Resolution
Grand Traverse Band Long-Range Transportation Plan – March 2014 approved
Grand Traverse Band Master Plan (Land Use Plan) – June 2012 approved
Integrated Resource Management Plan – 2010 approved
Renewable Energy Plan – 2008 approved

VIII. Risk Assessment

Grand Traverse Band (GTB) has many of the same risks as the Counties. GTB representatives were present during the discussions of the natural hazard events that have the potential for impacting GTB lands in each county. Recent hazard events include:

March 2012 Winter Storm Power outage and heavy snow and trees down due to Extreme Winter Weather affecting GTB Tribal Members in Peshawbestown from 3/2 to 3/7. Power returned late in the week for residence and businesses in Peshawbestown.

August 2015 Thunderstorm and High Wind Power Outage affecting GTB Tribal Members and GTB Businesses in Peshawbestown 8/ 2 to 8/5, 2015.

The GTB service area is bordered on the east by Lake Michigan, and strong lake effect storms pummel this region throughout the year, causing downed trees and power outages. The winter conditions of 2013-2015 were especially harsh in the state of Michigan, with Polar Vortex conditions impacting the region causing power outages, and a record number of snow days for schools and offices. Those weather conditions continued across Michigan and the Great Lakes region into early March 2014; Traverse City, Michigan, located in Grand Traverse County, had more snowfall than the rest of the state, including the Upper Peninsula. The extremely cold weather also resulted in unusually deep snow pack and the most extensive ice cover on the Great Lakes since the winter of 1978-79.

In March, 2012, the region was hit with the “storm of the century” as nearly 3 feet of heavy, wet snow blanketed the region. Trees and power lines were tangled over and around treacherous roads. Road crews cleared the way for power workers from Michigan, Ohio, Indiana, and Pennsylvania to sort out the mess, and electricity was finally restored after nearly a week. The winter of 2012-2013 proved to be equally dramatic; local schools have logged an unprecedented 9 snow days. Snow was often accompanied by power outages lasting from a few hours to several days.

On December 2015, Christmas was welcomed with a winter storm and Red Cross warming shelters delivered relief to displaced holiday revelers. Much of the power was restored within 48 hours, but some homes and businesses were still dark over the holiday. Although the GTB Tribal Council was able to provide shelter at the tribe’s Grand Traverse Resort and Spa (GTR&S), many of the vulnerable populations were unable to access the rooms because they could not get transportation to the GTR&S, located 35 miles away. During the month of August 2015 GTB lost power for four days due to straight line winds affecting multiple counties (Grand Traverse and Leelanau

counties) through loss of power and downed trees/limbs, causing significant property damage in the surrounding county in the middle of summer with weather temperatures in the upper eighties. December 23, 2015 GTB lost power in Leelanau, Benzie and Charlevoix counties during the middle of winter for several days and residential homeowners were forced to locate alternative housing until the power was returned creating a hardship for families during the holiday season with limited lodging facilities.

These three weather-related emergencies and multiply times during the past year in 2015 in which GTB has continuously lost power due to weather have exposed GTB's weaknesses in responding to disasters. In response GTB has developed an Emergency Management Plan for the tribal communities, and the addition of the GTB Emergency Shelter Project will enhance assistance to families in crisis. The Peshawbestown Master Plan, designed and approved by tribal members in June, 2012, identifies the need for a Public Safety building services like the GTB Emergency Shelter Project. In addition, GTB developed a 2016 GTB Natural Hazard Mitigation Tribal Plan to address hazard mitigation response due to significant power outages. Generators were identified as a high need to provide public safety response to emergencies for GTB's five facilities deemed essential to preserve life and safety.

Identification of Hazards

The GTB Tribal LPT met on February 18, 2016 and developed the following list of hazards that could potentially affect the Grand Traverse Band of Ottawa and Chippewa reservation or lands owned by the Tribe. The LPT selected the following hazards based on historical records, local knowledge and the estimated potential losses associated with each hazard.

HAZARDS AFFECTING GRAND TRAVERSE BAND OF OTTAWA AND CHIPPEWA			
-	Frequent	Infrequent	Rarely
Blizzard	X		
Hailstorm	X		
Ice Storm	X		
Severe Summer Storms	X		
High winds	X		
Drought		X	
Extreme Heat		X	
Tornado		X	
Flood		X	
Wildfire		X	
Infectious Disease		X	
Invasive Species		X	
Earthquake			X
Coastal Erosion			X

The following priority areas were identified by GTB.

Top Four Natural Hazards Priority Areas

1. Extreme Winter Weather – Countywide heavy snow, extreme temperatures, and concerns regarding power and agriculture loss
Leelanau County experiences frequent heavy snow events due to its location in a "snow-belt" area. Heavy snow events have the potential of shutting down towns and businesses for a significant period of time. Blowing and drifting snow with blizzard conditions cause driving hazards. Ice damage may occur when high winds push lake water and ice past the shoreline, causing damage to public infrastructure and residential property. Extreme winter weather may also adversely affect agricultural production, such as vineyards, which are vital to the County's base economy. Ice damage may occur when high winds push lake water and ice past the shoreline, affecting public infrastructure and residential areas.

2. Severe Weather (High Winds and Tornadoes) - Countywide highlighting seasonal population influx and local festivals
There is a historical record of high wind events and tornadoes in Leelanau County. Damage from straight line winds usually affects multiple counties through the loss of electricity from trees/tree limbs downing power lines; causing widespread property damage; and potentially exposing the public to severe injury or fatality due to flying debris. This is especially relevant as many towns within the County host various seasonal festivals that are critical in contributing to the overall tourist industry economy.

3. Extreme Heat – Community wide, extreme high temperatures, and their affect, particularly on vulnerable populations, i.e. Elderly, children, those in hospitals etc. Extreme heat during the summer months when there is a loss of power resulting in potential loss of life from individuals relying on power for health purposes (oxygen, dialysis) etc.

4. Wildfire - Potential Wildfire/Urban interface - Countywide
Wildfires can cause widespread concerns and disruptions even in cases where physical damages have been prevented. Smoke, closed roadways and infrastructure impacts may interfere with ordinary life, as well as an area's economy and planned events (including tourism). Additional factors that increase fire risk include dead or dying Ash trees as a result of disease/invasive species and human factors such as the number of persons residing, camping, or traveling through the County. The Sleeping Bear Dunes National Lakeshore, which attracts more than 1.5 million visitors annually, is located in a wildfire and development interface area. The SBDNL has a fire suppression policy and is presently developing a Wildfire Management Plan.

Vulnerability

The GTB LPT and Tribal Emergency Planner identified Peshawbestown as particularly vulnerable to flood events, due to its dense population and location along the eastern coast of Lake Michigan. Additionally, the reservation is vulnerable to coastal erosion, similar to problems facing communities located throughout the coastline of Leelanau County. Other hazards, such as those related to temperatures, tornadoes, and precipitation events, have an equal chance of impacting Peshawbestown and other reservation lands.

Natural Hazards Recorded Events

Data for weather events was compiled from the National Oceanic and Atmospheric Administration's (NOAA) website utilizing the following sections:

☐ Weather/Climate Events, Information, Assessments
☐ Climatology and Extreme Events
☐ NOAA Storm Event Database; 1950 to present, local storm reports, damage reports, events checked for Leelanau County included: Flood (Flash Flood, Flood, Lakeshore Flood), Hail (Hail), Snow and Ice (Blizzard, Extreme Cold/Wind Chill, Freezing Fog, Frost/Freeze, Heavy Snow, Ice Storm, Lake-effect Snow, Sleet, Winter Storm, Winter Weather), Tornado (Tornado, Funnel Cloud), Thunderstorm and High Wind (Heavy Rain, High Wind, Lightning, Strong Wind, Thunderstorm Wind), Wildfire (Wildfire)

The following list includes the frequency, dates, and descriptions of the most severe natural hazard events that have occurred within Leelanau County, according to the NOAA Storm Event Database; January 1950 – August 2014. Extreme Winter Weather includes events with ice covering, property damage, and/or up to/over 12 in. of snow. Severe Thunderstorm include 50 knot winds + and property damage figures.

Flooding: 6 events

Table 10: Flood Events for Leelanau County

Month	Year	Location	Effect	Damage
April	***1993***	***County/Region***	***NA***	***$5,000,000***
July	***1999***	***Countywide***	***Secondary roads washed out***	***NA***
September	***2000***	***Countywide***	***Roads and basements flooded***	***$50,000***
April	***2004***	***Countywide***	***Secondary roads washed out***	***NA***
Spring	***2014***	***Countywide***	***High water tables cause localized flooding***	***NA***
Fall	***2014***	***South Lake***	***Flooding caused by heavy rains***	***NA***

Hail: 19 events

Table 11: Hail Events for Leelanau County

Month	Year	Location	Effect	Damage
June	1998	Suttons bay	0.75 in.	NA
May	2000	Leland	1.00 in.	NA
May	2000	Suttons bay	1.00 in.	NA
May	2000	Maple City	1.00 in.	NA
June	2000	Northport	0.88 in.	NA
May	2001	Suttons Bay	1.75 in.	NA
May	2001	Leland	1.00 in.	NA
May	2002	Leland	0.75 in.	
August	2003	Greilickville	0.88 in.	NA

June	2004	Leland	0.75 in.	$5,000
August	2004	Glen Haven	0.75 in.	NA
September	2005	Cedar	0.88 in.	NA
July	2006	Leland	1.00 in.	$50,000
October	2007	Empire Airport	1.00 in.	NA
June	2008	Empire	0.88 in.	NA
June	2008	Hatchs	1.0 in.	NA
July	2008	Cedar	0.88 in.	NA
July	2008	Suttons Bay	0.75 in.	NA
September	2008	Leland	0.88 in.	NA
April	2009	Suttons Bay	0.75 in.	NA
April	2011	Maple City	0.88 in.	NA

Hail (continued)

Month	Year	Location	Effect	Damage
April	2011	Empire	1.00 in.	NA
April	2011	Maple City	1.00 in.	NA
June	2011	Countywide	0.88-1.00 in.	NA
May	2013	Greilickville	1.00 in.	NA
May	2013	Northport	1.00 in.	NA
August	2013	Northport	1.50 in.	NA

Extreme Winter Weather: 112 Events

Table 12: Extreme Winter Weather Events for Leelanau County

Extreme Winter Weather (continued)

Month	Year	Location	Effect	Damage	Other
December	2006	County/Region	5 - 17 in. snow	NA	
January	2007	Region/ Maple City	11 - 13 in. snow	NA	
February	2007	County/Region	-20 to -30 wind chills	NA	Extreme
April	2007	County/Region	6 - 18 in. snow	NA	
November	2007	County/Region	Wind gusts 60 Mph/ trees and power lines down	$3,000	
December	2007	County/Region	Wind gusts 40 - 50 mph/ power outages	NA	
January	2008	County/Region	Wind gusts 40 - 50 mph/ near blizzard conditions	NA	

February	2008	County/Region	Wind gusts 45 mph/ hazardous wind chill/ blizzard conditions/ 1 fatality	NA	Extreme Temp
February	2008	County/Region	1/2 - 1/3 in. ice	NA	Ice
February	2008	Region/Empire	7 - 14 in. snow	NA	
December	2008	County/Region	12 - 17 in. snow	NA	
December	2008	County/Region	8 - 23 in. snow	NA	
March	2009	Region/ Leland	15 in. snow	NA	
December	2009	County/Region	6 - 21.8 in. snow	NA	
December	2010	County/Region	6 - 15 in. snow	NA	
March	2011	County/Region	6 - 15 in. snow	NA	
March	2012	County/Region	6 - 14 in. snow	NA	
April	2012	County/Region	Crop killing frost	$37, 500	Frost/Fr
January	2014	Region/ Suttons Bay	12 - 16 in. snow	NA	
January	2014	County/Region	12 - 16 in. snow/ wind gusts 45 mph	NA	
February	2014	County/Region	-15 to -25 wind chills	NA	Extreme

Thunderstorm and High Wind: 33 Events

Table 13: Storm Events for Leelanau County

Month	Year	Location	Effect	Damage	Other Event
July	1995	Northport	52 knot winds/ trees and power lines down	$10,000	
July	1995	Suttons Bay	52 knot winds/ trees and power lines down	$10,000	
July	1995	Empire	50 knot winds/ trees and power lines down	$2,000	
July	1995	Glen Arbor	50 knot winds/ trees and power lines down	$2,000	
November	1998	Countywide	61 knot winds/ 50 - 90 mph wind gusts/ trees and power lines down/ power	NA	
June	1999	Cedar	50 knots/trees down	NA	

Thunderstorm and High Wind (continued)

Month	Year	Location	Effect	Damage	Other
June	1999	Leland	50 knot winds	NA	
August	2001	Northport	50 knot winds	NA	
October	2001	County/Region	50 knot winds/ trees and power lines down/ power outages	NA	
December	2001	Empire	50 knot winds/ property damage/ power outages	$1,000	

April	2002	Suttons Bay	50 knot winds/ trees and power lines down	NA	
July	2002	Suttons Bay	50 knot winds/ trees and power lines down	NA	
August	2003	Northport	52 knot winds/ trees and power lines down	NA	
November	2003	County/Regi on	68 knot winds/ trees and power lines down/ power outages	NA	
September	2004	Leland	55 knot winds/ trees and power lines down	$6,000	
September	2005	Empire	55 knot winds/ trees down	$5,000	
September	2005	Cedar	55 knot winds/ trees down/ property damage	$2,000	
November	2005	Countywide	50 knot winds/ trees down	$10,000	
November	2005	Countywide	57 knot winds/ wind gusts 66 mph/ trees, power lines, and utility poles down	$25,000	
August	2007	Greilickville	54 knot winds/ trees down/ property destroyed	$10,000	
August	2007	Greilickville	Lightning ignited fire damaging property	$40,000	Lightning
August	2007	Lake Leelana	50 knot winds/ trees down	$1,000	
October	2007	Countywide	43 knot winds/ trees and power lines down	$18,000	
October	2007	Northport	54 knot winds/ trees and power lines down	$6,000	
October	2007	Glen Arbor	52 knot winds/ trees down	$4,000	
November	2007	Countywide	41 knot winds/ trees down	$4,000	
June	2008	Greilickville	52 knot winds/ 60 mph wind gusts	NA	
March	2009	Countywide	50 knot winds/ 60 mph wind gusts	NA	
August	2010	Leland	50 knot winds/ trees down	$4,000	
October	2010	Countywide	64 knot winds/ trees and power lines down/ roof damage	$2,000	
May	2011	Maple City	52 knot winds/ trees down/ roads blocked	$6,000	
June	2011	Countywide	52 knot winds/ trees down	$4,000	
June	2011	Countywide	55 knot winds/ crop damage/ cherry trees destroyed	$8,000 (crop)	
June	2011	Countywide	52 knot winds/ 60 mph wind gusts/ trees and power lines down	$5,000	
August	2013	Glen Lake	52 knot winds/ trees and power lines down	$10,000	

Tornado: 4 events

Table 14: Tornado Events for Leelanau County

Month	Year	Location	Effect	Damage
July	1956	Suttons Bay	NA	NA
July	1977	Countywide	F1/ 8 miles long, 167 yards wide	$25,000
August	1978	Countywide	F1/ 2 miles long, 160 yards wide	$250,000
June	2011	Countywide	EF0/ 0.35 miles long, 75 yards wide	$20,000

Wildfires:
The Michigan Hazard Analysis of 2012 identified around 35 wildfires occurred in Leelanau County from 1981 to
2010.

Other Possible Natural Hazards

Shoreline Erosion:
The Michigan Hazard Analysis of 2012 identifies Leelanau County as a High Risk Erosion Area with the Lake Michigan shoreline at risk. The National Climatic Data Center indicates that there has been no lake surf erosion events reported in Leelanau County since 1950. While there were Governor's Disaster Declarations for shoreline problems in the state in 1985 and 1986, these declarations did not include Leelanau County.

Storm Surges (Seiches) and Rip Currents
Weather-related events can also cause lake fluctuations that can last from several hours to several days. For example, windstorms combined with differences in barometric pressure can temporarily tilt the surface of a lake up at one end by as much as eight feet. This phenomenon is called a storm surge or seiche and can drive lake waters inland over large areas, cause weakening and erosion of shoreline areas, make water travel hazardous, and cause flood damages, deaths, and injuries to occur.

A rip current is a strong flow of water returning seaward from the shore. When wind and waves push water towards the shore, the previous backwash is often pushed sideways. This water streams along the shoreline until it finds an exit back to the sea. The resulting rip current is usually narrow and located between sandbars, under piers or along jetties. The current is strongest at the surface, and can dampen incoming waves, leading to the illusion of a particularly calm area. Rip current speeds are typically 1-2 feet per second. However, speeds as high as 8 feet per second have been measured. Rip currents cause approximately 100 deaths annually in the United States, more than all other natural hazards except excessive heat. In the Great Lakes alone, the average over the last six years is 10 drownings per year caused by rip currents. About 80% of rescues by surf beach lifeguards are due to rip currents. According to the National Climatic Data Center, Michigan has experienced at least 17 deaths and 9 injuries caused by rip currents in just the past 10 years.

Drought
In Northern Michigan's forested regions, drought can adversely impact timber production and some tourism and recreational enterprises. This can also cause a drop in income, which impacts other economic sectors. The biggest problem drought presents, however, is the increased threat of wildfire. Many Northern Michigan counties are heavily forested and are therefore highly vulnerable to drought-related wildfire threats. The most extreme drought was in January 1931, when the Palmer index hit a record low of -8.07. Lengthy drought incidents took place in 1895-1896 (17 months), 1898-1899 (8 months), 1899-1901 (21 months), 1901-1902 (15 months), 1908-1911 (37 months), 1913-1914 (11 months), 1914-1915 (10 months), 1919-1920 (8 months), 1920-1922 (17months), 1925-1926 (17 months), 1929-1931 (28 months), 1935-1936 (20 months), 1955-1956 (13 months), and 1976-1977 (13 months).

Pandemics or other Public Health Emergencies

Naturally occurring pandemics may cause widespread precautions around the world. The Benzie - Leelanau County Health Department created a pandemic influenza plan that serves as a template for responding to a large-scale outbreak of influenza and other highly communicable diseases.

Power Outage

The GTB Facilities Management Department Manager and shift supervisors contact the local utility companies whenever GTB Government loses power. Telephone calls are made to Consumers Energy (Benzie, Leelanau, Grand Traverse county tribal coverage), and Great Lakes Utility Company (Charlevoix and Alden tribal coverage). GTB Tribal Housing Manager and supervisors contact the utility coverage immediately affecting tribal housing units in the six county service areas as well.

The GTB Tribal Manager also maintains contact with the local utility companies due to significant power outages that occur on tribal properties affecting Tribal Government and the community residents. Tribal citizens and other community members contact the utility companies directly from time to time.

Probability of Hazards

There is a possibility that a natural hazard such as hail, thunderstorm and high wind, tornadoes, and snow and ice will affect this area of Michigan on an annual basis. The magnitude and severity depends on the season, which determines temperature, moisture in the air, ice cover on the lakes, etc. Also, the severity of harm and damage from natural hazard events can be connected with tourist activity, the increased pace of second home development, and a general increase in the base population in northwest, Lower Michigan. The geographic impact of the natural hazards' impact has remained the same in Leelanau County.

The areas where natural hazards overlap in Leelanau County can include heavy snow that causes trees and power lines down, and then melting, rain and flooding. Rising water levels with high winds can cause coastal landslides/debris flow/erosion.

Leelanau County Natural Hazards Task Force and Public Input

The Natural Hazards Task Force comprised of the County's Local Planning Team (LPT) which is a collection of first responders and local, regional, and state public entities that ensure the readiness of County entities by recommending equipment purchases, training and exercises, and public education on preparedness issues.
The Task Force meetings were scheduled monthly in 2014, held in various locations throughout the county, and open to the public. Participants analyzed and updated the hazard priority maps, goals & objectives, hazard priority areas, mitigation measures, and the action agenda items.

The general list of hazard priorities and locations of concern was also reviewed and updated by the Task Force:

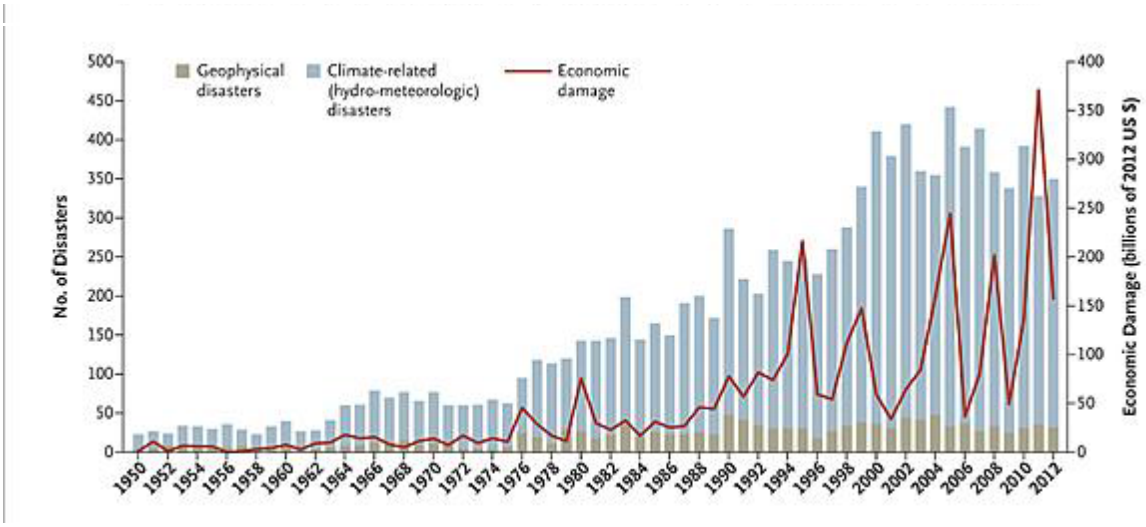
- Extreme winter weather – energy loss (power)
- Slopes and bluffs along Lake Michigan – homes lost near Leland
- Festivals/events and seasonal population – Northport, Cedar, Leland, Glen Arbor, Dune Fest, Suttons Bay, Peshawbestown, Empire, Maple City, Lake Leelanau

- Tornadoes and high winds
- Greilickville – population
- Cedar area – wetlands, not a lot of people, buildings; can release water at Leland dam for Lake Leelanau
- Sugarloaf Resort - Aging electric transformers contain large amounts of hazardous material
- Stormwater and soil erosion
- Dams/Bridges
- Degradation of wetlands
- Infrastructure/cell tower locations
- Wineries/golf courses
- Sleeping Bear Dunes National Shoreline - wildfire management.
- Leelanau Fruit and Cherry Growers – Anhydrous Ammonia
- Electrical transformers at Sugarloaf Resort – Polychlorinated Biphenyls (PCB)

Potential Impacts from Climate Change

According to the New England Journal of Medicine, around 217 million people are affected by natural disasters each year since 1990. The study separates natural disasters into two categories: geophysical; which include earthquakes, volcanoes, landslides, and avalanches, and climate-related; which include meteorological storms, flooding, heat/cold waves, drought, and wildfires. The number of geophysical disasters has remained constant since the 1970's, while climate-related disasters greatly increased. There were three times as many natural disasters between 2000-2009 as there were between 1980-1989, and the report goes on to state that natural disasters, primarily flooding and storms, will become more frequent and severe due to climate change.

Figure 2: 2012 Economic Damages for Disasters in the US



Northwest Lower Michigan depends heavily on groundwater, on freshwater from Lake Michigan, and on rainfall for agriculture, drinking, and industrial uses. As the population in this region continues to grow, the demand for water for all needs increases. The projected changes in rainfall, evaporation, and groundwater recharge rates from climate changes will affect ecosystems and all freshwater users. *Please note that these are predictions from the*

most recent data available regarding climate change and that many feel that any natural hazard events cannot be predicted on a yearly basis.

- Impacts of extreme water levels on Domestic, Municipal, and Industrial Water uses can include compromised or unusable water intakes, sedimentation problems, increased operation and maintenance requirements, and reduction in water quality.
- Historically, the most serious impact to coastal property occurred when water levels were extremely high, as a result of flooding or erosion from severe storms.
- If water levels raise above historic thresholds coastal wetland habitats could be threatened because land beyond a coastline may not be available to transition into new wetland habitats.
- Development and climate change will degrade the flood-absorbing capacities of wetlands and floodplains, resulting in increased erosion, flooding, and runoff polluted with nutrients, pesticides, and other toxins.

Natural Hazards Recorded Events

Data for weather events was compiled from the National Oceanic and Atmospheric Administration's (NOAA) website utilizing the following sections:

- Weather/Climate Events, Information, Assessments
- Climatology and Extreme Events
- NOAA Storm Event Database; 1950 to present, local storm reports, damage reports, events checked for Leelanau County included: Flood (Flash Flood, Flood, Lakeshore Flood), Hail (Hail), Snow and Ice (Blizzard, Extreme Cold/Wind Chill, Freezing Fog, Frost/Freeze, Heavy Snow, Ice Storm, Lake- effect Snow, Sleet, Winter Storm, Winter Weather), Tornado (Tornado, Funnel Cloud), Thunderstorm and High Wind (Heavy Rain, High Wind, Lightning, Strong Wind, Thunderstorm Wind), Wildfire (Wildfire)

Capability

The Grand Traverse Band of Ottawa and Chippewa have multiple Departments that are responsible for carrying out specific functions. These individuals assisted in supplying information necessary to complete the drafting of this planning document. The following Grand Traverse Band Departments are responsible for the following actions:

- GTB Emergency Management Office – Coordination and utilization of resources in the GTB Tribe in an emergency or disaster situation. Maintain GTB Tribal Emergency Action Guide (EAG) and All Hazard Health Plans for Risk Communication, Pandemic Influenza Plan, and Emergency Management MOU's and NIMS compliance requirements. Provides annual emergency preparedness trainings and exercises for government staff, community awareness workshops and tornado shelter. Representation on Region 7 Homeland Security Planning Board, County and Tribal LEPC/LPT Committees, 911 Advisory Board, and Leelanau County EOC Tribal Liaison.

- GTB Fire and Rescue - Fire and Rescue Response, Fire/Rescue training programs; CPR, First Aid, AED Training, FF11, MFR, and EMT. Tribal Facility Inspections (Govt facilities, playground, storage tank, tornado shelters, etc.); Drills (fire and tornado,

evacuation, etc.); Fire Prevention Programs (smoke detectors, fire starter program) and Wildland Fire Management program services.

- GTB Law Enforcement – Police response for all calls for service, criminal investigations, Search and Rescue, SORNA, Emergency Response Team; Emergency Preparedness and Homeland Security (exercises, training, planning), representation on local boards: 911 Advisory Board, Michigan Tribal Law Enforcement Association, Coordinated Community Response Multi-disciplinary Team, LEPC/LPT Board and community police programs.

- GTB Natural Resources– Maintain GTB Spill Plans for Marina and environmental hazards, environmental oversight to maintain surface water quality, wetland and watersheds, streambank stabilization, and resource use agreements to improve resource management. Protect and enhance natural resources and environment. Advocate for clean air and water (Green Initiative and renewable energy). Protection of Great Lakes from invasive species, preservation of wild life and promotion of traditional native ways of living: (fishing, gathering, hunting, trapping).

- GTB Facilities Maintenance - Provides services to GTB Government employees, community members and Tribal Properties. Services over 180,000 square feet of building space and 100,000 square feet of common area space, 60 acres of lawn, summer camp maintenance (Alden), two community parks (Peshawbestown and Antrim), Pow-Wow Grounds and Marina in Peshawbestown.

- GTB Public Works – Supplies wastewater collection and treatment for Peshawbestown and Turtle Creek/Williamsburg communities, Grand Traverse Resort water system and distribution system, Leelanau County Law Enforcement Center water system and waste water system, and Antrim well system testing and Camp Alden well system testing.

- GTB Human Services – Provides human service programs for community members (elders, youth, and vulnerable population). Prevention and intervention services to families, behavioral health services, emergency assistance (utility assistance, emergency food, funeral assistance and emergency medical assistance).

- GTB Cultural Department – Maintains a record of the history of the GTB Anishinaabek language, culture, traditions, and tribal artifacts at the Eyaawing Museum and repatriates Native American remains in sacred burial sites. Elders Program provides meal service and site activities for all Elders in the six county service area.

- GTB Housing Department – Maintains Elders Apartment Complex/Peshawbestown, single and family housing units in six county service areas. Provides Home Ownership programs, emergency home repair and inspections, housing assistance, well-septic program, and home ownership opportunities.

- GTB Tribal Management Department – Includes Tribal Managers Office, Office of Management and Budget, Grant Writing Department, Housing Department, Community Satellite Offices (Benzie, Charlevoix and Traverse City 3 Mile Office) and Human Resources (personnel and employment center).

- GTB Health Services – Provides family practice medical clinic, dental clinic, optical services, health transportation and community health representatives (CHR's) to GTB community members and employees in the six county service areas.

- GTB Education – Maintains the Kitchi Minogining Tribal School, Heritage Library, Children's Camp, and youth service programs, Benodjenh Center (daycare and Early Head Start Program), the Red Cross certified Strongheart Center (civic center with indoor kitchen, gymnasium, showers, sauna, 2nd floor walking track)

- GTB Legal Department – Provides Land & Roads Management Office (property management, transportation planning, road maintenance, road construction, residential tribal lots for members, mapping of GTB properties, land acquisition) and maintains files for GTB 2,700 acres of land of which 1,223 acres are in trust. Legal Department provides legal services for legislation, programmatic functions of GTB Tribal Government, tribal citizens, and coordination with federal, state, and local governments.

Furthermore, the Grand Traverse Band of Ottawa and Chippewa have several existing laws, policies, and regulations that will help prevent or reduce losses through its statutory code which addresses the following:

• Fire and Police statute – delegates the hazard response and mitigation to specific departments with policies and procedures for response and mitigation.
• The GTB has adopted applicable local zoning to address flood plain management.
• The GTB defers to the applicable local zoning flood plain zoning and wetlands management.
• The GTB defers to the State of Michigan's soil erosion standards.
• The GTB Title 14 compiled statutory laws address natural disasters in the following chapters:

- **Chapter 1,** Law Enforcement and Police Force
- **Chapter 2,** Fire and Rescue
- **Chapter 6,** Application of Non-Tribal Law [to the extent that the tribal statutes do not address a subject matter on public safety and regulation, then the GTB references State law as the rules for decisions]
- **Chapter7,** Firearms
- **Chapter 8,** Hazardous Materials Release
- **Chapter 10,** Marina Operations Code

Special cultural sites or sacred sites

The six cultural/historical sites are surrounded by trees which create vulnerabilities to severe winter weather, thunderstorms, high winds and wildland fires.

1-Museum/Tribal artifacts – Offices – Leelanau County – Museum on G.T. Bay in Peshawbestown (soil erosion, severe winter weather, thunderstorms, high winds, wildland fire)

1-Historic Burial Site- Pow-Wow Grounds on Reservation – Leelanau County – (wildland fire, winter weather, soil erosion)

1-Youth Building-Pow-Wow Grounds-Campgrounds- Leelanau County – (wildland fire, winter weather, soil erosion)

1-Kateri Tekakwitha Church-Community Church – Leelanau County – (wildland fire, winter weather, soil erosion)

1-Kewadin Indian Church-Cemetery -Kewadin, MI – (wildland fire, winter weather, soil erosion)

1-Northport Indian Mission Church-Cemetery-Northport, MI- (wildland fire, winter weather, soil erosion)

Existing financial resources for mitigation activities

The GTB has existing financial resources as designated in its annual budgetary process. Additionally, there are potential sources of funding for future mitigation, including financial resources to meet the required nonfederal match.

Since federal recognition in 1980, GTB's capacity and capability to administer services that the membership needs and desires, has grown significantly. The GTB has administered grants and contracts to offer services that include health, police, fire and safety, social services, education, governmental obligations, and strong fiscal management and accounting services. The GTB has operated grants and contracts successfully for more than 25 years and currently operates 104 contracts.

GTB owns and operates 11 tribal businesses (LLC and EDC), including two casinos that fall under the Revenue Allocation Ordinance that help fund government operations and programs. A portion of this revenue is earmarked by the tribal government for grant matches, and emergency response and mitigation activities. The GTB Tribal government is funded by 25% of gaming revenues and Tribal Sales Tax for essential governmental services. Other potential sources of funding include self-governance dollars negotiated with the U.S. Department of the Interior, Bureau of Indian Affairs and grant funding sources. The GTB has existing financial resources as designated in its annual budgetary process. Additionally, there are potential sources of funding for future mitigation, including financial resources to meet the required nonfederal match.

Vulnerable populations

The GTB has 117 tribal housing homes on the Reservation in Peshawbestown with a Benodjenh Day Care/Head Start facility near the Pow-Wow Grounds and an Elders Complex with 16 apartments. This does not include privately owned homes, apartments and residential homes in Peshawbestown.

The Benzie Office and Strongheart Civic Center are currently designated as Red Cross Shelters even though neither facility has generators to support the facility during power outages. The addition of the backup generators at Benzie, Strongheart Civic Center, Medicine Lodge, and Charlevoix Office will enable them to be designated as Red Cross Shelters. The GTB Emergency Operations Center is in the GTB Public Safety Department, which is located in the

lower level of the Medicine Lodge. The Medicine Lodge has a limited capacity small generator to support only the IT Dept in the basement and two rooms in the Tribal Police Department.

Generators are needed to support the entire GTB Medicine Lodge building to enable full-services for the GTB Tribal Police Department, Communications, IT Department, and Health and Dental Clinics, and tribal emergency operations center. The GTB is in need of generator support as back-up power to assist vulnerable populations during power outages, natural disaster, or other emergencies.

Community Emergency Shelters

Currently, the Strongheart Civic Center in Peshawbestown (18,173 sq. ft.), and the Benzie Community Office in Benzonia (10,424 sq. ft., located 50 miles from the reservation) are both certified Red Cross shelters; the Red Cross of Northwest Michigan, serving Benzie, Grand Traverse, Kalkaska, and Leelanau Counties, may utilize the premises in the event of a natural disaster or community emergency. However, neither of these buildings have a generator, so their accessibility is limited.

A copy of the agreement between the American Red Cross of Northwest Michigan and the Grand Traverse Band of Ottawa and Chippewa Indians is located in the GTB Emergency Management Office. The tribal community office in East Jordan (Charlevoix County) is by far the outermost of the tribal facilities; its location is 70 miles from the reservation. The Charlevoix Community Office can hold up to 84 community members and is 3,046 square feet of building space. There currently is not a generator available for this building, nor is it designated a Red Cross Shelter.

GTB will pursue an agreement with the Red Cross of Northern Lower Michigan, serving Antrim, Charlevoix, Cheboygan, and Emmet counties once a generator is in facility. This action could potentially leverage a previously unidentified resource for 274 tribal members in Antrim and Charlevoix counties. Maps of the GTB reservation and trust lands are attached as reference.

The GTB has six tornado shelters in the six county service areas that will hold approximately 20 people each with three tornado shelters in Peshawbestown, and one shelter each at Antrim, Benzie and Charlevoix tribal communities (satellite offices).

In addition, there is one tornado siren located at the Pow-Wow Grounds in Peshawbestown in Leelanau County which has a limited sound range for the immediate area (within sound of Benodjenh Day Care Center and Strongheart Center) and does not reach the entire GTB reservation.

Housing/residents over a ¼ mile range.

Tornado Shelters	Location	Address	Longitude/Latitude	Months of Operation
Peshawbestown - Elder's	West side of Elder's Complex (behind complex)	11201 Ki-Dah-Keh Drive - behind	45* 01'13N – 085* 37' 53W	April-October
Peshawbestown -	East side of Elder's Complex (near cul-de-	11201 Ki-Dah-Keh Drive – front	45* 01'10N – 085* 37' 50W	April-October

Elder's	sac in front)			
Peshawbestown – Elder's	Peshawbestown Road near weather monitoring station	2809 NW Bay Shore Drive .09 mi south of Putnam Rd – West side	45* 01'43N – 085* 37' 40W	April-October
Antrim	Antrim near playground area	Cherry Avenue, Kewadin – Wingash-Mikun, Rapid City	45* 12'32N – 085* 11' 01W	April-October
Benzie	Benzie Community Center near pow-wow grounds	7282 Hoadley Road, Benzonia	44* 35'21N – 086* 05' 34W	April-October
Charlevoix	Charlevoix Community Center near playground area	10085 Wa-Ba-Noong-Mi-Kun	45* 12'33N – 085* 11' 03W	April-October

Grand Traverse Band of Ottawa and Chippewa Asset Inventory

The LTP met and developed a comprehensive asset inventory for the Grand Traverse Band of Ottawa and Chippewa Tribe and all tribal owned lands. The asset inventory identified 73 assets in the following categories:

- Office Buildings
- Satellite Offices
- Camps
- Marinas
- Outbuildings and Sheds
- Parks
- Museums
- Historic, Cultural, Spiritual Sites
- Schools
- Medical Facilities
- Mechanical Facilities
- Emergency Facilities

Furthermore, the group documented the following information for each asset:

- Description of asset
- Owner of the asset or what entity has jurisdiction over each asset
- Location of Asset
- Indicated whether a backup generator exists onsite for each asset

In addition, the group identified the top three vulnerabilities to each asset based on the following:

- Identified Hazards
- Risk Assessment
- History of Hazard Events
- Asset Inventory

And lastly, The Medicine Lodge is an integral part of the GTB infrastructure providing medical, dental, and mental health services to the community. The GTB Police Department and 911

Dispatch is located at the facility and provides 24/7 police protection and emergency services to the surrounding communities (native and non-native).

Finally, the GTB Communications Department and IT Services are housed in the basement, and are vital to providing community information, tribal phone lines, and computer back-up to the GTB Fileserver. GTB has tried annually for years to obtain generators and is unable to obtain adequate funding resources to power the entire building in the event of power loss to the police department and medical clinic and emergency operations center and IT Dept for 25,240 square feet (two floors) of building space.

GTB Housing units in the six county service area has 153 Total Units listed below:

4 low-income in Antrim County
1 Market Rental in Antrim County
8 low-income in Benzie County
10 Market Rentals in Benzie County
13 low-income in Charlevoix County
87 low-income in Leelanau County
11 Mutual Help in Leelanau County
19 Market Rentals in Leelanau County
117 Tribal Housing units in Leelanau County

For the complete GTB Asset Inventory, see Appendix A attached to this document. (Attached GTB Asset Inventory Spreadsheet as Appendix A)

The Medicine Lodge is an integral part of the GTB infrastructure providing medical, dental, and mental health services to the community. The GTB Police Department and 911 Dispatch is located at the facility and provides 24/7 police protection and emergency services to the surrounding communities (native and non-native).

Finally, the GTB Communications Department and IT Services are housed in the basement, and are vital to providing community information, tribal phone lines, and computer back-up to the GTB Fileserver. GTB has tried annually for years to obtain generators and is unable to obtain adequate funding resources to power the entire building in the event of power loss to the police department and medical clinic and emergency operations center and IT Dept for 25,240 square feet (two floors) of building space.

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19 Market Rentals in Leelanau County
117 Tribal Housing units in Leelanau County

IX. Mitigation Goals, Priorities and Strategies

Tribal Goals

Tribal Goals were developed by the Tribal LPT at the March 11th LPT meeting. The Tribal Goals were developed based largely on local objectives in light of current tribal assets, lands, hazards, risks, and vulnerabilities. The table below lists each of the Tribal Goals developed by the Tribal LPT.

Natural Hazards Mitigation Planning Goals for Grand Traverse Band
Goal 1: Increase local participation, strategies, and initiatives in natural hazard mitigation
Goal 2: Integrate natural hazard mitigation considerations into other tribal planning mechanisms
Goal 3: Utilize available resources and apply for other natural hazard mitigation project
Goal 4: Develop and complete natural hazard mitigation projects in a timely manner
Goal 5: Reduce the possibility of damage and losses to existing assets, including people, critical infrastructures, and public facilities
Goal 6: Ensure uninterrupted government and emergency functions in a disaster

Goal 7: Increase public awareness on being prepared before, during and after a disaster, when essential services may not be available

Tribal Priority Areas

Tribal Priority Areas were selected by the LPT at the January 18th LPT meeting. The Priority areas were selected based largely on local knowledge regarding tribal assets, lands, hazards, risks, and vulnerabilities.
The table below lists each of the Priority Areas Selected by the Tribal LPT.

Natural Hazards Mitigation Priority Areas
Priority Area 1: ***Severe Winter Weather –****Community wide heavy snow, extreme temperatures, and concerns about major power and energy*
Priority Area 2: ***Severe Weather (High Winds, Tornadoes) –*** *Community wide, highlighting the seasonal population influx and festivals held in various towns and villages throughout counties.*
Priority Area 3: ***Extreme Heat –*** *Community wide, extreme high temperatures, and their affect, particularly on vulnerable populations, i.e. Elderly, children, those in hospitals etc.*
Priority Area 4: Wildfire – Community wide potential for wildfire/urban interface

Grand Traverse Band representatives were included in the discussions of the hazard mitigation strategies for the GTB-HMP.

Implementation

Each County's Emergency Management Director will work with Grand Traverse Band personnel to
develop detailed implementation strategies, identify required and available resources, assign specific staff roles and responsibilities, and initiate work on each mitigation strategy. Work on the individual strategies will proceed according to their plan priority ranking, available funding, and more detailed cost-benefit analyses.

The Grand Traverse Band tribal government will comply with all applicable Federal statutes and regulations in effect with respect to the periods for which it receives grant funding. This plan will be amended by the Grand Traverse Band tribal government necessary to reflect changes in tribal or Federal laws and statutes as required.

Tribal Mitigation Strategies

The table below lists a broad range of mitigation strategies that was developed by the Tribal LPT based on the identified hazards, and risk assessment. The strategies are listed according to each of the hazards identified by the Tribal LPT. Each of the mitigation strategies was developed to be in alignment with both the Tribal Mitigation Goals and Priorities.

Frequent Natural Hazard	Mitigation Strategies
Blizzard	
1. Ensure the development and enforcement of building codes for roof snow loads.	
2. Discourage flat roofs in areas that experience heavy snows.	
3. Adding building insulation to walls and attics.	
4. As buildings are modified, using new technology to create or increase structural stability	
5. Establishing standards for all utilities regarding tree pruning around power lines.	
6. Burying overhead power lines.	
7. Informing the public about severe winter weather impacts.	
8. Producing and distributing family and traveler emergency preparedness information about severe winter weather hazards.	
9. Including safety strategies for severe weather in driver educating classes and materials.	
10. Encouraging homeowners to install carbon monoxide monitors and alarms.	
11. Educating citizens that all fuel-burning equipment should be vented to the outside.	
12. Identifying specific at-risk populations that may be exceptionally vulnerable in the event of long -term power outages.	
13. Organizing outreach vulnerable populations including establishing and promoting accessible heating centers in the community.	
14. Adopt the International Building Code (IBC) and international Residential Code (IRC)	
15. Retrofitting public buildings to withstand snow loads and prevent roof collapse.	
16. Using snow fences or "living snow fences" (e.g. rows of trees or other vegetation) to limit blowing and drifting of snow over critical roadway segments.	
17. Installing redundancies and loop feeds.	
18. Installing roadway heating technology to prevent ice/snow buildup.	
19. Using designed-failure mode for power line design to allow lines to fall or fail in small sections rather than as a complete system to enable faster restoration.	
20. Planning for and maintaining adequate road and debris clearing capabilities.	
21. Informing the public about severe winter weather impacts.	
22. Consider use of public warning system.	
23. Consider inspections, management and tree assessment programs for public and private homeowners for trees that could pose a potential threat.	
24. Consider producing public service announcements (PSA) regarding the safe use of generators in order to mitigate carbon monoxide poisoning, electric shock, fire etc.	
Hailstorm	
1. Locate tornado safe rooms inside or directly adjacent to houses to prevent hail-induced injuries that may occur when taking shelter during a severe thunderstorm.	
2. Contacting the Insurance Institute for Business and Home Safety (BHS) to learn more about the most appropriate type of roof covering for your geographic region.	
3. Posting warning signage at local parks, county fairs, and other outdoor venues.	
4. Teaching school children about the dangers of hail and how to take safety precautions.	
5. Including measures such as structural bracing, shutters, laminated glass in window panes, and hail resistant roof coverings or flashing in building design to minimize damage.	
6. Improving roof sheathing to prevent hail penetration.	
7. Mailing safety brochures with monthly water bills.	
8. Consider use of public warning system.	
Ice Storm	
1. Promote coordination between Police and Public Works to address hazardous roads following ice storms.	

2. Increase weather radio coverage
3. Distribution of weather radios
4. Purchase emergency generators for police and fire departments, special-needs, facilities, and community shelters, or other facilities.
5. Enhance public awareness on correct safety procedures during snow and ice storms.
6. Stand-by power for water plants, pump stations, booster pumping stations
7. Implement local utility tree trimming program
8. Update disaster response plan if needed
9. Wireless emergency alerts warn anyone in the area with a WEA capable phone in the case of an extreme or imminent danger
10. Shelter for mobile home communities
11. Consider use of public warning system.
12. Consider inspections, management and tree assessment programs for public and private homeowners for trees that could pose a potential threat.
13. Consider producing public service announcements (PSA) regarding the safe use of generators in order to mitigate carbon monoxide poisoning, electric shock, fire etc.
Severe Summer Storms
1. Installing lightning protection devices and methods, such as lightning rods and grounding, on communications infrastructure and other critical facilities.
2. Installing and maintaining surge protection on critical electronic equipment.
3. Developing a lightning brochure for distribution by recreation equipment retailers or outfitters.
4. Mailing safety brochures with monthly water bills.
5. Posting warning signage at local parks.
6. Teaching school children about the dangers of lightning and how to take safety precautions.
7. Consider use of public warning system.
8. Consider inspections, management and tree assessment programs for public and private homeowners for trees that could pose a potential threat.
9. Consider producing public service announcements (PSA) regarding the safe use of generators in order to mitigate carbon monoxide poisoning, electric shock, fire etc.
High Winds
1. Adopting the International Building code (IBC) and International Residential Code (IRC).
2. Adopting standards from International Code Council (ICC) - 600 *Standard for Residential Construction in High-Wind Regions.*
3. Reviewing building codes and structural policies to ensure they are adequate to protect older structures from wind damage.
4. Requiring or encouraging wind engineering measures and construction techniques that may include structural bracing , straps and clips, anchor bolts, laminate or impact-resistant glass, reinforced pedestrian and garage doors, window shutters, waterproof adhesive sealing strips, or interlocking roof shingles.
5. Requiring tie-downs with anchors and ground anchors appropriate for the soil type for manufactured homes.
6. Requiring the use of special interlocking shingles designed to interlock and resist uplift forces in extreme wind conditions to reduce damage to a roof or other structures.
7. Improving nailing patterns.
8. Requiring building foundation design braced elevated platforms, and protections against the lateral forces of winds and waves.
9. Requiring new masonry chimneys greater than 6 feet above a roof to have continuous reinforced steel bracing.
10. Requiring structures on temporary foundations to be securely anchored to permanent

foundations.
11. Using natural environmental features as wind buffers in site design.
12. Incorporating passive ventilation in the building design.
13. Incorporating passive ventilation in the site design. Passive ventilation systems use a series of vents in exterior walls or at exterior windows to allow outdoor air to enter the home in a controlled way.
14. Encouraging architectural designs that limit potential for wind-borne debris.
15. Improving architectural design standards for optimal wind conveyance.
16. Creating a severe wind scenario to estimate potential loss of life and injuries, the types of potential damage, and existing vulnerabilities within a community to develop severe wind mitigation priorities.
17. Using HAZUS to quantitatively estimate potential losses form wind.
18. Establishing standards for all utilities regarding tree pruning around lines.
19. Incorporating inspection and management of hazardous trees into the drainage system maintenance process.
20. Preemptively testing power line poles to determine if they are rotting.
21. Inspecting utility poles to ensure they meet specifications and are wind resistant.
22. Burying power lines to provide uninterrupted power after severe winds, considering both maintenance and repair issues.
23. Creating a severe wind scenario to estimate potential loss of life and injuries, the types of potential damage, and existing vulnerabilities within a community to develop severe wind mitigation priorities.
24. Avoiding use of aerial extensions to water, sewer, and gas lines.
25. Reinforcing garage doors.
26. Avoiding placing flag poles or antennas near buildings. Upgrading and maintaining existing lightning protections systems to prevent roof cover damage.
27. Educating design professionals to include wind mitigation during building design.
28. Upgrading overhead utility lines (e.g., adjust utility pole sizes, utility pole span widths, and/or line strength).
29. Installing safe rooms.
30. Ensuring that school officials are aware of the best area of refuge in school buildings.
31. Instructing property owners on how to property install temporary window coverings before a storm.
32. Using GIS to map areas that are at risk to the wind hazard associated with different conditions and to identify concentrations of at risk structures.
33. Retrofitting or constructing the emergency operations center to FEMA 361 standards.
34. Informing residents of shelter locations and evacuation routes.
35. Protecting traffic lights and other traffic controls from high winds.
36. Converting traffic lights to mast arms.
37. Installing redundancies and loop feeds.
38. Encouraging wind-resistant roof shapes (e.g., hip over gamble).
39. Developing and maintaining a database to track community vulnerability to severe wind.

40. Establishing standards for all utilities regarding tree pruning around lines.
41. Incorporating inspection and management of hazardous trees into the drainage system maintenance process.
42. Anchoring roof-mounted heating, ventilation, and air conditioning units.
43. Avoiding placing flag poles or antennas near buildings. Upgrading and maintaining existing lightning protections systems to prevent roof cover damage.
44. Inspecting utility poles to ensure they meet specifications and are wind resistant.
45. Educating homeowners on the benefits of wind retrofits such as shutters, hurricane clips etc.
46. Consider use of public warning system.
47. Consider inspections, management and tree assessment programs for public and private homeowners for trees that could pose a potential threat.
48. Consider producing public service announcements (PSA) regarding the safe use of generators in order to mitigate carbon monoxide poisoning, electric shock, fire etc.

Infrequent Natural Hazard	Mitigation Strategies
Drought	
1. Identifying available water supplies.	
2. Developing a drought emergency plan.	
3. Developing criteria or triggers for drought-related actions.	
4. Developing a drought communication plan and early warning system to facilitate timely communication of relevant information to officials, decision makers, emergency managers, and the general public.	
5. Developing agreements for secondary water sources that may be used during drought conditions.	
6. Gathering and analyzing water and climate data to gain a better understanding of local climate and drought history.	
7. Establishing a regular schedule to monitor and report conditions on at least a monthly basis.	
8. Regularly checking for leaks to minimize water supply losses.	
9. Improving water supply monitoring.	
10. Checking for leaks in plumbing or dripping faucets.	
11. Identifying factors that affect the severity of a drought.	
12. Determining how the community and its water sources have been impacted by droughts in the past.	
13. Establishing a regular schedule to monitor and report conditions on at least a monthly basis.	
14. Developing agreements for secondary water sources that may be used during drought conditions.	
15. Checking for leaks in plumbing or dripping faucets.	
16. Consider use of public warning system.	
Extreme Heat	
1. Increased tree plantings around buildings to shade parking lots an along public rights-of-way.	
2. Encouraging installation of green roofs, which provide shade and remove heat from the roof surface and surrounding air.	
3. Using cool roofing products that reflect sunlight and heat away from a building.	
4. Educate citizens regarding the dangers of extreme heat and cold and the steps they can take to protect themselves when extreme temperatures occur.	
5. Organizing outreach to vulnerable populations, including establishing and promoting accessible heating or cooling centers in the community.	
6. Requiring minimum temperatures in housing/landlord codes.	
7. Encouraging utility companies to offer special arrangements for paying heating bills, if not already required by state law.	
8. Creating a database to track those individuals at high risk of death, such as the elderly, homeless, etc.	
9. Consider use of public warning system.	
Tornado	
1. Requiring construction of safe rooms in new schools, daycares, and nursing homes.	
2. Encouraging the construction and use of safe rooms in homes and shelter areas of manufactured home parks, fairgrounds, shopping malls, or other vulnerable public structures.	
3. Encouraging builders and homeowners to locate tornado safe rooms inside or directly adjacent to houses to prevent injuries due to flying debris or hail.	
4. Developing a local grant program to assist homeowners who wish to construct a new safe room.	
5. Consulting guidance from FEMA p-320 - Taking Shelter From the Storm: Building a Safe Room For Your Home or Small Business and International Code Council (ICC) - 500 Standard for the Design and Construction of Storm Shelters.	

6. Encourage structural bracing.
7. Encourage use of straps and clips.
8. Encourage use of Anchor bolts.
9. Encourage use of laminated or impact-resistant glass.
10. Encourage use of reinforced pedestrian and garage doors.
11. Encourage use of Window shutters.
12. Encourage use of waterproof adhesive sealing strips.
13. Encourage use of interlocking roof shingles.
14. Educating citizens through media outlets.
15. Conducting tornado drills in schools and public buildings.
16. Teaching school children about the dangers of tornadoes and how to take safety precautions.
17. Distributing tornado shelter location information.
18. Supporting severe weather awareness week.
19. Consider use of public warning system.
20. Consider inspections, management and tree assessment programs for public and private homeowners for trees that could pose a potential threat.
21. Consider producing public service announcements (PSA) regarding the safe use of generators in order to mitigate carbon monoxide poisoning, electric shock, fire etc.
Flood
1. Developing a floodplain management plan and updating it regularly.
2. Mitigating hazards during infrastructure planning. For example decisions to extend roads or utilities to an area may increase exposure to flood hazards.
3. Adopting a post-disaster recovery ordinance based on a plan to regulate repair activity, generally depending on property location.
4. Passing and enforcing an ordinance that regulates dumping in streams and ditches.
5. Obtaining easements for planned and regulated public use of privately-owned land for temporary water retention and drainage.
6. Developing a storm water committee that meets regularly to discuss issues and recommend projects.
7. Forming a regional watershed council to help bring together resources for comprehensive analysis, planning, decision-making, and cooperation.
8. Establishing watershed-based planning initiatives to address the flood hazard with neighboring jurisdictions.
9. Limiting the density of developments in the floodplain.
10. Developing a stream buffer ordinance to protect water resources and limit flood impacts.
11. Prohibiting any fill in floodplain areas.
12. Adopting ASCE 24-05 Flood Resistant Design and Construction. ASCE 24 is a referenced standard in the IBC that specifies minimum requirements and expected performance for the design and construction of buildings and structures in the flood hazard areas to make them more resistant to flood loads and flood damage.
13. Requiring standard tie-downs of propane tanks.
14. Completing a storm water drainage study for known problems areas.
15. Preparing and adopting a storm water drainage plan and ordinance.
16. Preparing and adopting a community wide storm water management master plan.
17. Requiring a drainage study with new development.
18. Designing a "natural runoff" or "zero discharge" policy for storm water in subdivision design.
19. Requiring more trees be preserved and planted in landscape designs to reduce the amount of storm water runoff.
20. Requiring developers to plan for on-site retention basins for excessive storm water and as a

firefighting water source.
21. Encouraging the use of porous pavement, vegetative buffers, and islands in large parking area.
22. Encouraging the use of permeable driveways and surfaces to reduce runoff and increase groundwater recharge.
23. Incorporating the procedures for tracking high water marks following a flood into emergency response plans.
24. Conducting cumulative impact analyses for multiple development projects within the same watershed.
25. Developing a dam failure study and emergency action plan.
26. Obtaining depth grid data and using it to illustrate flood risk to citizens.
27. Developing and maintaining a database to track community exposure to flood risk.
28. Revising and updating regulatory floodplain maps.
29. Participating in NFIP.
30. Completing and maintaining FEMA elevation certificates for pre-FIRM and/or post-FIRM buildings.
31. Revising the floodplain ordinance to incorporate cumulative substantial damage requirements.
32. Advising the public about the local flood hazard, flood insurance, and flood protection measures.
33. Implementing damage reduction measures for existing buildings such as acquisition, relocation, retrofitting, and maintenance of drainage ways and retention basins.
34. Taking action to minimize the effects of flooding on people, property, and building contents through measures including flood warning emergency response and evacuation planning.
35. Installing, re-routing, or increasing the capacity of a storm drainage system.
36. Increasing drainage or absorption capacities with detention and retention basins, relief drains, spillways, drain widening/dredging or rerouting, logjam and debris removal, extra culverts, bridge modification, dike setbacks, flood gates and pumps, or channel redirection.
37. Increasing capacity of storm water detention and retention basins.
38. Increasing dimensions of drainage culverts in flood-prone areas.
39. Requiring developers to construct on-site retention basins for excessive storm water and as a firefighting water source.
40. Providing grassy swales along roadsides.
41. Performing regular drainage system maintenance, such as sediment and debris clearance, as well as detection and prevention of discharges into storm water and sewer systems from home footing drains, downspouts, or sewer pumps.
42. Routinely cleaning debris from support bracing underneath low-lying bridges.
43. Routinely cleaning and repairing storm water drains.
44. Inspecting bridges and identifying if any repairs or retrofits are needed to prevent scour.
45. Incorporating ice jam prevention techniques as appropriate.
46. Dry flood proofing non-residential structures by strengthening walls, sealing openings, or using waterproof compounds or plastic sheeting on walls to keep water out.
47. Elevating roads and bridges above the base flood elevation to maintain dry access. In situations where flood waters tend to wash roads out, construction, reconstruction, or repair can include not only attention to drainage, but also stabilization of armoring of vulnerable shoulders or embankments.
48. Raising low-lying bridges.
49. Flood proofing wastewater treatment facilities located in flood hazard areas.
50. Depending on its infrastructure capabilities, using check valves, sump pumps, and backflow prevention devices in homes and buildings.
51. Using minor structural projects that are smaller and more localized (e.g., floodwalls or small berms) in areas that cannot be mitigation through non-structural activities or where structural

activities are not feasible due to low densities.
52. Using bioengineered bank stabilization techniques.
53. Protecting and enhancing landforms that serve as natural mitigation features (i.e. riverbanks wetlands dunes etc.)
54. Retaining thick vegetative cover on public lands flanking rivers.
55. Encouraging homeowners to purchase flood insurance.
56. Annually distributing flood protection safety pamphlets or brochures to the owners of flood-prone property.
57. Educating citizens about safety during flood conditions, including the dangers of driving on flooded roads.
58. Using outreach programs to advise homeowners of risks to life, health, and safety.
59. Educating the public about securing debris, propane tanks, yard items, or stored objects that may otherwise be swept away by floodwaters.
60. Consider use of public warning system.
61. Consider producing public service announcements (PSA) regarding the safe use of generators in order to mitigate carbon monoxide poisoning, electric shock, fire etc.
Wildfire
1. Installing roof coverings, sheathings, flashing, skylights, roof an attic vents, eaves, and gutters that conform to ignition-resistant construction standards.
2. Installing wall components that conform to ignition-resistant construction standards.
3. Creating buffers around residential and non-residential structures through the removal or reduction of flammable vegetation, including vertical clearance of tree branches.
4. Replacing flammable vegetation with less flammable species.
5. Performing arson prevention cleanup activities in areas of abandoned or collapsed structures, accumulated trash or debris, and with a history of storing flammable materials where spills or dumping may have occurred.
6. Performing maintenance including fuel management techniques such as pruning and clearing dead vegetation, selective logging, cutting high grass, planting fire-resistant vegetation, and creating fuel/fire breaks (i.e., areas where the spread of wildfires will be slowed or stopped by the removal of fuels).
7. Using prescribed burning to reduce fuel loads that threaten public safety and property.
5. Identifying and clearing fuel loads created by downed trees.
6. Installing fire mitigation systems such as interior and exterior sprinkler systems.
7. Performing safe disposal of yard and household waste rather than open burning.
8. Removing dead or dry leaves, needles, twigs, and combustibles from roofs, decks, eaves, porches, and yards.
9. Creating a defensible space or buffer zone cleared of combustible materials around property.
10. Installing and maintaining smoke detectors and fire extinguishers on each floor of their homes or other buildings.
11. Using local fire departments to conduct education programs in schools.
12. Protecting propane tanks or other external fuel sources.
13. Linking wildfire safety with environmental protections strategies (i.e., improving forest ecology, wildlife habitat, etc.).
14. Informing the public about proper evacuation procedures.
15. Consulting Firewise guidance and encouraging or requiring best practices in your community.

16. Routinely inspecting the functionality of fire hydrants.
17. Requiring and maintaining safe access for fire apparatus to wildland-urban interface neighborhoods and properties.
18. Developing partnerships with neighborhood groups, homeowners' associations and others to conduct outreach activities.
19. Keeping flammables, such as curtains, secured away from windows or using heavy fire-resistant drapes.
20. Consider use of public warning system.
21. Consider inspections, management and tree assessment programs for public and private homeowners for trees that could pose a potential threat.
22. Preventing or alleviating wildfires by proper maintenance and separation of power lines as well as efficient response to fallen power lines.
Infectious Diseases
1. Encourage the continued cooperation between Tribal Public Health Department and the Michigan Department of Health and Human Services.
2. Provide public education materials related to the prevention/treatment of infectious diseases.
3. Consider use of public warning system.
Invasive Species
1. Create effective mechanisms to prevent the introduction of invasive species.
2. Create monitoring systems for detecting new infestations.
3. Move rapidly to eradicate newly detected invaders.
4. Consider use of public warning system.

Rarely Occurring Natural Hazards	Mitigation Strategies
Earthquakes	
1. Educating homeowners on safety techniques to follow during and after an earthquake.	
2. Conducting information sessions or other forms of outreach on seismic code provisions for new and existing buildings to enhance code use and enforcement by local architects, engineers, contractors, and code enforcement personnel.	
3. Developing an outreach program to encourage homeowners to secure furnishings, storage cabinets, and utilities to prevent injuries and damage. Examples include anchoring tall bookcases and file cabinets, installing latches on drawers and cabinet's doors, restraining desktop computers and appliances, using flexible connections on gas and water lines, mounting framed pictures and mirrors securely, and anchoring and bracing propane tanks and gas cylinders.	
4. Supporting financial incentives, such as low interest loans or tax breaks, for home and business owners who seismically retrofit their structures.	
5. Collecting geologic information on seismic sources, soil conditions, and related potential hazards.	
6. Maintaining a database to track community vulnerability to earthquake risk.	
7. Establishing a school survey procedure and guidance document to inventory structural and non-structural hazards in and around school buildings.	
8. Requiring bracing of generators, elevators and other vital equipment in hospital.	
9. Developing an outreach program about earthquake risk and mitigation activities in homes, schools, and businesses.	
10. Adopting and enforcing updated building code provisions to reduce earthquake damage risk.	
11. Adopting the International Building Code (IBC) and International Residential Code (IRC).	
12. Creating an earthquake scenario to estimate potential loss of life and injuries, the types of potential damage, and existing vulnerabilities within a community to develop earthquake mitigation priorities.	
13. Consider use of public warning system.	
14. Consider producing public service announcements (PSA) regarding the safe use of generators in order to mitigate carbon monoxide poisoning, electric shock, fire etc.	
Coastal Erosion	
1. Developing an erosion protection program for high hazard areas.	
2. Using a rock splash pad to direct runoff and minimize the potential for erosion.	
3. Using GIS to identify concentrations of at-risk structures.	
4. Using a hybrid of hard/soft engineering techniques (i.e. Combine low profile rock rubble oyster reefs or wood structures with vegetative planting or other soft stabilization techniques.	
5. Developing a brochure describing risk and potential mitigation techniques.	
6. Prohibiting removal of natural vegetation from dunes and slopes.	
7. Planting mature trees in the coastal riparian zone to assist in dissipation of the wind force in the breaking wave zone.	
8. Adopting sediment and erosion control regulations.	
9. Adopting zoning and erosion overlay districts.	
10. Employing erosion control easements.	
11. Prohibiting development in high -hazard areas.	
12. Developing and implementing an erosion management plan.	
13. Developing and maintaining a database to track community vulnerability to erosion.	
14. Implementing marine riparian habitat reinstatement or revegetation.	

15. Notifying property owners located in high risk areas.
16. Consider use of public warning system.

IX. NATURAL HAZARDS MITIGATION GOALS AND OBJECTIVES

The mission of the Grand Traverse Band Natural Hazards Mitigation Plan is to protect the health and safety of the public and property in the County which includes prevention of injury, loss of life, property damage, breakdown in vital services like transportation and infrastructure, economic slumps, maintain tourist base, and liability issues. This is done by taking action to permanently eliminate or reduce the long-term risks from natural hazards.

Specific goals and objectives have been established based upon the community's natural hazards analysis, as well as input from the Task Force participants and the public through meetings, request for comments on the draft plan, and the presentation of the plan to the Grand Traverse Band Local Planning Team.

Goal 1: Increase whole community participation, strategies, and initiatives in natural hazards mitigation

- Encourage cooperation and communication between planning and emergency management officials
- Encourage additional local governmental agencies to participate in the hazard mitigation process
- Encourage public and private organizations to participate, including organizations who advocate for individuals with functional or access needs
- Encourage use of the "Firewise Communities Program" (www.firewise.org) which offers both workshops and web-based interactive training geared toward homeowners, forestry professionals, firefighters and others on a variety of wildfire safety topics.

Goal 2: Integrate hazard mitigation considerations into the community's comprehensive planning process:

- Enforce and/or incorporate hazard mitigation provisions in building code standards, ordinances, and procedures; and into the bands comprehensive master plan
- Create or update zoning ordinances to reflect any new regulations
- Incorporate hazard mitigation into basic land use regulation mechanisms
- Incorporate hazard area classifications into standard zoning classifications
- Develop community education and warning systems
- Integrate hazard mitigation into the capital improvement planning process so that public infrastructure does not lead to development in hazard areas
- Encourage BIA Roads agencies to review local roads, bridges, dams, and related transportation infrastructure for hazard vulnerability

Goal 3: Utilize available resources and apply for additional funding for hazard Mitigation:

- Provide a list of desired community mitigation measures to the State for possible future funding
- Encourage the application for project funding from diverse entities

Goal 4: Develop and complete hazard mitigation projects in a timely manner

- Encourage public and business involvement in hazard mitigation projects

IDENTIFICATION AND SELECTION OF MITIGATION STRATEGIES

Selection of Feasible Mitigation Strategies

A set of evaluation criteria was developed to determine which mitigation strategies were best suited to address the identified problems in Leelanau County.

- The measure must be technically feasible.
- The measure must be financially feasible.
- The measure must be environmentally sound and not cause any permanent, significant environmental concerns.
- The measure must be acceptable to those participating in the strategy and/or primarily affected by the strategy.

By anticipating future problems, the County can reduce potential injury, structure losses, loss of power, such as electric and gas, and prevent wasteful public and private expenditures.

Priority Area 1: Extreme Winter Weather –heavy snow, extreme temperatures, and concerns regarding power and agriculture loss

Snow load Mitigation Strategies					
Strategy	Estimated Timeframe	Cost Estimate	Potential Funding Source	Implementation Priority	Lead Agency
Snow load design standards – develop planning grant for a study of snowfall patterns and occurrence of damage	3 Years	$10,000-50,000	See Appendix C.	2	GTB Emergency Management Office
Public education and awareness (National weather Service Weather Spotter classes offered free of charge at the Emergency Operations Center)	1 Year	$2,000-10,000	See Appendix C.	1	GTB Emergency Management Office
Building Code enforcement for new construction	5 Years	$50,000-100,000	See Appendix C.	3	GTB Emergency Management Office

Priority Area 2: Severe Weather (High Winds and Tornadoes) - highlighting seasonal population influx and local festivals

High Winds and Tornado Mitigation Strategies					
Strategy	Estimated	Cost	Potential	Implementation	

	Timeframe	Estimate	Funding Source	Priority	
Develop and implement mutual support and aid practices with surrounding communities	5 Years	$2,000-10,000	See Appendix C.	2	GTB Emergency Management Office
Tree management by power companies on power line easements	3 Years	$10,000-50,000	See Appendix C.	3	GTB Emergency Management Office
Public education	1 Year	$2,000-10,000	See Appendix C.	1	GTB Emergency Management Office
Completion of Pre-event Plans for all festivals and events (3 completed in 2015)	3 Years	$2,000-10,000	See Appendix C.	5	GTB Emergency Management Office
Suggest that events have an evacuation plan	3 Years	$2,000-10,000	See Appendix C.	4	GTB Emergency Management Office
Building Code enforcement for new construction	5 Years	$10,000-50,000	See Appendix C.	6	GTB Emergency Management Office

Priority Area 3: Severe Heat.

Severe Heat Mitigation Strategies					
Strategy	Estimated Timeframe	Cost Estimate	Potential Funding	Implementation Priority	

			Source		
Increased tree plantings around buildings to shade parking lots an along public rights-of-way.	3 Years	$10,000-50,000	See Appendix C.	1	GTB Emergency Management Office
Encouraging installation of green roofs, which provide shade and remove heat from the roof surface and surrounding air.	1 Year	$2,000-10,000	See Appendix C.	2	GTB Emergency Management Office
Using cool roofing products that reflect sunlight and heat away from a building.	1 Year		See Appendix C.	3	GTB Emergency Management Office
Educate citizens regarding the dangers of extreme heat and cold and the steps they can take to protect themselves when extreme temperatures occur.	1 Year	$2,000-10,000	See Appendix C.	4	GTB Emergency Management Office
Organizing outreach to vulnerable populations, including establishing and promoting accessible heating or	1 Year	$2,000-10,000	See Appendix C.	5	GTB Emergency Management Office

cooling centers in the community.					
Requiring minimum temperatures in housing/landlord codes.	5 Years	$10,000-50,000	See Appendix C.	6	GTB Emergency Management Office
Encouraging utility companies to offer special arrangements for paying heating bills, if not already required by state law.	3 Years	$2,000-10,000	See Appendix C.	7	GTB Emergency Management Office
Creating a database to track those individuals at high risk of death, such as the elderly, homeless,	3 Years	$2,000-10,000	See Appendix C.	8	GTB Emergency Management Office

Priority 4: Wild Fire - Potential wildfire/urban interface

Wildfire Mitigation Strategies					
Strategy	Estimated Timeframe	Cost Estimate	Potential Funding Source	Implementation Priority	
Public education and awareness activities such as programs and brochures regarding fuel	1 Year	$2,000-10,000	See Appendix C.	1	GTB Emergency Management Office

management, proper vegetation, fire breaks					
Continue enforcement of state fire codes regarding setback requirements	1 Year	$2,000-10,000	See Appendix C.	2	GTB Emergency Management Office
Public education utilizing the Michigan Department of Natural Resources flyers and the Federal Emergency Management Administration information at parks and campgrounds	1 Year	$2,000-10,000	See Appendix C.	3	GTB Emergency Management Office
Assess fire suppression access and make improvements	3 Years	$10,000-50,000	See Appendix C.	4	GTB Emergency Management Office
Research the Department of Natural Resources' State Forest wildfire/urban interface rules or plan	3 Years	$10,000-50,000	See Appendix C.	5	GTB Emergency Management Office

Additional Mitigation Strategies

- Collaborate with governmental entities such as county, townships, and villages
- Organizations, businesses, and the public
- Develop a multi-hazard warning plan and strategies for festivals/events
- Develop mutual support and aid from surrounding communities
- Incorporate the Plan's hazard mitigation concepts, strategies, and policies into existing elements of GTB General Plan

The Grand Traverse Band identified several top natural hazard priority areas across all counties in the tribe's service areas: extreme winter weather, severe high winds and thunderstorms countywide. The first mitigation strategy is to establish emergency shelters with generators to reduce loss of life, prevent injury and maintain vital services for communications for emergency services, shelters, public warning systems and safety of community members and businesses.

There are approximately 650 residents in tribal housing; this does not factor in the hundreds of homeowners and families who reside on/in the reservation and trust lands. All housing residents and their families in the surrounding communities are primarily residential, and at least 51% of the residents are low-to-moderate income persons.

Top Four Natural Hazards Priority Areas

1. **Extreme Winter Weather – Countywide heavy snow, extreme temperatures, and concerns regarding power and agriculture loss**

   Leelanau County experiences frequent heavy snow events due to its location in a "snow-belt" area. Heavy snow events have the potential of shutting down towns and businesses for a significant period of time. Blowing and drifting snow with blizzard conditions cause driving hazards. Ice damage may occur when high winds push lake water and ice past the shoreline, causing damage to public infrastructure and residential property. Extreme winter weather may also adversely affect agricultural production, such as vineyards, which are vital to the County's base economy. Ice damage may occur when high winds push lake water and ice past the shoreline, affecting public infrastructure and residential areas.

2. **Severe Weather (High Winds and Tornadoes) - Countywide highlighting seasonal population influx and local festivals**

   There is a historical record of high wind events and tornadoes in Leelanau County. Damage from straight line winds usually affects multiple counties through the loss of electricity from trees/tree limbs downing power lines; causing widespread property damage; and potentially exposing the public to severe injury or fatality due to flying debris. This is especially relevant as many towns within the County host various seasonal festivals that are critical in contributing to the overall tourist industry economy.

3. **Erosion affecting Slopes and Bluffs near Lake Michigan communities; and Wetland loss Countywide**

   Shoreline or soil erosion hazards involve the loss of property or necessitate the relocation of homes as sand or soil is removed by flowing water (lake, river, etc.) and carried away over time. The foundation of a structure, or underground utility pipes in the area may become fully exposed and vulnerable to weather, extreme temperatures, water damage, or other sources of risk. Roadways along the shoreline may experience bank erosion which contributes to cracking and overall structural instability.

4. **Potential wildfire/urban interface - Countywide**

   Wildfires can cause widespread concerns and disruptions even in cases where physical damages have been prevented. Smoke, closed roadways, and infrastructure impacts may interfere with ordinary life, as well as an area's economy and planned events (including tourism). Additional factors that increase fire risk include dead or dying Ash trees as a result of disease/invasive species and human factors such as the number of persons residing, camping, or traveling through the County.

   The Sleeping Bear Dunes National Lakeshore, which attracts more than 1.5 million visitors annually, is located in a wildfire and development interface area. The SBDNL has a fire suppression policy and is presently developing a Wildfire Management Plan.

X. Maintenance, Monitoring, and Implementation

The Grand Traverse Band will monitor projects in accordance with grant management standards, including progress reports and regular financial reviews from the accounting department to be completed throughout the lifecycle of the project.

Grand Traverse Band will continue to be a participant in County plan updates as well as updating its own plan every five years. As such, Counties will work with tribal representatives to maintain and update their information when it is warranted. Grand Traverse Band will continue to have an open seat on County's LPT/LEPC.

The Grand Traverse Band Natural Hazard Mitigation Plan will have a complete review at least every five (5) years to identify and include significant changes that would affect the mitigation strategies identified in the plan. The plan will be evaluated to ensure that increased development, increased exposure to particular hazards and the development of new mitigation capabilities or techniques, as well as changes to federal and/or state legislation are incorporated into the implementation of, and revisions to, the plan.

- The Planning Process will be scheduled for review annually by the LPT
- The Planning Area information will be updated when new data becomes available, or with updates to area Comprehensive Plans. This will be scheduled for review at least every five years.
- The Risk Assessment section will be reviewed by Grand Traverse Band Emergency Management and the LPT/LEPC annually. Revisions will be forwarded to Michigan State Police
- Mitigation Strategies will be reviewed annually by the, Grand Traverse Band
- The Plan Maintenance section will be reviewed every five years in conjunction with plan revisions.

The plans will also be reviewed by the LPT following any major public sector damage sustained due to natural disaster or a disaster declaration to revise the plan to identify and document the storm events, as well as to reflect additional mitigation strategies or revisions to priorities identified in the plan.

Throughout the ongoing plan **maintenance**, the public will have the opportunity to provide input and feedback on the plan. Copies of the plan will be made available to the public through county offices. The plan may also be obtained electronically. A minimum of one public hearing will be held during each five-year evaluation and update. These hearings will provide the public with a forum for which they may express concerns, opinions or ideas about natural hazard planning and identified mitigation strategies.

Grand Traverse Band Emergency Management will review the plan every five years and will monitor progress of all mitigation projects and will update those strategies in plan updates. Newly identified mitigation needs will be addressed through the development of additional goals, objectives, or strategies, as applicable. If changes in implementation priority are deemed necessary, the rationale will be documented.

Revisions and updates will be distributed for review and approval to the Grand Traverse Band Emergency Management Department, municipalities, and implementation partners. Plan revisions will be made available to the general public for review and comment during the plan updating process. Public comment on revisions and updates also will be solicited through public outreach efforts that may include open houses, public meetings, press releases, websites or displays at community events. During this process, Counties will work to ensure that Grand Traverse Band representatives are involved with the update, and ensure representatives are communicating with and gathering input from the public living on the reservation, as well as the Tribal Council. This will likely be accomplished through Tribal Council meetings, as well as community-wide events**.**

The Grand Traverse Band LPT will have oversight of the GTB-HMP. As described previously, the LPT is comprised of representatives from the Grand Traverse Band, and Leelanau County. LPT meetings are always

posted and are open, with public attendance and input invited. Committee members may monitor the status of mitigation projects by evaluating implementation actions and processes, identifying those that have worked well, difficulties encountered, and making suggestions for revisions to the mitigation strategies as necessary. This process will require significant coordination with LPT and other jurisdictions and agencies identified in the mitigation strategies.

Incorporation

Information from these two separate processes were used to incorporate the plans into each other. In addition, tribal regulations were reviewed during the creation of this plan to ensure that the mitigation plan could be incorporated and adhered to. As other tribal plans are created or updated, appropriate information contained in the GTB-HMP will be incorporated into the planning procedures of these documents.

Many committees have some personnel overlap within the GTB organization. It will be helpful to have cross-committee representation to discuss and incorporate elements of planning documents into one another. Committee meetings and Tribal Council members are open to the public. In addition, LPT meetings where the County Natural Hazard Mitigation Plan is discussed and developed are all open to the public. Public input at these meetings is appreciated.

Committee meetings and Tribal Council meetings are open to the public. In addition, LPT meetings where the GTB-HMP was discussed and developed were all open to the public.

XI. Maps

A. Peshawbestown Address Map
B. Tribal Properties in Six County Service Area
C. GTB Region Map with Trust and non-trust properties

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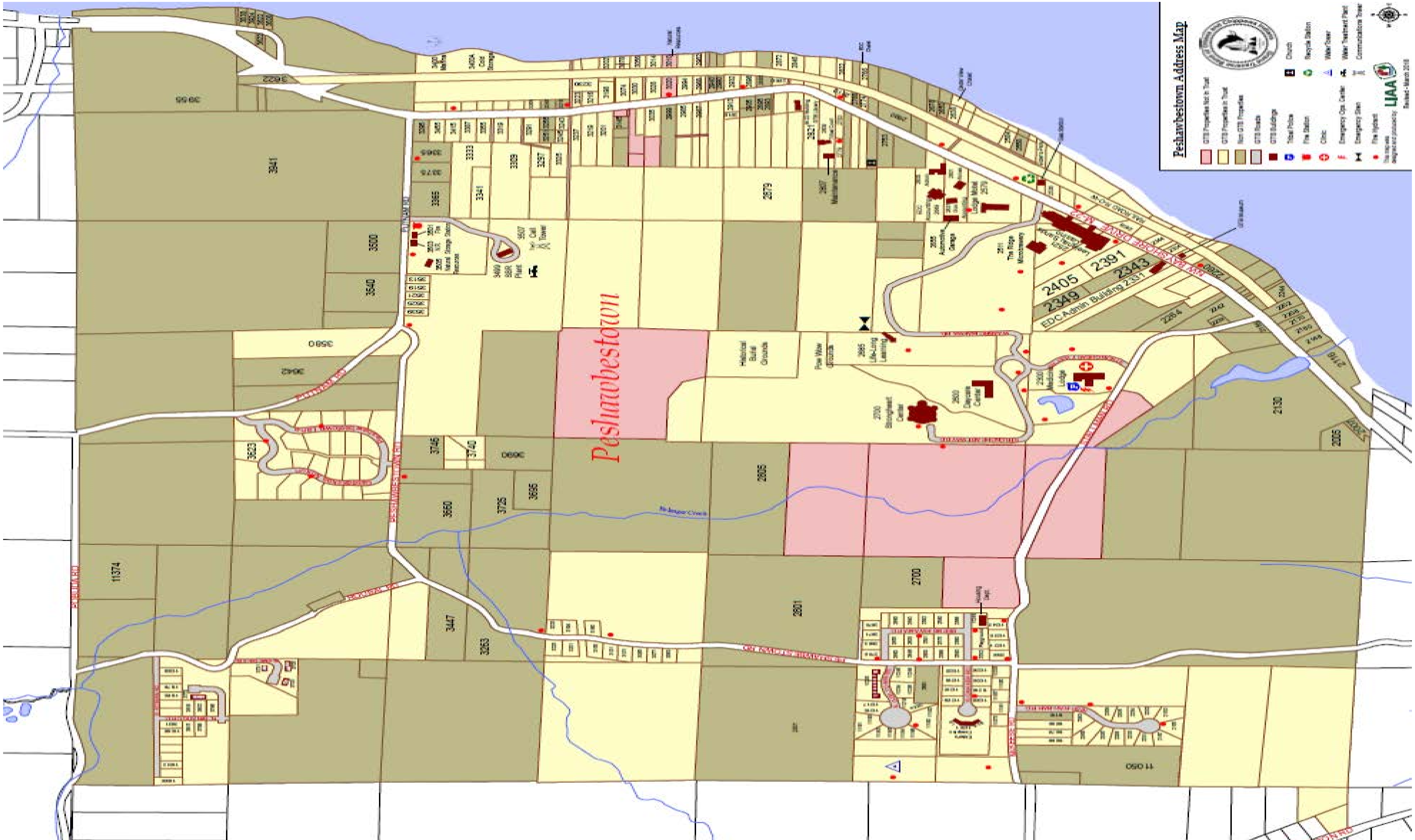
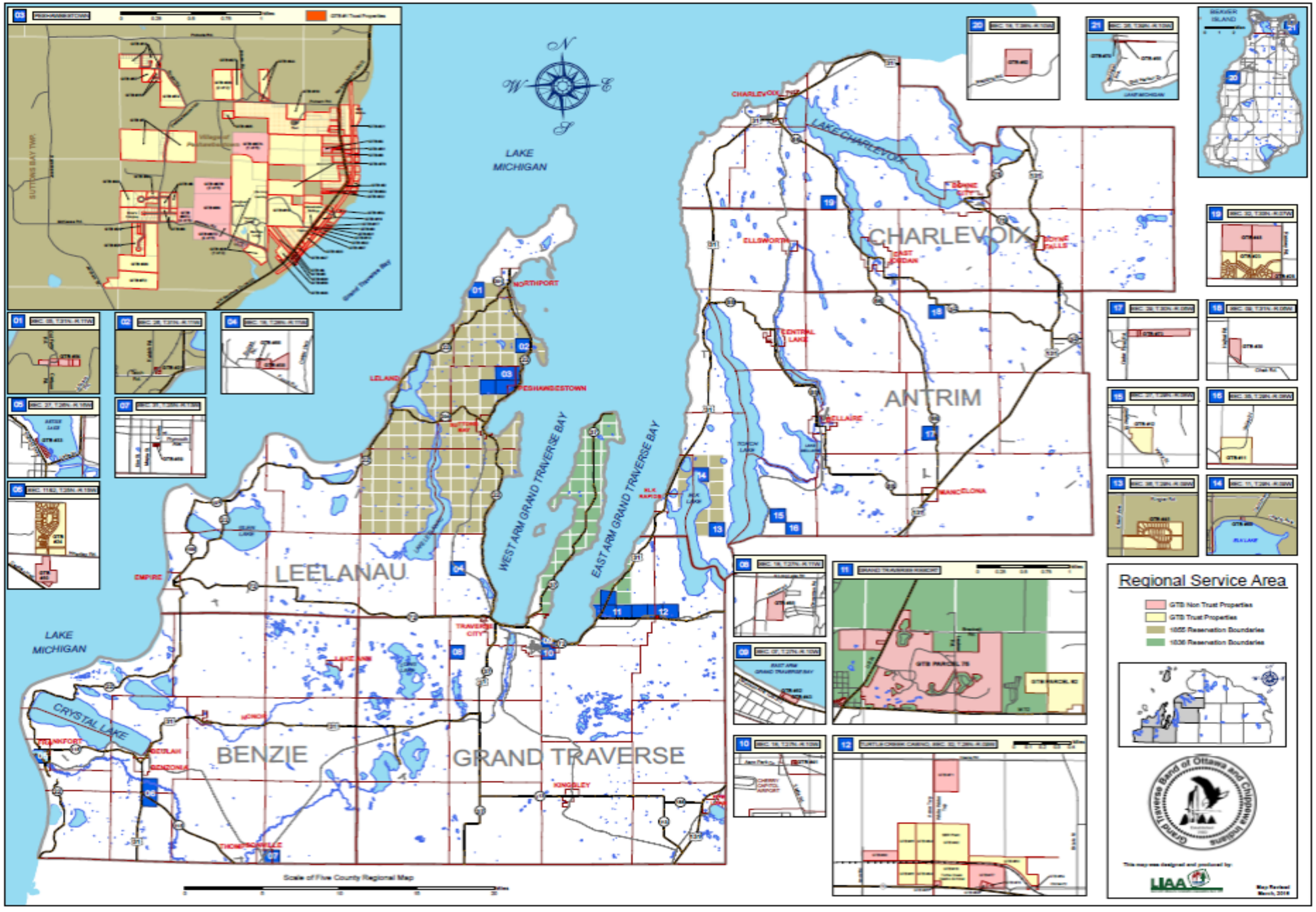
A. Peshawbestown Address Map



B. Tribal Properties in Six County Service Area

C. GTB Region Map with Trust and non-trust properties



Public Outreach

January 16th Tribal Newsletter

Grand Traverse Band of Ottawa and Chippewa Indians

Natural Hazard Mitigation Plan (Tribal Annex)

TRIBAL COMMUNITY NOTICE

The Grand Traverse Band of Ottawa and Chippewa Indians Emergency Management Office will conduct tribal community meetings in January 2016 to gather comments for the GTB Natural Hazard Mitigation Tribal Annex, a supplement to the Leelanau, Benzie and Grand Traverse County Natural Hazard Mitigation Plans.

The Natural Hazard Mitigation Plan (Tribal Annex) outreach meetings are to gather tribal community comments on natural hazards that have or may occur on tribal lands and identify local risks and vulnerabilities to prevent injury, loss of life, property damage, and promote and support prevention or hazard mitigation planning.

Meetings have been set for January 2016:

Monday, January 4, 2016 - Peshawbestown / Housing Office 5-6 pm;

Monday, January 11, 2016 – Charlevoix Office 5-6pm;

Monday, January 18, 2016 – Traverse City Office 5-6 pm and

Monday, January 25, 2016 – Benzie Office 5-6 pm

Thursday, January 28, 2016 – Peshawbestown / Medicine Lodge 12-1 pm

- You can access the DRAFT GTB Hazard Mitigation Tribal Annex Plan on the GTB website on our Home Page under Department 2 Public Safety Department; select Emergency Management, Tribal comment period for GTB Tribal Annex Natural Hazard Mitigation Plan Tribal Annex.
- Written comments will be accepted until Wednesday, February 3, 2016 submitted to:

  Grand Traverse Band of Ottawa and Chippewa Indians
  Emergency Management Office - Natural Hazard Mitigation Plan (Tribal Annex)
  2605 N. West Bay Shore Drive, Peshawbestown, MI 49682
- Draft copies are also available for review at the Grand Traverse Band Emergency Management Office, Medicine Lodge and GTB Tribal Police Department, 2300 N. Stallman Rd. Peshawbestown, MI.

Contact Information:
GTB Public Safety Department Manager (231) 534-7111

GTB Website Emergency Management Posting

Emergency Management
Fire and Rescue
SORNA Information
Tribal Police
Tribal Prosecuter
Tribal Victims Assistance

DISASTER HERO

Emergency Preparation for KIDS! (click here)

Emergency Management

Grand Traverse Band of Ottawa and Chippewa Indians

Emergency Management

The Grand Traverse Band (GTB) Emergency Management Office is located in the Medicine Lodge at 2300 N. Stallman Road, Peshawbestown, MI, approximately 4 miles north on M22 from Suttons Bay.

The GTB Tribal Emergency Management Office works on emergency preparedness initiatives for the Tribal Government. The Tribal Emergency Management Office works collaboratively with Leelanau County 911 Center on tribal, county and state of emergency events for Leelanau County as well as cooperates with surrounding counties of Antrim, Benzie, Charlevoix, Grand Traverse, and Manistee counties on emergency preparedness.

The Tribal Emergency Operations Center (EOC) is not staffed on a full-time basis but will open periodically for simulated exercises as well as real events that occur within Peshawbestown. During these events the EOC will be staffed by representatives from tribal and local organizations to collaborate on real time events. The goal of GTB Emergency Management Office is to work collaboratively with local county Emergency Management Offices on preparedness initiatives for each area of Antrim, Benzie, Charlevoix, Grand Traverse, Leelanau and Manistee counties and surrounding counties in the northwest region of Lower Peninsula of Michigan. GTB Emergency Management Office collaborates with GTB Tribal Government Departments to prepare for natural and man-made disasters through exercises and trainings and continually updating GTB Emergency Operations Plans.

Every county has links to Emergency Management information to assist citizens to better prepare themselves for inclement weather conditions, unexpected emergencies or disaster location of emergency shelters in those counties. The Grand Traverse Band has six emergency shelter locations for Peshawbestown, Antrim, Benzie and Charlevoix. (See Tornado Shelter Locations link listed below). Currently Leelanau County has a link of **"Where to Go in an Emergency" for emergency shelter locations in Leelanau County, if needed.** For additional emergency preparedness information for **Community and Family Preparedness** click on website links to assist community members to plan for family emergencies and weather related events. Indian Country Ready.gov or FEMA.gov has links to Severe Weather sites: Tornados, other Natural Disasters and general emergency guidelines.

TRIBAL COMMUNITY NOTICE for the Grand Traverse Band of Ottawa and Chippewa Indians (GTB) Natural Hazard Mitigation Plan Tribal Annex.

The GTB Emergency Management Office will conduct tribal community meetings in January 2016 to gather comments for the GTB Natural Hazard Mitigation Tribal Annex, a supplement to the Benzie, Grand Traverse and Leelanau County Natural Hazard Mitigation Plans. The community meetings are to gather tribal comments on natural hazards that have or may occur on tribal lands and identify local risks and vulnerabilities to prevent injury, loss of life, property damage, and promote and support prevention or hazard mitigation planning. Listed below are the Natural Hazard Mitigation Elements to be addressed to expand the GTB Tribal Hazard Mitigation Plan Annex.

Meetings:

Monday, January 4, 2016 - Peshawbestown / Housing Office 5:00-6:00 PM;

Monday, January 11, 2016 - Charlevoix Satellite Office 5:00-6:00 PM;

Monday, January 18, 2016 - Traverse City Office 5:00-6:00 PM;

Monday, January 25, 2016 - Benzie Satellite Office 5:00-6:00 PM; and

Thursday, January 28, 2016 - Peshawbestown / Medicine Lodge 12:00-1:00 PM

You can access the DRAFT GTB Natural Hazard Mitigation Tribal Plan Annex and Elements questions required to expand GTB Tribal Annex. Also included as reference are the County Plans listed below. Written comments will be accepted until Wednesday, February 3, 2016 submitted to: Grand Traverse Band of Ottawa and Chippewa Indians, Emergency Management Office - Natural Hazard Mitigation Plan (Tribal Annex), 2605 N. West Bay Shore Drive, Peshawbestown, MI 49682. Draft copies are also available at the GTB Emergency Management Office, Medicine Lodge and GTB Tribal Police Department, 2300 N. Stallman Rd., Peshawbestown, MI. For more information contact: GTB Public Safety Department Manager (231) 534-7111.

GTB Tribal Annex - Natural Hazard Mitigation Plan

2016 Leelanau County Natural Hazard Mitigation Plan

2016 Benzie County Natural Hazard Mitigation Plan

2015 Grand Traverse County Natural Hazard Mitigation Plan

GTB Natural Hazards Mitigation Plan Annex Elements to be addressed

Tornado Shelter Locations

Ready — Prepare. Plan. Stay Informed. | FEMA — Make a Plan

American Red Cross — Disaster Preparation

The Weather Channel — Family Preparedness

Appendices

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Appendix A - Asset Inventory (Capabilities Assessment)

Type of Asset	Name of Asset	Description of Asset Use	Owner/ Jurisdiction	Location of Asset	Backup Generator Onsite	Complete Based on Identified Hazards	#1 Vulnerability To This Facility	#2 Vulnerability To This Facility	#3 Vulnerability To This Facility
Office Buildings									
	Grand Traverse Band Main Administrative Office	Office	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	EDC Administrative-Business Building	Office	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	EDC Shipping & Receiving	Warehouse	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	EDC Vacation Rentals (The Chalet & Cedarview)	Rental	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Elders Complex	Elder Apartments	GTB	Leelanau County	YES		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Emergency Operations Center (Basement - Medicine Lodge)	Emergency Ops.	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Fire Station	Fire/Rescue Response	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	NRD Storage Building	Storage	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Hotel/Lodge - (Peshawbestown)	Lodging	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Industrial Facilities (Eagletown Market Gas Station)	Convenience Store	GTB	Leelanau County	Yes		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Police Station - (Basement of Medicine Lodge)	Police response	GTB	Leelanau County	Partial		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Resort Facilities - LSC	Casino	GTB	Leelanau County	Yes		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Strongheart Center - Recreational Facility	Gym-Kitchen-Showers	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Automotive Building	Garage-Mechanics	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire

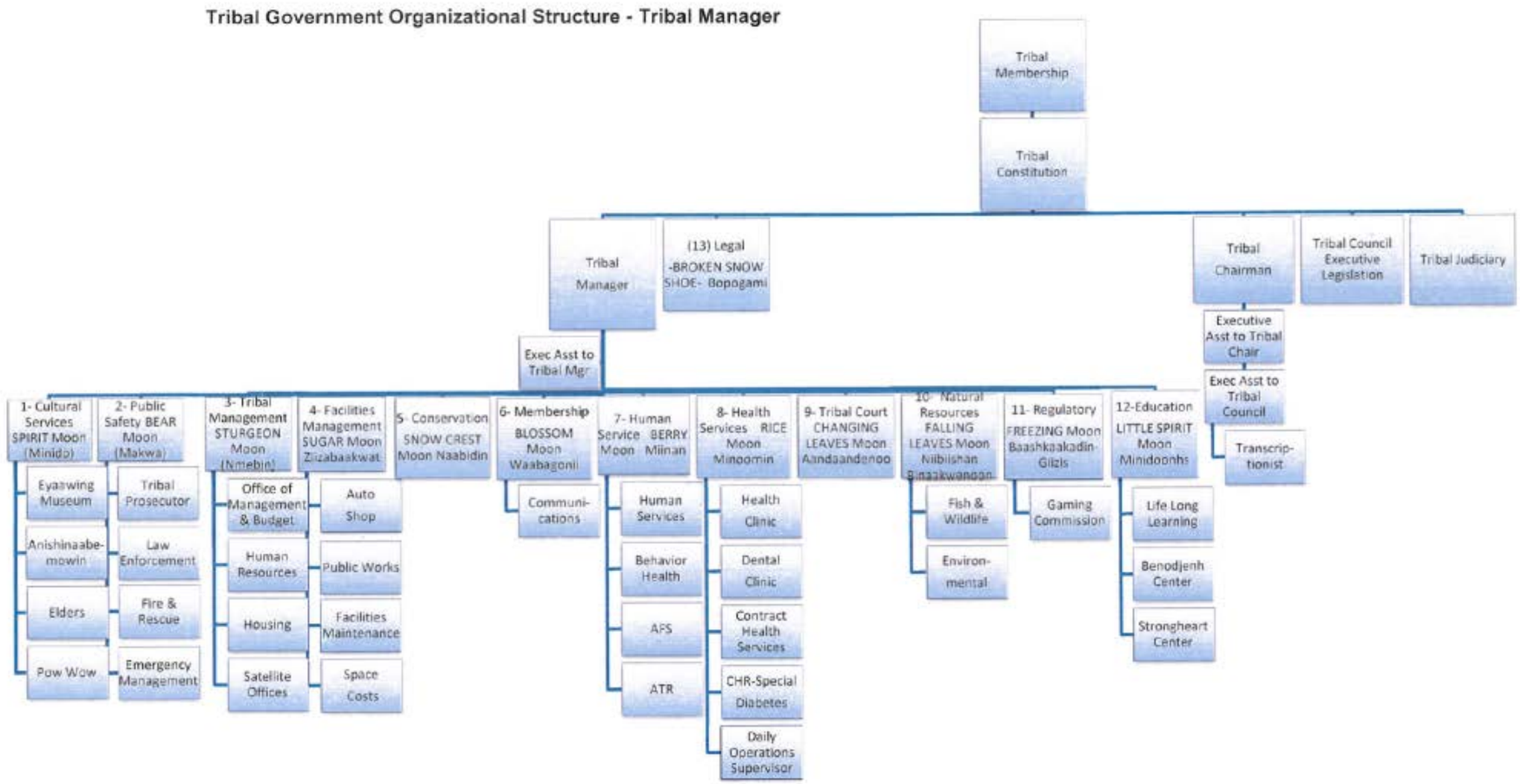
	OMB/Accounting Building	Offices	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	HR Dept/Membership Office	Offices	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Bingo Hall	Offices	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Natural Resource Building (Putnam Road)	Offices	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	M22 Library	Offices	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Housing Office	Offices	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Natural Resource Building on Bay	Offices	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Tribal Court	Offices	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Maintenance (Facility Management)	Offices	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	The Ridge Microbrewery & Restaurant	Retail	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	IT Department (Basement - Medicine Lodge)	Lodging	GTB	Leelanau County	Partial		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	EDC Vacation Rentals (Old M-72 Unit Williamsburg	Lodging	GTB	Grand Traverse County	No		Severe Thunderstorms - High Winds	Severe Winter Weather	Wildland Fire
	EDC Hammersmith Building (Williamsburg)	Offices	GTB	Grand Traverse County	No		Severe Thunderstorms - High Winds	Severe Winter Weather	Wildland Fire
	Turtle Creek Casino	Casino-Lodging	GTB	Grand Traverse County	Yes		Severe Thunderstorms - High Winds	Severe Winter Weather	Wildland Fire
	All Resort Properties (EDC -Acme) - Grand Traverse Resort	Lodging-Golf	GTB	Grand Traverse County	No		Severe Thunderstorms - High Winds	Severe Winter Weather	Wildland Fire
	EDC Vacation Rentals (Munson Beach House)- TC	Lodging	GTB	Grand Traverse County	No		Severe Thunderstorms - High Winds	Severe Winter Weather	Wildland Fire

Satellite Offices									
	Traverse City Satellite Office	Offices-Kitchen-Community Rm.	GTB	Grand Traverse County	No		Severe Thunderstorms - High Winds	Severe Winter Weather	Wildland Fire
	Benzie Satellite Office	Offices-Kitchen-Community Rm.	GTB	Benzie County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Boys Home (Benzie Satellite Office) separate wing	Residential Treatment	GTB	Benzie County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Charlevoix Satellite Office	Offices-Gym-Kitchen	GTB	Charlevoix County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
Alden Camp									
	Alden Camp	Kitchen-Showers-Camp Buildings	GTB	Antrim County	No		Severe Winter Weather	High Winds	Wildland Fire
Marina									
	Arthur Duhamel Marina (10 slips)	Tribal Fisherman Slips	GTB	Leelanau County	No		Severe Winter Weather	High Winds	Wildland Fire
	GTB Marina #2 (under construction - 150+ slips)	Commercial Boat Slips	GTB	Leelanau County	No		Severe Winter Weather	High Winds	Wildland Fire
Outbuildings and Sheds									
	#1 - Shed - Medicine Lodge	Storage	GTB	Leelanau County	No		Severe Winter Weather	High Winds	Wildland Fire
	#2 - Shed - (Putnam Rd.)	Storage	GTB	Leelanau County	No		Severe Winter Weather	High Winds	Wildland Fire
	#3 - NRD Storage Building	Storage	GTB	Leelanau County	No		Severe Winter Weather	High Winds	Wildland Fire
	#4 - NRD Fish Processing Facility at Art Duhamel Marina	Processing	GTB	Leelanau County	No		Severe Winter Weather	High Winds	Wildland Fire
	#5 - NRD 8' x 20' Shed with electricity at current NRD Bldg.	Storage	GTB	Leelanau County	No		Severe Winter Weather	High Winds	Wildland Fire
	#6 - Housing Warehouse - (Putnam)	Storage	GTB	Leelanau County	No		Severe Winter Weather	High Winds	Wildland Fire
	#7 - Pole Barn - Benzie	Storage	GTB	Benzie County	No		Severe Winter Weather	High Winds	Wildland Fire
	#8 - Shed - Benzie	Storage	GTB	Benzie County	No		Severe Winter Weather	High Winds	Wildland Fire
	#9 - Shed - (Charlevoix Office)	Storage	GTB	Charlevoix County	No		Severe Winter Weather	High Winds	Wildland Fire
	#10 - Fish Processing Building (Beaver Island)	Retail - Storage	GTB	Charlevoix County	No		Severe Winter Weather	High Winds	Wildland Fire
	#11 - Ice House - (Beaver Island)	Storage	GTB	Charlevoix County	No		Severe Winter Weather	High Winds	Wildland Fire
	#12 -								
Parks									
	Elders Park	Park	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire

Museum									
	Eyaawing Museum	Artifacts-Offices- kitchen	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
Historic, Cultural, Spiritual Sites									
	Historic Site - Pow Wow Grounds	Camp grounds	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Youth Building - (Pow-Wow Grounds)	Offices	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Kateri Tekakwitha Church	Community Church	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Ceremonial Dome (Sweat Lodge)	Traditional Ceremonies	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Burial Grounds	Sacred Lands	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Northport Indian Church	Community Church	GTB	Leelanau County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
	Kewadin Indian Mission Church	Community Church	GTB	Antrim County	No		Severe Winter Weather	Severe Thunderstorms - High Winds	Wildland Fire
Schools									
	Childcare Facility (Benodjenh Center)	Daycare-School	GTB	Leelanau County	No		Severe Winter Weather	High Winds	Wildland Fire
Medical Facilities									
	Medical Facility (GTB Family Health Clinic and Dental Clinic)	Clinic- Mental Health - Human Sv. Offices	GTB	Leelanau County	No		Severe Winter Weather	High Winds	Wildland Fire
Mechanical Facilities									
	Tower Site (Putnam Road GTB)	Communication Antennas	GTB	Leelanau County	No		Severe Winter Weather	Thunderstorms - High Winds	Wildland Fire
	Water and Sewage Treatment Facilities(Water-Sewer: 80% Residential)	Treatment Facility	GTB	Leelanau County	No		Severe Winter Weather	Thunderstorms - High Winds	Wildland Fire
	Water Tower #1	Residential - Business	GTB	Leelanau County	No		Severe Winter Weather	Thunderstorms - High Winds	Wildland Fire
	Water Tower #2	Residential - Business	GTB	Leelanau County	No		Severe Winter Weather	Thunderstorms - High Winds	Wildland Fire
	Water and Sewage Treatment Facilities *Water- Sewer: 100% public sewer	Treatment Facility	GTB	Grand Traverse County	No		Severe Winter Weather	Thunderstorms - High Winds	Wildland Fire
	Water Tower #3 TCC	Residential - Business	GTB	Grand Traverse County	No		Severe Winter Weather	Thunderstorms - High Winds	Wildland Fire

	Water Tower #4 GTR	Residential - Business	GTB	Grand Traverse County	No		Severe Winter Weather	Thunderstorms - High Winds	Wildland Fire
Emergency Facilities									
	Emergency Siren - Located near Pow-Wow Grounds	Warning Siren	GTB	Leelanau County	No		Severe Winter Weather	Thunderstorms - High Winds	Wildland Fire
	Tornado Shelter #1	20-25 person shelter	GTB	Leelanau County	No		Severe Winter Weather	Thunderstorms - High Winds	Wildland Fire
	Tornado Shelter #2	20-25 person shelter	GTB	Leelanau County	No		Severe Winter Weather	Thunderstorms - High Winds	Wildland Fire
	Tornado Shelter #3	20-25 person shelter	GTB	Leelanau County	No		Severe Winter Weather	Thunderstorms - High Winds	Wildland Fire
	Tornado Shelter #4	20-25 person shelter	GTB	Antrim County	No		Severe Thunderstorms - High Winds	Extreme Winter Weather	Wildland Fire
	Tornado Shelter #5	20-25 person shelter	GTB	Benzie County	No		Severe Winter Weather	Thunderstorms - High Winds	Wildland Fire
	Tornado Shelter #6	20-25 person shelter	GTB	Charlevoix County	No		Severe Winter Weather	Thunderstorms - High Winds	Wildland Fire

Appendix B – Organization Structure



***Note: The Tribal Chairman and Tribal Council are only shown on the same Organizational Chart line as the Tribal Manager, Tribal Judiciary, and Legal for the convenience of viewing the whole Organizational Structure**

Appendix C – Potential Funding Sources

ADDITIONAL FUNDING SOURCES

After reviewing the above-noted community mitigation projects GTB has identified additional sources/organizations, with the assistance of the state of Michigan All Hazard Mitigation Plan, which offers funding/training opportunities for mitigation projects.

GTB will look to these sources, using the internet and contacting state officers for contact information, for resources and/or additional funding for projects/guidance in addition to obtaining private funding made available through the Community Government.

1. HGMP – Hazard Mitigation Grant Program – see plan.

2. PMD – Pre-Disaster Mitigation Program – see plan.

3. US DOT – HMEP – Hazardous Materials Emergency Preparedness Grant Program.

4. Fire Suppression Assistance – grants to states for the suppression of any fire on public (non-federal) or privately owned forest or grasslands that threaten to become a major disaster.

5. Public Assistance Grants – removal of debris for public lands; emergency protective measures; restoration of eligible facilities.

6. CEPP – To provide for chemical accident prevention activities that relate to the Risk Management Program under the Clean Air Act.

7. Economic Injury Disaster Loans – To assist business concerns suffering economic injury as a result of Presidential, SBA, or Sec. of Ag. declared disasters.

8. Indian Community Fire Protection – To provide funds to perform fire protection services for Indian Tribal Governments that do not receive fire protection support from State and local government.

9. Safety of Dams on Indian Lands – To improve the structural integrity of dams on Indian Land.

10. Wildland Fire Management Supplement – To provide funds to 1) Maintain expertise through continuing education and training. Attend training sessions locally or elsewhere as they become available to maintain certified Dept volunteers; 2) Maintain fire apparatus in ready condition, including annual pump and ladder testing. This testing is mandatory, to keep fire appaaratus in service. This is also a life safety issue; 3) Maintain space cost for Fire Station, including two offices, two bathrooms, and truck bay area; 4) Respond to medical and fire emergencies as they arise in the Tribal emergency response area; 5) Research grants for additional equipment for fire dept. , medical equipent and homeland security; 6) Complete a fire prevention inspection to all tribal owned facilities. This inspection will be completed annually, with the most populated building being inspected more frequently; 7) Maintain AED's assigned to Tribal Govt Buildings; 8) Conduct annual drill in coordination with Emergency Management and LE Depts as scheduled ; 9) Contract with Training Officer to provide annual CPR, First Aid and AED training for Govt staff; 10) Maintain (6) Tornado Shelters: 3 in Peshawbestown, (1) Antrim, (1) Benzie and (1) Charlevoix for community access during open season annually; 11) Hire on FT staff: EMT-B & firefighter; and 12) Provide procedures for the new medical control policy to OMB. Funding Source: GTB sales tax and gaming revenues.

11. Climate Change – Development of solar grid for Medicine Lodge building and installation of solar panels for generation of electricity. Funding source: BIA Self-Governance.

12. BIA Self-Governance – To 1) Assist the BIA in the preparation of information for the fire planning

analysis system (FPA) (staff time & indirect); 2) Annually apply for non recurring funding needs under the BIA-NIFC; 2) Prepare the annual mobilization plan & submit to agency each spring; 3) Annually review & update cooperative wildfire agreements; 4) Annual review & maintenance of tools, vehicles & equipment; 5) Use of narrowband radio equipment; 6) Attend wild land fire training courses; 7) Issuance of wild land fire qualification cards to personnel & insuring each person meet the National Wildfire coordinating group intergagency standards & Bureau adoption standards; 8) GTB to respond to the initial attack wildland fires on the reservation, (preparation of fire reports DI-1202); 9) BIA approval of Wildland Fire Decision Support system identifying strategies for incidents that exceed the initial attacks.

13. BIA Self-Governance Fire Wise Programs – To 1) Monitor fuel conditions at start of wildfire season and notification of tribal members when danger is above normal; 2) Monitor fire danger indices & condition trends that may indicate extended periods of high fire dange; and 3) provide an updated copy of the Wildland fire & aviation program management & operations guide.

14. PHEP Public Health Emergency Preparedness Contract – Enhance coordination of services and planning in the area of public health/ bioterrorism preparedness, including coordination between Tribal Health, Local Health Departments, Regional Initiatives and State. Promote coordination and collaboration with Local Public Health, Regional Healthcare Coalitions and the Bureau of EMS, Trauma and Preparedness to protect the health and safety of all Michigan citizens. Coordination with LHD and Medical Countermeasure Dispensing activities in our jurisdiction. Develop and submit plan highlighting information sharing amongst tribal partners and administration as well as LHD and Healthcare coalitions for use during an emergency. Address coordination activities between tribal law enforcement and preparedness activities of the tribe and participate in monthly partnership calls. Funding source: DHHS Bureau of EMS, Trauma and Preparedness.

At the time of submission the estimated annual funding was unknown.