

CHARTER TOWNSHIP OF GARFIELD

RESOLUTION 2016-02-T

**GRAND TRAVERSE COUNTY NATURAL HAZARD
MITIGATION PLAN ADOPTION RESOLUTION**

Whereas; The Charter Township of Garfield, has experienced risks that may damage commercial, residential and public properties, displace citizens and businesses, close streets and impair infrastructure, and present general public health and safety concerns; and

Whereas; Grand Traverse County has developed the Grand Traverse County Natural Hazard Mitigation Plan that outlines the counties options to reduce damages and impacts from natural and technological hazards; and

Whereas; the Natural Hazard Mitigation Plan has been reviewed by residents, business owners, and federal, state and local agencies, and has been revised where appropriate to reflect their concerns;

Now, therefore, be it resolved that:

The Natural Hazard Mitigation Plan is hereby adopted as an official plan of the Charter Township of Garfield

Passed this ____ day of _____, 2016

Chuck Korn, Township Supervisor

Date

Lanie McManus, Township Clerk

Date

NOTE: AN OFFICIAL SIGNED COPY OF A RESOLUTION OF ADOPTION MUST BE SUBMITTED TO THE MICHIGAN STATE POLICE EMERGENCY MANAGEMENT AND HOMELAND SECURITY DIVISION (to comply with the requirements of the Disaster Mitigation Act of 2000).

Grand Traverse County Michigan

Natural Hazards Mitigation Plan



2015

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I. ACKNOWLEDGEMENTS

The Plan 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, this plan could not have been completed.

Each jurisdiction within Grand Traverse County is a continuing participant in the update of the Plan. The following is a list of key contributors who were instrumental in the update of the Grand Traverse County Natural Hazards Mitigation Plan:

Grand Traverse County Emergency Management

Gregg Bird

Grand Traverse County Planning Commission

Grand Traverse County Planning Department

John Sych

Grand Traverse County Board of Commissioners

Herb Lemcool

Grand Traverse County Health Department

Wendy Trute

Traverse City Police Department

Dee McCarthy

Traverse City Fire Department

Jim Tuller

Grand Traverse Band of Ottawa and Chippewa Indians

Joe Hahn

Others

Grand Traverse Central 911

Grand Traverse Metro Emergency Services

Grand Traverse Rural Fire

Peninsula Twp Fire & EMS

Blair Twp Fire & EMS

Grand Traverse Road Commission

Michigan State Police

Traverse City Public Services

Grand Traverse County Public Works

North Flight EMS

Munson Medical Center

FBI, Traverse City Office

Grand Traverse Pavilions

National Cherry Festival

WTCM radio (EAS broadcast station)

Grand Traverse Band of Ottawa & Chippewa Indians

Traverse City Light and Power

Consumers Energy

Tyson Foods

Cherry Capitol Airport

Transportation Safety Administration

Area Commission on Aging

USCG, Air Station Traverse City

American Red Cross

II. FEMA Letter of Approval

RECEIVED
Michigan State Police
JUL 20 2015
Emergency Management and
Homeland Security Division

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



FEMA

JUL 15 2015

Mr. Matt Schnepf
State Hazard Mitigation Officer
Michigan State Police
Emergency Management and Homeland Security Division
4000 Collins Rd
Lansing, MI 48910

Dear Mr. Schnepf:

Thank you for submitting the adoption documentation for the Grand Traverse County Hazard Mitigation Plan. The plan was reviewed based on the local plan criteria contained in 44 CFR Part 201, as authorized by the Disaster Mitigation Act of 2000. Grand Traverse County met the required criteria for a multi-jurisdiction hazard mitigation plan and the plan is now approved for the County. Please submit the adoption resolutions for any remaining jurisdictions who participated in the planning process.

The approval of this plan ensures continued availability of the full complement of Hazard Mitigation Assistance (HMA) Grants. 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 Grand Traverse County to follow the plan's schedule for monitoring and updating the plan, and continue their efforts to implement the mitigation measures. The expiration date of the Grand Traverse County Plan is five years from the date of this letter. In order to continue project grant eligibility, the plan must be reviewed, revised as appropriate, resubmitted, and approved no later than the plan expiration date.

Please pass on our congratulations to Grand Traverse County for this significant action. If you or the communities have any questions, please contact Kirstin Kuenzi at (312) 408-4460 or Kirstin.Kuenzi@fema.dhs.gov.

Sincerely,

Christine Stack, Director
Mitigation Division

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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 County 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 Grand Traverse County Natural Hazard Mitigation Plan is to permanently eliminate or reduce long-term risks to people and property from natural hazards so that county assets such as transportation, infrastructure, commerce, and tourism can be sustained and strengthened. This can be accomplished through collaborative efforts/activities amongst agencies within Grand Traverse County.

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, Grand Traverse County is actively addressing the issue through the development and implementation of this plan. The many benefits to be realized from this effort are:



This process will help ensure that Grand Traverse County remains a vibrant, safe, enjoyable place in which to live, raise a family, 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. NWMCOG worked with the Task Forces to update plans for these counties, which includes a general community profile, a comprehensive inventory of existing hazards, a hazard analysis, goals and objectives, and feasible mitigation strategies to address the prioritized hazards.

The Grand Traverse County Natural Hazards Mitigation Plan 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 this Plan, a broad perspective was taken in examining multiple natural hazards mitigation activities and opportunities in Grand Traverse County. Each natural hazard was analyzed from a historical perspective, evaluated for potential risk, and considered for possible mitigative action.

The Plan serves as the foundation for natural hazard mitigation activities and actions within Grand Traverse County, 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:

Table 1: Planning Goals

Natural Hazards Mitigation Planning Goals for Grand Traverse County
Goal 1: Increase local participation in natural hazards mitigation
Goal 2: Integrate natural hazards mitigation considerations into the County's comprehensive planning process
Goal 3: Utilize available resources and apply for others for natural hazards mitigation projects
Goal 4: Develop and complete natural hazards mitigation projects in a timely manner

Table 2: Priority Areas for Grand Traverse County

Natural Hazards Mitigation Priority Areas	
Priority Area 1: Public infrastructure (culverts, dams, bridges, etc.) located throughout Boardman River communities (Garfield, Blair, Paradise, East Bay, and Union Townships; City of Traverse City)	
Mitigation Strategies:	<i>Flooding</i>
Priority Area 2: Countywide historical record of severe thunderstorms and high wind events that may produce lightning strikes, flash flooding, hail, strong winds, and tornadoes.	
Mitigation Strategies:	<i>Severe Thunderstorms/High Winds</i>
Priority Area 3: Countywide historical record of heavy snow, extreme temperatures, ice damage occurrences	
Mitigation Strategies:	<i>Extreme Winter Weather</i>
Priority Area 4: Countywide potential wildfire/urban interface	
Mitigation Strategies:	<i>Wildfire</i>
Priority Area 5: Countywide potential of (shoreline) erosion and ice damage	
Mitigation Strategies:	<i>Erosion</i>

Table 3: Mitigation Strategies for Grand Traverse County

Frequent Natural Hazard	Mitigation Strategies
Flooding	
	<ul style="list-style-type: none"> • Drainage improvements in high flooding potential areas • Removal of unsafe dams on the Boardman River (2) • Continue enforcement of building codes and soil erosion regulations
Severe Thunderstorms/ High Winds	
	<ul style="list-style-type: none"> • Establish emergency shelters • Utilize a ham radio channel for local warnings if primary communications is interrupted • Promote the establishment of a robust, interoperable communication system • Enhance cooperation with utility companies (tree management, promotion of burying utility lines in new construction, and high outage areas) • Identify potential wind damage areas • Establish new generators where needed • Update the County's debris removal plan
Extreme Winter Weather	
	<ul style="list-style-type: none"> • Continue enforcement of building code regarding snow load limits through the permitting process • Utilize a ham radio channel for local warnings if primary communications is interrupted • Promote the establishment of a robust, interoperable communications system
Wildfire	
	<ul style="list-style-type: none"> • Public education and awareness activities such as programs and brochures regarding fuel management, proper vegetation, fire breaks • Continue enforcement of state fire codes regarding setback requirements • Public education utilizing the Michigan Department of Natural Resources flyers and the Federal Emergency Management Administration information at parks and campgrounds • Real estate and insurance agents to distribute information • Assess fire suppression access and make improvements • Research the Department of Natural Resources' State Forest wildfire/urban interface rules or plan
Erosion	
	<ul style="list-style-type: none"> • Drainage control projects • Enforcement of soil erosion statutes/permits • Enforcement of building and zoning codes for current and future development • Enforcement of the grading levels no more than 10% • Placement of vegetation and utilizing native vegetation

V. PURPOSE OF THE PLAN

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 Grand Traverse County Natural Hazards Mitigation Plan** 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 Plan is 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 Grand Traverse County in the northwest region of the lower peninsula of Michigan, the **planning process** utilized the following steps in the development of the Plan. 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?

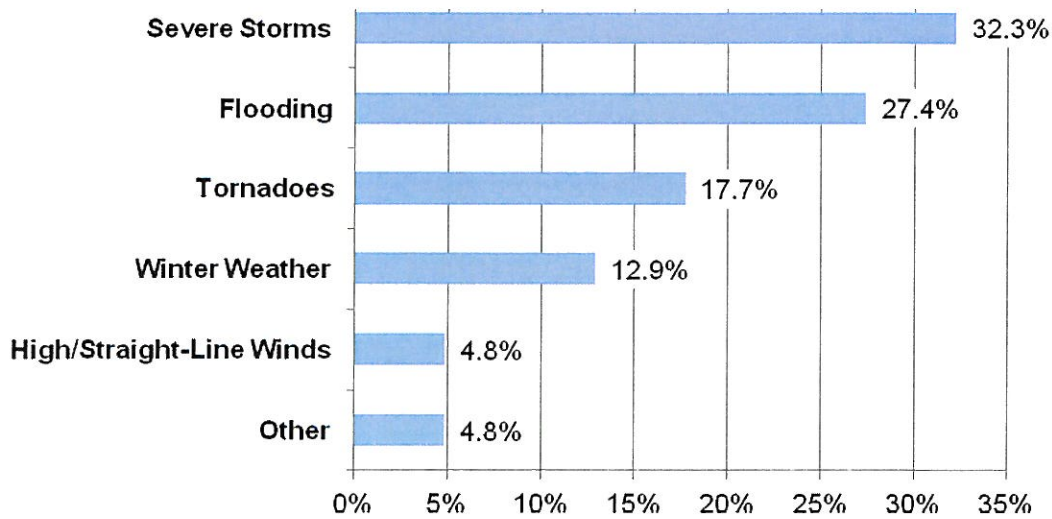
A **hazard** is an event or physical condition that has potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, damage to the environment, interruption of business, or other types of harm or loss. This plan focuses on principle natural hazards that occur in the northern lower region (see Page 12). This Plan 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

Percent of natural hazard events for all formal disaster declarations in the State of Michigan (1953 – 2014)

Figure 1: Disaster Declarations for the State of Michigan



Source: FEMA

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. This Plan can be used to assess 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

and Traverse county is approximately 314,700 acres or 492 square miles in area. The predominant land use/land cover is, by far, forest which covers almost 43% of the land area. This is followed by a substantial amount of agricultural land at 14.9%, then wetlands and open land.

Agricultural land is concentrated on Old Mission Peninsula, in the northern halves of Acme and Whitewater Townships, on the fringe of the urban area of Traverse City, and throughout the southern portion of the county.

More intense land uses such as commercial, industrial, institutional and transportation are primarily found in the Traverse City area and to a lesser extent in village areas and in small parcels on major corridors throughout the county.

Commercial land is the largest intensive use category in the county with 3,440 acres. Residential uses are found predominantly in and around Traverse City including Garfield Township and East Bay Township, village areas of Kingsley, Interlochen and Fife Lake, and around the Long Lake and Spider Lake areas.

There has not been any major infrastructure development, nor major hazard mitigation efforts, in the county since the last adoption of the Plan in 2007.

Community data is provided for planning and implementing natural hazard mitigation strategies.

Table 4: Geographic features

Feature	Measure
Land Area	136 sq. miles
Area in Water	492 sq. miles
Grand Traverse Bay shoreline	66.72 miles
Operating Farms	504

Source: U.S. Census Bureau; Grand Traverse County GIS Department; USDA, National Agricultural Statistics Service

Table 5: Land Use

Classification	Acres	Percent
Residential	33,265	10.6%
Institutional	1,589	0.5%
Recreation	3,025	1%
Commercial	3,440	1.1%
Industrial	901	0.3%
Transportation/Utilities	1,347	0.4%
Agricultural	46,805	14.9%
Open Land	32,421	10.3%
Forest	133,966	42.6%
Wetlands	39,037	12.4%
Barren	1,568	0.5%
Water	17,336	5.5%
TOTAL ACREAGE	314,700	

Source: Grand Traverse County Planning & Development Department

Grand Traverse County is comprised of thirteen (13) townships, two (2) villages and one (1) city

Table 6: Population by Municipality

Unit of Government	2010 Count	2013 Estimate	Percent Change 2010 to 2013
Grand Traverse County	86,986	89,987	3.4%
Fife Lake Village	443	451	1.8%
Kingsley Village	1,480	1,517	2.5%
Traverse City (Grand Traverse County only)	14,482	14,827	2.4%
Acme Township	4,375	4,581	4.7%
Blair Township	8,209	8,459	3.0%
East Bay Charter Township	10,663	11,139	4.5%
Fife Lake Township	2,348	2,373	1.2%
Garfield Charter Township	16,256	16,668	2.5%
Grant Township	1,066	1,117	4.8%
Green Lake Township	5,784	6,029	4.2%
Long Lake Township	8,662	9,054	4.5%
Mayfield Township	1,550	1,607	3.7%
Paradise Township	4,713	4,785	1.5%
Peninsula Township	5,433	5,680	4.5%
Traverse City (including Leelanau County)	14,674	15,018	2.3%
Union Township	405	420	3.7%
Whitewater Township	2,597	2,712	4.4%

Source: Grand Traverse County

Table 7: Forecasted Population

Year	Forecasted Population	Percent Increase from 2010
2015	94,044	8.1%
2020	101,164	16.3%
2025	107,105	23.1%
2030	111,925	28.7%
2035	116,081	33.4%
2040	120,127	38.1%

Source: MDOT-Statewide & Urban Model Travel Analysis Section & U-M Institute for Research on Labor, Employment, and the Economy

In 2010, Grand Traverse County had a total population of 86,986, an increase of 12% from the 2000 population of 77,655 – making it the third fastest growing county in Michigan during this period. Garfield Township’s population increased 17% from 2000 to 2010 making it the most populated community in the county.

As of 2013, the estimated total population for Grand Traverse County is 89,987. The projected growth for 2020 is 101,164 and for 2030 is 111,925.

As a tourist destination and an area of many vacation homes, Grand Traverse County experiences an increased population due to its transient population. The annual average transient population is 11% higher than the permanent population counted by the U.S. Census. This translates into an addition of nearly 10,000 to the resident population. The month of July has the highest at 22% higher or almost 20,000.

At 41.3 years, the median age of Grand Traverse County is higher than the state and national median ages. Locally, the lowest median age, 32.6, was in the Village of Kingsley where 31% of the population is under 18 years. The highest median age, 53.4, was in Peninsula Township where 26% of the population is over 65 years. In 2010, 22% of the population was under 18 years and 15% was 65 years or older. In 2040, 36% of the households are projected to be 65 years or older.

There are 41,598 housing units in Grand Traverse County, of which 34,362 are occupied. The average household size is 2.45 persons per household. 38.8% of the households have 2 persons.

Additional population profile information:

- The number of residents 19 years and under is 21,383, or 24.6% of the population.
- The number of residents over 65 years with a disability is 4,042, or 4.6% of the population.
- The total number of residents with a disability is 10,236, or 12.0% of the population.
- The number of residents that have a language barrier or are linguistically isolated is 1,484, or 1.71% of the population. There is an increase of migrant workers in the summer and fall season that do not speak English.
- The number of families in poverty with children is 1,520 or 6.7% of all families.
- The number of households with income less than \$15,000 is 9.9%.
- Individuals in poverty is 9,573

Table 8: Poverty Statistics

Poverty	Statistics
Families in poverty	6.7%
Income less than \$15,000	9.9%
Population in poverty	9,573

Source: U.S. Census Bureau, 2008-2012 American Community Survey

Table 9: Economic Census

Industry Description	Number of Establishments	Number of Employees
Manufacturing	178	4,522
Wholesale trade	156	1,347
Retail trade	565	7,035
Information	68	734
Real estate, rental, leasing	150	458
Professional, scientific, technical services	371	2,382
Administrative, support, waste management, remediation services	183	1,327
Educational Services	35	794
Health care, social assistance	396	8,802
Arts, entertainment, recreation	48	345
Accommodation and food services	250	5,501
Other services (except public administration)	274	1,723

Source: US Census Bureau: County Business Patterns 2008-2012

VII. THE DEVELOPMENT OF THE PLAN

Data Methodology and Map Development

Grand Traverse County staff identified the critical facilities and infrastructure on the base map and provided updated GIS shp files for mapping purposes.

Table 10: Critical Facilities and Infrastructure

2	Airports <ul style="list-style-type: none"> • Traverse City Cherry Capital Airport – 378,241 passengers (2013) • Green Lake Township Airport http://mdotcf.state.mi.us/public/airportstats/
1	Bus Terminal <ul style="list-style-type: none"> • Indian Trails in Traverse City
82	Places of Worship (2010) http://www.thearda.com/rcms2010/
1	Coast Guard Air Station
3	Dams – Union Street, Boardman, Sabin
1	Emergency Management Services Facility
14	Fire Stations
45	Government Buildings
1	Hospital – Munson Medical Center
4	Industrial Facilities
5	Law Enforcement
11	Medical Facilities <ul style="list-style-type: none"> • Primary physicians per 100,000 population is 124.2 (2010) http://www.healthindicators.gov/
9	Mobile Home Parks
10	Post Offices
200	Resort/Recreation
44	Schools/Library
1	Sewage Treatment Facilities <ul style="list-style-type: none"> • 40.1% public sewer • 58.9% individual septic/cesspool • 1.0% other
10	Utility
9	Water Tower <ul style="list-style-type: none"> • 39.8% of population on public system or private company (2005) • 60.9% of population on individual wells (2005) http://censtats.census.gov/usa/usa.shtml

Source: Grand Traverse County Data

Flood Data

Flood hazard information may be obtained from the Flood Rate Insurance Maps (FIRM) available for jurisdictions. In order to delineate potential flood plain areas (seasonal floodplains) for each county, NWMCOG overlaid wetland, soils, and elevation data to determine the most likely flood prone areas. Once overlaid; isolated polygons (areas) were deleted in order to show a more accurate representation of potential flood prone areas along lakes, rivers, and streams. Sources: Temporary/Seasonally Flooded Areas data are from the National Wetland Inventory of the US Fish and Wildlife Service; Hydric soils data are from the county digital soil surveys (were available); and Digital Elevation Model data are from the Center for Geographic Information, Michigan Department of Information Technology.

NFIP Participation Status:

Grand Traverse County is currently participating in the update of new digital flood maps, which will not be final for 1 to 2 years. The county has only one property that has been identified by the National Flood Insurance Program as having suffered repetitive flood losses. The property is a single-family home located in Blair Township. It had been damaged by floods in 2012 and 2014, with similar amounts of damage occurring during each event. This property should be prioritized for flood mitigation activities, in order to prevent or reduce such losses in the future.

Table 11: NFIP Participation

Municipality	NFIP status	Flood Maps	Year Joined
Acme Township	P	N	1986
Blair Township	P	N	1988
East Bay Township	P	N	1986
Fife Lake Township	NP		
Garfield Township	P	N	1986
Green Lake Township	NP		
Grant Township	NP		
Long Lake Township	P	Y	1988
Mayfield Township	NP		
Paradise Township	P	Y	1986
Peninsula Township	P	N	1986
Union Township	P	Y	1988
Whitewater Township	P	Y	1988
Village of Fife Lake	NP		
City of Traverse City	P	Y	1982

P = Participates
 NP = Non Participating
 Y = Yes
 N = No

Source: Department of Environmental Quality

Fire Data

Modern forest fire data were obtained from the USDA forest service and the Departments of Natural Resources in Minnesota, Wisconsin, and Michigan. Fire regimes data (fire prone areas) were provided by the USDA Forest Service, North Central Research Station located in Wisconsin. Land type associations, and historical and modern fire rotations were used to identify the fire prone areas.

Tornadoes - National Weather Service

Damaging Winds - National Weather Service

Large Hail - National Weather Service

Winter Weather - National Weather Service

Shoreline Erosion - Shoreline erosion incident zones delineated by the US Geological Service. Digital Elevation Model data was obtained from the Center for Geographic Information, Michigan Department of Information Technology.

Other hazards such as earthquakes and subsidence were considered but are not substantial risks in Grand Traverse County.

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 Grand Traverse County included: Drought (Drought), Flood (Flash Flood, Flood, Lakeshore Flood), Hail (Hail), Extreme Winter Weather (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 Grand Traverse 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.

Flood/Flash Flood: 7 events

Table 12: Flood Events

Month	Year	Location	Effect	Damage
February	1986*	County/Statewide	Great Lakes flooding, wave action	NA
January	1993	County/Region	Heavy rainfall and snowmelt	\$5,000
March	1993	County/Region	Flooding	NA
April	1993	County/Region	Flood	\$5,000,000
July	1999	Traverse City	Secondary street flooding/ basement flooding	NA
July	2000	Traverse City	Street flooding	NA
September	2000	Countywide	Street flooding, power outages, 1 fatality from lightning	NA
April	2001	County (north central)	Flooding along Boardman River	NA
April	2012	Grawn	Boardman River flooded homes	\$75,000
October	2012	Grawn	Failure of temporary dam on Boardman River/homes and other property damaged or destroyed	\$1,800,000
November	2013	Traverse City	2 in. rain in 1 hour/ roads flooded and impassable	\$14,000

Hail: 26 events

Table 13: Hail Events

Month	Year	Location	Effect	Damage
September	1958	Countywide	0.75 in.	NA
May	1970	Countywide	1.75 in.	NA
May	1971	Countywide	0.75 in.	NA
April	1975	Countywide	1.50 in.	NA
July	1980	Countywide	2.00 in.	NA
July	1982	Countywide	1.00 in.	NA
April	1993	Traverse City	1.00 in.	NA
April	1993	Bates	1.00 in.	NA
April	1999	Traverse City	0.75 in.	NA
June	2000	Traverse City	1.00 in./flooding/60 mph gusts	NA
September	2000	Traverse City	1.00 in./flooding/60 mph gusts	NA
June	2003	Fife Lake	0.75 in.	NA
August	2003	Traverse City	0.88 in.	NA
September	2005	Interlochen	0.88 in.	NA
June	2006	Traverse City	0.88 in.	NA
June	2006	Kingsley	0.75 in.	NA
July	2006	Old Mission	0.88 in.	NA
October	2006	Traverse City	1.25 in.	NA
June	2008	Traverse City	1.25 in.	NA
June	2008	Williamsburg	1.00 in.	NA
July	2010	Traverse City	0.88 in.	NA
April	2011	Hannah	0.88 in.	NA
June	2011	Old Mission	1.25 in.	NA
June	2011	Old Mission	1.00 in.	NA
May	2012	Acme	1.00 in.	NA
May	2012	Williamsburg	1.25 in.	NA
May	2012	Fife Lake	1.00 in.	NA
July	2014	Countywide	0.88 in.	NA
July	2014	Countywide	0.75 in.	NA
July	2014	Countywide	0.75 in.	NA
July	2014	Countywide	1.00 in.	NA

Extreme Winter Weather: 105 events

Table 14: Extreme Winter Weather Events

Month	Year	Location	Effect	Damage	Event
January	1993	County/Region	6 - 12 in. snow	\$50,000	
April	1993	County/Region	Heavy Snow	\$50,000	
December	1993	County/Region	10 - 15 in. snow/ 3 ft. drifts/accidents and injuries	NA	
January	1994	Statewide	.1 - .3 in. ice	\$5,000,000	Freezing Rain/ Heavy Snow
January	1997	Countywide	12 - 18 in. snow	NA	
March	1998	County/Region	8 - 12 in. snow/ 45 mph gusts	NA	Blizzard
December	1998	Countywide	6 - 12 in. snow	NA	
January	1999	Countywide	6 - 12 in. snow	NA	
December	2001	Traverse City	20.5 in. snow	NA	
December	2002	County/Region	1/4 in. ice	NA	Ice Storm
January	2003	County/Region	6 - 12 in. snow	NA	
January	2004	County/Region	20 in. snow	NA	
November	2005	County/Region	10 - 17 in. snow	NA	
January	2007	County/Region	11 -13 in. snow	NA	
February	2007	County/Region	-20 to -30 wind chills	NA	Extreme Temp
December	2009	County/Region	6 - 16 in. snow	NA	
December	2010	County/Region	6 -12 in. snow	NA	
March	2011	County/Region	6 - 15 in. snow	NA	
March	2012	County/Region	6 - 14 in. snow/widespread power outages	NA	
April	2012	Statewide	Killing freeze	\$15,000,000 (crop)	Extreme Temp
December	2012	County/Region	Trees and power lines down	\$12,000	
November	2013	County/Region	8 - 12 in. snow	NA	
January	2014	County/Region	12 - 16 in. snow	NA	
February	2014	County/Region	45 mph winds/ -15 to -25 wind chills	NA	

Severe Thunderstorm/High Wind: 54 events

Table 15: Severe Thunderstorm Events

Month	Year	Location	Effect	Damage	Event
August	1955	Countywide	61 knot winds	NA	
July	1956	Countywide	60 knot winds	NA	
July	1966	Countywide	50 knot winds	NA	
July	1969	Countywide	52 knot winds	NA	
July	1972	Countywide	55 knot winds	NA	

Severe Thunderstorm/High Wind (continued)

Month	Year	Location	Effect	Damage	Event
July	1974	Countywide	65 knot winds	NA	
July	1975	Countywide	50 knot winds	NA	
July	1982	Countywide	52 knot winds	NA	
July	1987	Countywide	70 knot winds	NA	
October	1989	Countywide	50 knot winds	NA	
July	1995	Acme	52 knot winds/ trees down	NA	
April	1997	Traverse City	52 knot winds	NA	
May	1998	Traverse City	50 knot winds/ trees and power lines down	NA	
September	1998	Countywide	52 knot winds/ trees down	NA	
November	1998	County/Region	50 knot winds	NA	
February	1999	Traverse City	50 knot winds/ tree down	NA	
June	1999	Traverse City	52 knot winds/ trees and power lines down	NA	
June	1999	Interlochen	50 knot winds/ trees down	NA	
July	1999	Traverse City	60 knot winds/ trees and power lines down/ straight line wind damage/ structure damages	NA	
August	2000	Countywide	Lightning sparked explosion at oil company in Blair Twp.	\$20,000	Lightning
September	2000	Traverse City	50 knot winds	NA	
September	2000	Traverse City	Lightning sparked garage fire/ 1 fatality	\$20,000	Lightning
August	2001	Traverse City/ Williamsburg	50 knot winds/ trees and power lines down	NA	
April	2002	Traverse City/ Kingsley	50 - 60 knot winds/ trees and power lines down/ roof damage	\$15,000	
April	2002	Old Mission	Fire sparked by lightning destroyed home	\$125,000	
July	2002	Traverse City/ Fife Lake	50 - 65 knot winds/ trees and power lines down	NA	
August	2003	Acme	5 knot winds/ tree down	NA	
November	2003	County/Region	68 knot winds/ trees and power lines down/ power outages	\$30,000	
August	2004	Traverse City	56 knot winds/ trees down/ crops damaged	\$1,000 (crop)	
September	2005	Traverse City	52 knot winds/ structure damage	\$45,000	
November	2005	County/Region	40 knots sustained winds/ trees down	\$3,000	
November	2005	County/Region	55 knot winds/ trees down/ structure damage	\$45,000	
July	2006	Traverse City	51 knot winds/ trees down/ property damage	\$3,000	
July	2006	Long Lake	65 knot winds/ over 200 trees down/ property damage	\$35,000	
July	2006	Interlochen	50 knot winds/ trees down/ property destroyed	\$8,000	

Severe Thunderstorm/High Wind (continued)

Month	Year	Location	Effect	Damage	Event
July	2006	Williamsburg	Structure damage/ crop damage	\$5,000	
June	2007	Kingsley	52 knot winds/ trees down	\$5,000	
October	2007	Traverse City	52 knot winds/ trees down	\$4,000	
June	2009	Interlochen	55 knot winds/ trees and power pole down/ property and structures damaged	\$30,000	
June	2009	Karlin	52 knot winds/ trees down	\$3,500	
April	2010	Hannah	52 knot winds/ trees down	\$4,000	
October	2010	County/Region	55 knot winds/ trees and power lines down/ power outages/ structure damage	\$24,000	
May	2011	Hannah	56 knot winds/ trees down	\$3,000	
June	2012	Mapleton	52 knot winds/ trees down	\$4,000	
June	2012	Monroe Center	64 knot winds/ trees down/ property and structures damaged	\$10,000	
July	2002	Traverse City	52 knot winds/ trees down	\$3,000	
July	2013	Fife Lake	55 knot winds/ trees down/ structure damage	\$15,000	
August	2013	Monroe Center	52 knot winds/ trees down/ structure damage	\$11,000	
August	2014	Traverse City	52 knot winds/ trees down	\$6,000	

Tornado: 4 events

Table 16: Tornado Events

Month	Year	Location	Effect	Damage
April	1956	Countywide	F4/ 15 miles long, 400 yards wide, 2 deaths and 24 injuries	\$250,000
September	1961	Countywide	F2/ 14.4 miles long, 33 yards wide	\$25,000
May	1964	Countywide	F2/ 16.6 miles long, 440 yards wide/ structure damage	\$250,000
June	1969	Countywide	F3/ 6.4 miles long, 600 yards wide/ trees and power lines down/ homes and property destroyed	\$250,000

* Governor and Presidential Hazard Declaration

Wildfires:

56 wildfires occurred in Grand Traverse County from 1981 to 2010, affecting nearly 212 acres countywide.

Other Potential Natural Hazards

Shoreline Erosion

The Great Lakes experienced record high lake levels in 1985-86, and again in 1997-98. Governor's Disaster Declarations for shoreline problems in the State was enacted in 1985-1986 and included Grand Traverse 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 (17 months), 1925-1926 (17 months), 1929-1931 (28 months), 1935-1936 (20 months), 1955-1956 (3 months), and 1976-1977 (13 months).

Pandemics or other Public Health Emergencies

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

Probability of Natural Hazards:

The probability that a natural hazard such as hail, thunderstorm and high wind, tornadoes, and snow and ice will affect this area of Michigan is an annual possibility. 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 an event is connected with tourist activity during the year, the pace of developing second homes, and an increasing base population in northwest, lower Michigan which in turn leads to more development. The events recorded by NOAA show that natural hazard events may be happening more frequently, but the geographic impact of the natural hazards' impact has remained the same in Grand Traverse County.

The areas where natural hazards overlap in Grand Traverse County can include heavy snow that causes trees and power lines down, and then melting, rain and flooding.

Grand Traverse 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:

Thunderstorms

- High winds
- Heavy rain and effect on agriculture
- Mobile home parks
- National Cherry Festival Emergency Plan
- More communication and notification
- Ingress and egress at campgrounds
- Construction area
- Interlochen Arts Academy area
- Extreme winter weather
- Hail and frost affecting agriculture
- Power outages
- Flooding in the Boardman River area, dams, bridges
- Wildfires – specifically in Cedar Run, Blair Township, Kingsley areas
- Erosion along Grand Traverse Bay and Peninsula Township
- Ice damage

The Natural Hazards Priority Areas have not changed since the original plan. However, the task force altered the chronological order of the priority list and placed “Public infrastructure” as the top priority, due to proposed programming and immediate implementation of pre-disaster mitigation projects that will address flooding hazard issues, should funding become available.

p Five Natural Hazards Priority Areas

1. **Public infrastructure (culverts, dams, bridges, etc.) located throughout Boardman River communities (Garfield, Blair, Paradise, East Bay, and Union Townships; City of Traverse City)**

Inadequate drainage infrastructure under South Airport road near the commercial/retail development *Logan’s Landing* are causing frequent flooding of the road and nearby property, especially during heavy rain events and the spring snow melt season.

The Michigan Hazard Analysis of 2012 identifies the Three (3) Dams in the County as a “high hazard”, meaning there is development downstream in the dam’s hydraulic shadow; and Four (4) Dams as a “significant hazard,” meaning structural failure may cause an uncontrollable high volume of water downstream, damaging bridges and other key infrastructure.

Other flooding may involve low-lying areas that collect runoff waters; flaws or shortcomings in existing sewer infrastructure; undersized or poorly designed stormwater control practices; collective effects of land use and development trends; illegal diversion of water, or actions that interfere with system function.

2. **Potential of Severe Thunderstorms and High Winds - Countywide**

There is a historical record of high wind events and tornadoes in Grand Traverse 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.

Mobile home parks, campgrounds, construction areas, institutions (schools, places of worship, etc.), and numerous festivals that draw a large number of tourists such as the National Cherry Festival were identified as specific areas of concern.

3. Potential of Extreme Winter Weather - Countywide

Grand Traverse 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.

4. Potential Wildfire/Urban interface - Countywide

Forest types (white/red pine, and white pine and hemlock) within Grand Traverse County are susceptible to wildfires. Additional factors that increase fire risk include dead or dying Ash trees as a result of disease/invasive species, lightning strikes, and human factors such as the number of persons residing, camping, or traveling through the County.

5. Potential of Erosion and Ice damage - 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. Shoreline banks that support roadways may erode and cause the road surface to crack, become unstable, or more prone to deposits of sand, snow, water, and ice.

This hazard is especially relevant to those municipalities that contain residential and commercial development along Grand Traverse Bay (Peninsula, East Bay and Acme Townships; Traverse City) that experience seasonal shifts in water levels and possible ice erosion hazards.

Emergency Warning System Coverage

Mobile warning system: Grand Traverse County uses the CodeRed Emergency Communications Network, which is an electronic high-speed outbound notification service available to the general public.

Tornado/Severe Weather Systems: Manual sirens are located at Metro Station #9 (East Bay Twp), Rural Station #6 (Fife Lake), and the Blair Twp. fire department. Weather alert radios were purchased and distributed to all the schools, nursery schools, and senior homes.

Flood warning system: For dam failures/flooding downstream an active warning system is located at Logan’s Landing on South Airport Rd. An inactive system is located on River Road.

Economic Impact Analysis

The total Damaging Events’ Costs recorded since 1950 with the National Oceanic and Atmospheric Administration for Grand Traverse County, the region, and the state are as follows:

Table 17: Damage Cost by Natural Hazard

Grand Traverse County	Property Damage Cost	Crop Damage Cost
Flood	\$6,894,000	NA
Hail or Wildfire	NA	NA
Extreme Winter Weather	\$5,112,000	\$15,000,000
Tornado	\$775,000	NA
Thunderstorm and High Wind	\$481,500	\$1,000

The Grand Traverse County Equalization Department calculated each Priority Area’s economic value through the State Equalized Values (SEV) for real and personal property (residential and commercial). The following includes 2010 Census data and 2014 SEV dollar amount times two (estimated fair market values) for each priority area. According to the 2014 Northwest Michigan Season Population Analysis, assume a 19% increase to account for the annual average seasonal population within the county.

Table 18: Geographic Economic Value

Priority Area	Geography	Population	State Equalized Value
	Grand Traverse County	86,986	\$10,648,994,584
3	Boardman river Area	46,306	\$5,289,726,800
5	Grand Traverse Bay communities	35,145	\$5,463,458,000

VIII. NATURAL HAZARDS MITIGATION GOALS AND OBJECTIVES

The mission of the Grand Traverse County 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 County Planning Commission.

Goal 1: Increase local awareness and participation in natural hazards mitigation Strategies

- Encourage cooperation and communication between planning and emergency management officials
- Encourage additional local governmental agencies to participate in the natural hazards mitigation process
- Encourage public and private organizations to participate, including organizations who advocate for individuals with functional or access needs

Goal 2: Integrate natural hazards mitigation considerations into the community’s comprehensive planning process

- Enforce and/or incorporate natural hazards mitigation provisions in building code standards, ordinances, and procedures
- Create or update ordinances to reflect building codes, shoreline protection rules, etc.
- Incorporate natural hazards mitigation into basic land use regulation mechanisms
- Develop community education programs and public warning systems
- Strengthen the role of the Local Emergency Planning Committee in the land development process
- Integrate natural hazards mitigation into the capital improvement planning process so that public infrastructure does not lead to development in natural hazards areas
- Encourage county agencies to assess local roads, bridges, dams, and related transportation infrastructure for natural hazards vulnerability

Goal 3: Utilize available resources and apply for additional funding for natural hazards mitigation

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

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

- Encourage public and business involvement in natural hazards mitigation projects

IX. 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 Grand Traverse 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. Potential of flooding along the Boardman River affecting public infrastructure (culverts, dams, bridges, etc.)

Flood Mitigation Strategies

- Drainage improvements in high flooding potential areas, specifically near *Logan's Landing*
- Removal of unsafe dams on the Boardman River
- Continue enforcement of building codes and soil erosion regulations

Priority Area 2. Potential of Severe Thunderstorms and High Winds throughout the County

Thunderstorm, High Winds, and Tornado Mitigation Strategies

- Establish emergency shelters
- Utilize a ham radio channel for local warnings if primary communications is interrupted
- Promote the establishment of a robust, interoperable communication system
- Enhance cooperation with Utility Companies (tree management, promotion of burying utility lines in new construction, and high outage areas)
- Identify potential wind damage areas
- Establish new generators where needed
- Update the County's debris removal plan

Priority Area 3. Potential of Extreme Winter Weather throughout the County

Snow Load Mitigation Strategies

- Continue enforcement of building code regarding snow load limits through the permitting process
- Utilize a ham radio channel for local warnings if primary communications is interrupted
- Promote the establishment of a robust, interoperable communications system

Selection of Feasible Mitigation Strategies (continued)

Priority Area 4. Potential Wildfire/Urban interface throughout the County

Wildfire Mitigation Strategies

- Public education and awareness activities such as programs and brochures regarding fuel management, proper vegetation, fire breaks
- Continue enforcement of state fire codes regarding setback requirements
- Public education utilizing the Michigan Department of Natural Resources flyers and the Federal Emergency Management Administration information at parks and campgrounds
- Real estate and insurance agents to distribute information
- Assess fire suppression access and make improvements
- Research the Department of Natural Resources' State Forest wildfire/urban interface rules or plan

Priority Area 5. Potential of Erosion and Ice damage throughout the County

Shoreline Erosion Mitigation Strategies

- Drainage control projects
- Enforcement of soil erosion statutes/permits
- Enforcement of building and zoning codes for current and future development
- Enforcement of the grading levels no more than 10%
- Placement of vegetation and utilizing native vegetation

Other mitigation strategies

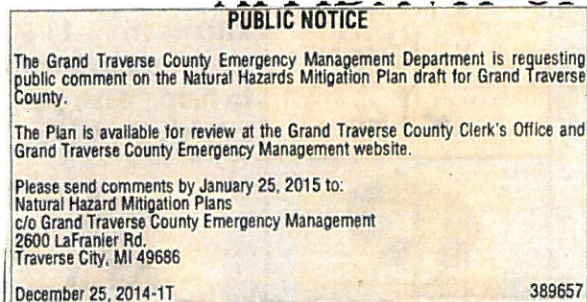
- Public education and awareness activities
- Work towards uniform mapping and zoning throughout the county for natural hazards mitigation
- Incorporate the Natural Hazards Mitigation Plan into the County's Master Plan and local zoning ordinances if in place.

X. Participation in the Development of the Grand Traverse County Natural Hazards Mitigation Plan

opportunities for review by other governmental entities and the public included the following:

- Public Notices were published in the Record Eagle

Public Notice



- The Natural Hazards Mitigation Plan was presented to the Grand Traverse County Planning Commission where the meetings are posted in the newspaper and are open to the public. Commission members gave their input and there were no comments from the public.
- The Natural Hazards Mitigation Plan was presented to the Grand Traverse County Board of Commissioners where the meetings are posted in the newspaper and are open to the public. Commissioners gave their input and there were no comments from the public.
- During development of the plan, all townships and villages were provided the opportunity to formally comment on plan drafts and other related materials. They were given the opportunity via mailings of both meeting notices and draft copies of the plan for comment. Notification was also provided to them that the plans were posted on the NWMCOG website and could be reviewed there. While no jurisdictions (other than the county) provided formal written comments, they did provide county staff (particularly the county emergency manager) with feedback via other informal means. This feedback took the form of phone calls, emails and conversations that occurred at various non-mitigation related meetings throughout the county. This information was provided back to NWMCOG staff by the county staff and used in development of the plan, including the risk assessment and community profile sections.

In addition, the townships and villages (whether or not they have their own zoning) have indicated to NWMCOG and the county emergency manager that they will follow the county's lead in identifying mitigation projects and developing grant applications to fund those projects. Land use issues associated with those projects (where applicable) will be handled by each jurisdiction that controls zoning in the project area.

Community planning services are provided by the professional staff of the Grand Traverse County Planning & Development Department. The Department assists communities in developing plans and zoning ordinances, provides resource information and technical assistance, and convenes communities to address land use issues of common interest. The Grand Traverse County Planning Commission coordinates and reviews local zoning and master plans to ensure consistency across jurisdictional boundaries.

Building permits are issued by the Grand Traverse County Construction Code Department, except in Garfield and Fife Lake townships where they are handled locally.

The Townships/Villages in the priority areas include:

Acme Township – Zoning
 Blair Township - Zoning
 East Bay Township – Zoning
 Fife Lake Township – Zoning
 Garfield Township – Zoning
 Grant Township – Zoning
 Green Lake Township – Zoning
 Long Lake Township – Zoning

Mayfield Township – Zoning
 Paradise Township – Zoning
 Peninsula Township – Zoning
 Union Township – Zoning
 Whitewater Township – Zoning
 Village of Fife Lake – Zoning
 Village of Kingsley – Zoning
 City of Traverse City - Zoning

Table 17: Plan Participation

County/Township/Others	Zoning	Participation
Grand Traverse County	No	Task Force meetings, review/development of updated elements: Board of Commissioners Conservation District Emergency Management Coordinator Equalization Department Health Department Planning Commissioners Planning Department Road Commission
Acme Township	Yes	See last bullet point paragraph, above
Blair Township	Yes	See last bullet point paragraph, above
East Bay Township	Yes	See last bullet point paragraph, above
Fife Lake Township	Yes	See last bullet point paragraph, above
Garfield Township	Yes	See last bullet point paragraph, above
Grant Township	Yes	See last bullet point paragraph, above
Green Lake Township	Yes	See last bullet point paragraph, above
Long Lake Township	Yes	See last bullet point paragraph, above
Mayfield Township	Yes	See last bullet point paragraph, above
Paradise Township	Yes	See last bullet point paragraph, above
Peninsula Township	Yes	See last bullet point paragraph, above
Union Township	Yes	See last bullet point paragraph, above
Whitewater Township	Yes	See last bullet point paragraph, above
Village of Fife Lake	Yes	See last bullet point paragraph, above
Village of Kingsley	Yes	See last bullet point paragraph, above
City of Traverse City	Yes	See last bullet point paragraph, above
Grand Traverse Band of Ottawa and Chippewa	Yes	See last bullet point paragraph, above

***The Grand Traverse Band has their own planning authority over lands they own that have been put in trust with the Federal Government. The County Natural Hazards Mitigation Plan would not cover the Tribe/lands, but the Tribes may adopt the approved County plan as their own.*

N/A = Not applicable; these are non-governmental authority entities

XI. IMPLEMENTATION OF THE GRAND TRAVERSE COUNTY NATURAL HAZARDS MITIGATION PLAN

Natural Hazards Mitigation Plan Managers and Technical Assistance

The County Board will lead the implementation of the Natural Hazards Mitigation Plan with assistance from the Emergency Management Coordinator and the Administration/Planning Department. Inter-agency partnerships and collaboration are encouraged to accomplish the goals and objectives of the Plan.

- Grand Traverse County Government Staff
- Townships, cities, and villages
- Grand Traverse County Conservation District
- Grand Traverse County Drain Commissioner
- Grand Traverse County Road Commission
- Grand Traverse Band of Ottawa and Chippewa Indians
- Grand Traverse Regional Land Conservancy
- The Watershed Center Grand Traverse Bay
- New Designs for Growth
- Michigan State University Extension
- Michigan Department of Environmental Quality
- Michigan Department of Natural Resources
- U.S. Environmental Protection Agency
- U.S. Army Corps of Engineers
- U.S. Department of Agriculture Natural Resources Conservation Service
- Insurance Companies
- Real Estate Companies

Natural hazards mitigation planning could be pursued using Michigan Public Act 226 of 2003, the Joint Municipal Planning Act. This Act provides for joint land use planning by cities, villages, and townships, and allows two or more municipalities' legislative bodies to create a single joint planning commission to address planning issues. This tool helps with planning for the "big picture" issues such as natural hazards that cross jurisdictional boundaries.

The intent of this legislation is for local governments to consider the following:

- Individual units of government modifying their ordinances simultaneously to include language that would incorporate aspects of protection
- Developing an overlay zoning district that would cross jurisdictional boundaries which would be incorporated into existing independent units of government's zoning ordinances
- Forming a new joint (multi-jurisdictional) planning commission or zoning board
- Sharing zoning administration and enforcement activities

Funding the Implementation of the Plan

To assist with the funding of the proposed natural hazards mitigation strategies, the following is a list of potential financial assistance entities to help fund the implementation projects of the Plan.

- Federal Emergency Management Administration – Hazard Mitigation Grant Program
- U.S. Environmental Protection Agency
- U.S. Department of Agriculture Natural Resources Conservation Service
- U.S. Department of Agriculture Rural Development: Rural broadband opportunity – high speed telecommunication funding from the Public Telecommunications Facilities Planning and Construction grants
- U.S. Department of Housing and Urban Development
- Michigan Department of Environmental Quality
- Michigan Department of Natural Resources

Funding the Implementation of the Plan (continued)

- National Oceanic and Atmospheric Administration
- Community, Regional Foundations
- Businesses

Action Agenda

The following is a summary for accomplishing the **recommended natural hazards mitigation actions** for Grand Traverse County.

Table 19: Action Strategies

Priority and Action Strategies	Responsible Parties	Timeframe
Priority Area 1: Flood Mitigation Strategies		
a. Drainage improvements in high flooding potential areas, including upgrading the twin culverts on S. Airport Rd at <i>Logan's Landing</i>	Drain Commissioner Road Commission County Conservation District Emergency Management Department Townships, Villages, City	2-4 years from adoption of the plan
b. Removal of unsafe dams on the Boardman River	County Conservation District County Planning Department Emergency Management Department MI Department of Natural Resources Townships of Garfield, Blair, Paradise, East Bay, City of Traverse City	4-8 years from adoption of the plan
c. Continue enforcement of building codes and soil erosion regulations	County Building Inspector Building Construction Code Dept. County Conservation District	Ongoing
Priority Area 2: Thunderstorms and High Winds Mitigation Strategies		
a. Promote the establishment of the State of Michigan's Primary Radio Communication system for throughout the County	Emergency Management Department County Planning Department Townships, Villages, City	1-2 years from adoption of the plan
b. Have a debris removal plan for safety	Emergency Management Department County Planning Department County Building Inspector Townships, Villages, City	2-4 years from adoption of the plan
c. Utilize ham radio channel for local warnings	Emergency Management Department	1-2 years from adoption of the plan
d. Work with utility companies	Emergency Management Department County Planning Department County Building Inspector Utility Companies	1-3 years from adoption of the plan
e. Tree management	Utility Companies Emergency Management Department Townships, Villages, Private Landowners	1-3 years from adoption of the plan
Promotion of burying utility lines in new construction	County Building Inspector Utility Companies Emergency Management Department County Planning Department Townships, Villages, City	1-3 years from adoption of the plan

Priority and Action Strategies	Responsible Parties	Timeframe
Priority Area 2: Thunderstorms and High Winds Mitigation Strategies (continued)		
Burying power lines in high outage areas	County Building Inspector Utility Companies Emergency Management Department County Planning Department Townships, Villages, City	1-3 years from adoption of the plan
h. Identify potential wind damage areas	Emergency Management Department County Planning Department Townships, Villages, City	1-2 years from adoption of the plan
i. Establish new generators where needed	Emergency Management Department County Planning Department Townships, Villages, City	2-3 years from adoption of the plan
Priority Area 3: Extreme Winter Weather (Snow Load and Ice Build Up) Mitigation Strategies		
a. Continue enforcement of building code regarding snow load limits through the permitting process	County Building Inspector Townships, Villages, City County Planning Emergency Management Coordinator	Ongoing
b. Promote the establishment of the State of Michigan's Primary Radio Communication system for throughout the County	Emergency Management Department County Planning Department Townships, Villages, City	1-2 years from adoption of the plan
c. Utilize a ham radio channel for local warnings	Emergency Management Department	1-2 years from adoption of the plan
Priority Area 4: Wildfire/Urban Interface Mitigation Strategies		
Public education and awareness activities such as programs and brochures regarding fuel management, proper vegetation, fire breaks	County Planning Department Emergency Management Department Building Inspector County Soil Conservation District MI Department of Natural Resources Townships, Villages, City	1-3 years from adoption of the plan
b. Continue enforcement of state fire codes regarding setback requirements	Building Inspector Townships, Villages, City	Ongoing
c. Public education utilizing the MI Department of Natural Resources flyers and the FEMA information at parks and campgrounds	Emergency Management Department County Conservation District MI Department of Natural Resources Townships, Villages Parks and Campgrounds, public and private	1-3 years from adoption of the plan
d. Real estate and insurance agents to distribute information	Emergency Management Department County Planning Department Townships, Villages	1-3 years from adoption of the plan
e. Assess fire suppression access and make improvements	Emergency Management Department County and local fire departments	1-3 years from adoption of the plan
f. Research the MI Department of Natural Resources' State Forest wildfire/urban interface rules or plan	Emergency Management Department County and local fire departments County Planning Department	1-3 years from adoption of the plan

Priority and Action Strategies	Responsible Parties	Timeframe
Priority Area 5: Shoreline Erosion Mitigation Strategies		
Drainage control projects	Building Construction Code Dept. Drain Commissioner County Conservation District Emergency Management Department Townships, Villages, City	2-4 years from adoption of the plan
b. Enforcement of soil erosion statutes/permits	Building Construction Code Dept. Drain Commissioner County Conservation District County Planning Department Emergency Management Coordinator MI Department of Environmental Quality U.S. Army Corps of Engineers	Ongoing
c. Enforcement of the building codes	County Building Inspector	Ongoing
d. Enforcement of the grading levels no more than 10%	Building Construction Code Dept. Drain Commissioner County Conservation District County Planning Department	Ongoing
e. Placement of vegetation and utilizing native vegetation	County Building Inspector Building Construction Code Dept. Drain Commissioner County Conservation District County Planning Department Townships of Peninsula, East Bay, Acme, City of Traverse City	Ongoing

Additional Mitigation Strategies

- General Public education and awareness activities
- Work towards uniform mapping and zoning throughout the county for natural hazards mitigation
- Incorporate the Natural Hazards Mitigation Plan into the County's Master Plan and local zoning ordinances if in place.

Monitoring and Evaluation

The Grand Traverse County Natural Hazards Mitigation Plan will be monitored on a regular basis by the Emergency Management Staff and Planning Staff. Because Grand Traverse County is a dynamic, changing county with population growth, it is expected that the plan should be reviewed on an annual basis.

To assess the effectiveness of the Plan, some questions to ask in the review include: 1) How many and which mitigation strategies were developed? Implemented? 2) Did any new natural hazards events take place the past year to report? This review will be administered by the Emergency Management Coordinator with the Local Emergency Planning Committee, the County Planning Commission, and the public. If changes are needed, the plan will be presented to the Task Force participants for revisions.

Although review of the plan will occur annually, and a formal revision may not be needed each year, a new edition of the plan will be expected within every five year period. A continual process for updates will take place with annual reviews, monitoring, evaluation, and an accumulation of official feedback and public input through public notices. When it is appropriate to publish a revised version of the plan, the Task Force participants shall again be involved in the revision process. Each new edition of the plan will again be officially adopted by the Grand Traverse County Board of Commissioners.

XII. NATURAL HAZARDS MITIGATION PLAN ADOPTION RESOLUTION

**Grand Traverse County
Natural Hazard Mitigation Plan Adoption Resolution**

RESOLUTION 92-2015

Whereas; Grand Traverse County, Michigan has experienced risks that may damage commercial, residential and public properties, displace citizens and businesses, close streets and impair infrastructure, and present general public health and safety concerns; and

Whereas; Grand Traverse County has developed the Grand Traverse County Natural Hazard Mitigation Plan that outlines the counties options to reduce damages and impacts from natural and technological hazards; and

Whereas; the Natural Hazard Mitigation Plan has been reviewed by residents, business owners, and federal, state and local agencies, and has been revised where appropriate to reflect their concerns;

Now, therefore, be it resolved that:

The Natural Hazard Mitigation Plan is hereby adopted as an official plan of Grand Traverse County, Michigan.

Passed this 1st day of July, 2015

**Chair, Grand Traverse County Board of
Commissioners**

Date



7-2-15

Grand Traverse County Clerk

Date



7-2-15

HEREBY CERTIFY THIS COPY TO BE A TRUE AND CORRECT COPY OF THE RECORD ON FILE WITH THE OFFICE OF COUNTY CLERK

BONNIE SCHEELLE

GRAND TRAVERSE COUNTY CLERK

BY: 

CLERK/DEPUTY COUNTY CLERK

DATE: July 2, 2015

NOTE: AN OFFICIAL SIGNED COPY OF A RESOLUTION OF ADOPTION MUST BE SUBMITTED TO THE MICHIGAN STATE POLICE EMERGENCY MANAGEMENT AND HOMELAND SECURITY DIVISION (to comply with the requirements of the Disaster Mitigation Act of 2000).

XIII. APPENDICES

Appendix A

Glossary of Mitigation Planning Terms

Alluvial fan: A gently sloping fan-shaped landform created over time by the deposition of eroded sediment and debris.

Base Flood: A flood having a one percent chance of being equaled or exceeded in any given year.

Coastal high hazard area: An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms.

Community: Any state, area, or political jurisdiction or any Native American Tribe, authorized tribal organization, Alaska native village, or authorized native organization that has the authority to adopt and enforce floodplain management ordinances for the area under its jurisdiction. In most cases, a community is an incorporated city, town, village, township, or an unincorporated area of a county.

Disaster: A major detrimental impact of a hazard upon the population and economic, social, and built environment of an affected area.

Exposure: The number, types, qualities, and monetary values of various types of property or infrastructure and life that may be subject to an undesirable or injurious hazard event.

Flood Insurance Rate Map: As defined under the National Flood Insurance Program, an official map of the community on which the administrator of the Flood Insurance Administration has delineated both the special flood hazard areas and the risk premium zones applicable to the community.

Floodplain or flood prone area: Any land area susceptible to being inundated by water from any source.

Floodplain management: The operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works, and floodplain management regulations.

Fuel: Combustible plant material, both living and dead, that is capable of burning in a wildland situation; any other flammable material in the built environment that feeds a wildfire.

Hazard: An event or physical condition that has the potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, damage to the environment, interruption of business, or other types of harm or loss.

Hazard identification: The process of defining and describing a hazard, including its physical characteristics, magnitude and severity, probability and frequency, causative factors, and locations or areas affected.

Lifeline systems: Public works and utilities such as electrical power, gas and liquid fuels, telecommunications, transportation, and water and sewer systems.

Major disaster: As defined in the Stafford Act, "any natural catastrophe or, regardless of cause, any fire, flood, or explosion in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of states, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby."

Mitigation: Sustained action taken to reduce or eliminate the long-term risk to human life and property from natural hazards and their effects. Note that this emphasis on long-term risk distinguishes mitigation from actions geared primarily to emergency preparedness and short-term recovery.

Multiple-objective management: A holistic approach to floodplain management (or the management of other hazards) that emphasizes the involvement of multiple distinct interest in solving land use problems related to the hazardous area.

Natural hazard: Hurricanes, tornadoes, storms, floods, tidal wave, tsunamis, high or wind-driven waters, volcanic eruptions, earthquakes, snowstorms, wildfires, droughts, landslides, and mudslides.

One hundred year flood: The flooding event that has a one percent chance of occurring in a particular location in any given year. While this is the most common reference point statistically because it is used for regulatory purposes in the National Flood Insurance Program, the same language applies in referring to other actual or hypothetical events in terms of their statistical probabilities.

Risk: The potential losses associated with a hazard, defined in terms of expected probability and frequency, exposure, and consequences.

Risk assessment: A process or method for evaluating risk associated with a specific hazard and defined in terms of probability and frequency of occurrence, magnitude and severity, exposure, and consequences.

Special flood hazard area: Land in the floodplain within a community subject to one percent or greater chance of flooding in any given year.

Stafford Act: The Robert T. Stafford Disaster Relief and Emergency Assistance Act (P.L. 93-288, as amended by P.L. 100-707), which provides the greatest single source of federal disaster assistance.

Structure: A walled and roofed building, including a storage tank for gas or liquid that is principally above ground, as well as a manufactured home.

Tornado Classifications:

F-Scale Number	Intensity Phrase	Wind Speed	Type of Damage Done
F0	Gale tornado	40-72 mph	Some damage to chimneys, breaks branches off trees, pushes over shallow-rooted trees, damages sign boards.
F1	Moderate tornado	73-112 mph	The lower limit is the beginning of hurricane wind speed, peels surface off roofs; mobile homes pushed off foundations or overturned, moving autos pushed off the roads, attached garages may be destroyed.
F2	Significant tornado	113-157 mph	Considerable damage. Roofs torn off frame houses, mobile homes demolished, boxcars pushed over, large trees snapped or uprooted, light object missiles generated.
F3	Severe tornado	158-206 mph	Roof and some walls torn off well constructed houses, trains overturned, most trees in forest uprooted

F4	Devastating tornado	207-260 mph	Well-constructed houses leveled, structures with weak foundations blown off some distance, cars thrown and large missiles generated.
F5	Incredible tornado	261-318 mph	Strong frame houses lifted off foundations and carried considerable distances to disintegrate, automobile sized missiles fly through the air in excess of 100 meters, trees debarked, steel reinforced concrete structures badly damaged.
F6	Inconceivable tornado	319-379 mph	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable along with the mess produced by F4 and F5 wind that would surround the F6 winds. Missiles, such as cars and refrigerators would do serious secondary damage that could not be directly identified as F6 damage. If this level is ever achieved, evidence for it might only be found in some manner of ground swirl pattern, for it may never be identifiable through engineering studies

Urban Wildfire: A fire moving from a wildland environment, consuming vegetation as fuel, to an environment where the fuel consists primarily of buildings and other structures.

Urban/wildland interface: A developed area, also known as the "I-zone," occupying the boundary between an urban or settled area and a wildland characterized by vegetation that can serve as fuel for a forest fire.

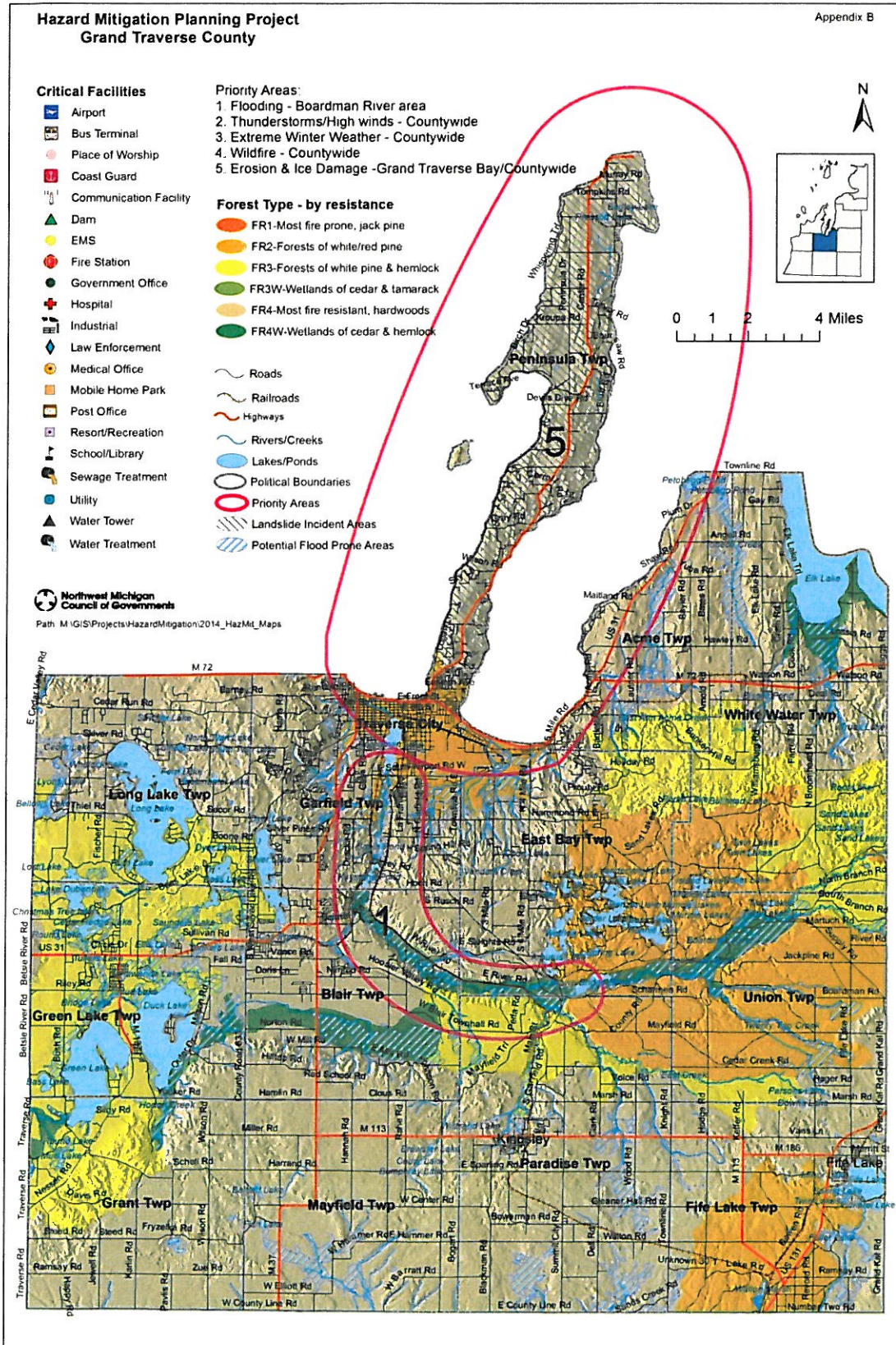
Vulnerability: The level of exposure of human life and property to damage from natural hazards.

Watershed management: The implementation of a plan or plans for managing the quality of flow of water within a watershed, the naturally defined area within which water flows into a particular lake or river or its tributary. The aims of watershed management are holistic and concern the maintenance of water quality, the minimization of stormwater runoff, the preservation of natural flood controls such as wetlands and pervious surface, and the preservation of natural drainage patterns. Watershed management is, in many ways, an enlargement of most of the concerns that underlie floodplain management.

Wildland: An area in which development has not occurred with the exception of some minimal transportation infrastructure such as highways and railroads, and any structures that are widely spaced and serve largely recreational purposes.

Appendix B

Detailed Maps



**Hazard Mitigation Planning Project
Grand Traverse County - Northeast**

Appendix B

Critical Facilities

- Airport
- Bus Terminal
- Place of Worship
- Coast Guard
- Communication Facility
- Dam
- EMS
- Fire Station
- Government Office
- Hospital
- Industrial
- Law Enforcement
- Medical Office
- Mobile Home Park
- Post Office
- Resort/Recreation
- School/Library
- Sewage Treatment
- Utility
- Water Tower
- Water Treatment

- Roads
- Railroads
- Highways
- Rivers/Creeks
- Lakes/Ponds
- Political Boundaries
- Priority Areas
- Landslide Incident Areas
- Potential Flood Prone Areas

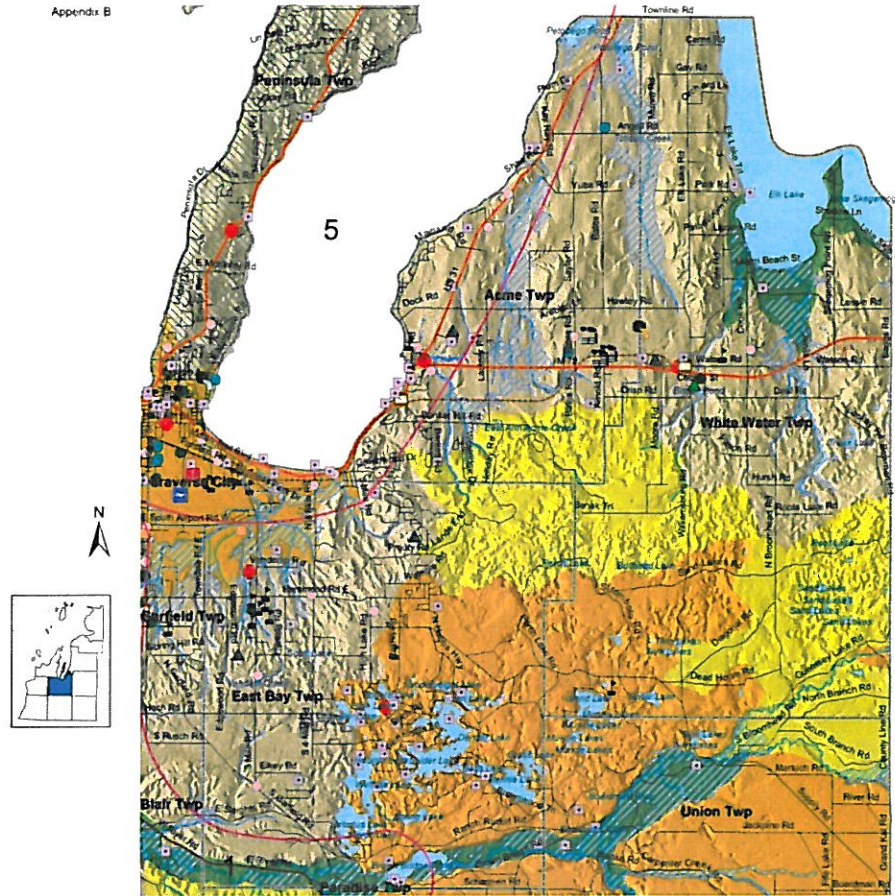
Forest Type - by resistance

- FR1-Most fire prone: jack pine
- FR2-Forests of white/red pine
- FR3-Forests of white pine & hemlock
- FR3W-Wetlands of cedar & tamarack
- FR4-Most fire resistant: hardwoods
- FR4W-Wetlands of cedar & hemlock

0 0.5 1 2 Miles

Priority Areas

- 1 Flooding - Boardman River area
- 2 Thunderstorms/High winds - Countywide
- 3 Extreme Winter Weather - Countywide
- 4 Wildfire - Countywide
- 5 Erosion & Ice Damage -Grand Traverse Bay/Countywide



Northwest Michigan Council of Governments

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**Hazard Mitigation Planning Project
Grand Traverse County - Northwest**

Appendix B

Critical Facilities

- Airport
- Bus Terminal
- Place of Worship
- Coast Guard
- Communication Facility
- Dam
- EMS
- Fire Station
- Government Office
- Hospital
- Industrial
- Law Enforcement
- Medical Office
- Mobile Home Park
- Post Office
- Resort/Recreation
- School/Library
- Sewage Treatment
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- Roads
- Railroads
- Highways
- Rivers/Creeks
- Lakes/Ponds
- Political Boundaries
- Priority Areas
- Landslide Incident Areas
- Potential Flood Prone Areas

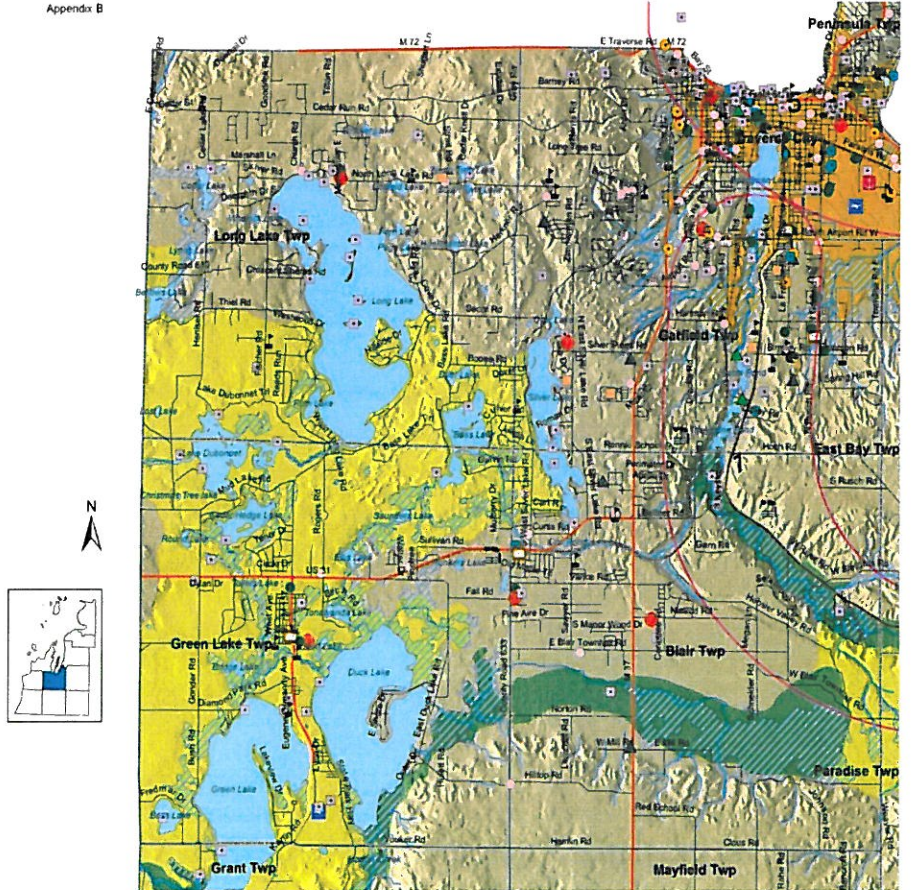
Forest Type - by resistance

- FR1-Most fire prone: jack pine
- FR2-Forests of white/red pine
- FR3-Forests of white pine & hemlock
- FR3W-Wetlands of cedar & tamarack
- FR4-Most fire resistant: hardwoods
- FR4W-Wetlands of cedar & hemlock

0 0.5 1 2 Miles

Priority Areas

- 1 Flooding - Boardman River area
- 2 Thunderstorms/High winds - Countywide
- 3 Extreme Winter Weather - Countywide
- 4 Wildfire - Countywide
- 5 Erosion & Ice Damage -Grand Traverse Bay/Countywide



Northwest Michigan Council of Governments

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**Hazard Mitigation Planning Project
Grand Traverse County - Old Mission Peninsula**

Appendix B

Critical Facilities

- Airport
- Bus Terminal
- Place of Worship
- Coast Guard
- Communication Facility
- Dam
- EMS
- Fire Station
- Government Office
- Hospital
- Industrial
- Law Enforcement
- Medical Office
- Mobile Home Park
- Post Office
- Resort/Recreation
- School/Library
- Sewage Treatment
- Utility
- Water Tower
- Water Treatment

Priority Areas:

1. Flooding - Boardman River area
2. Thunderstorms/High winds - Countywide
3. Extreme Winter Weather - Countywide
4. Wildfire - Countywide
5. Erosion & Ice Damage - Grand Traverse Bay/Countywide

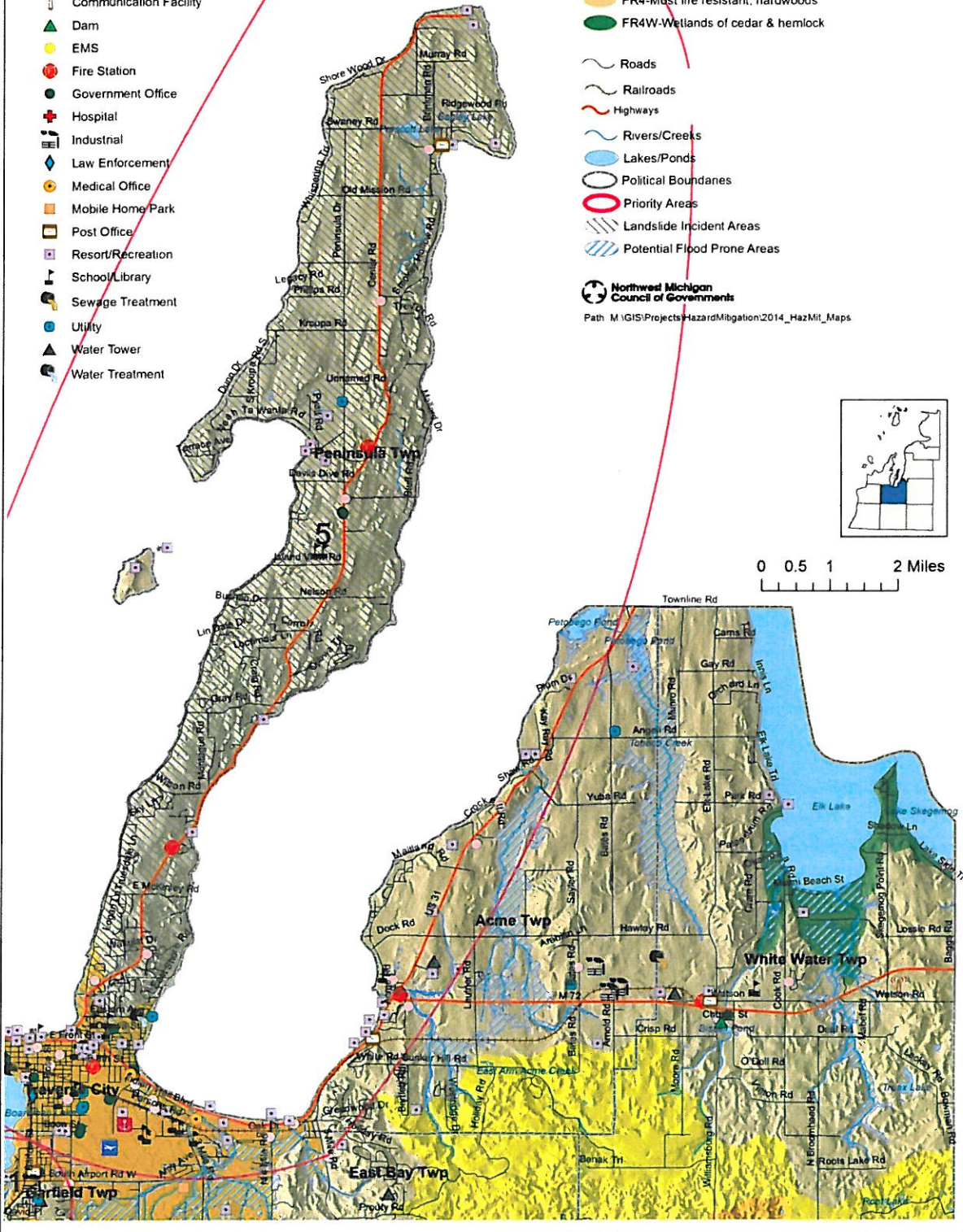
Forest Type - by resistance

- FR1-Most fire prone, jack pine
- FR2-Forests of white/red pine
- FR3-Forests of white pine & hemlock
- FR3W-Wetlands of cedar & tamarack
- FR4-Most fire resistant, hardwoods
- FR4W-Wetlands of cedar & hemlock

- Roads
- Railroads
- Highways
- Rivers/Creeks
- Lakes/Ponds
- Political Boundaries
- Priority Areas
- Landslide Incident Areas
- Potential Flood Prone Areas

Northwest Michigan Council of Governments

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Hazard Mitigation Planning Project Grand Traverse County - South



- Critical Facilities**
- Airport
 - Bus Terminal
 - Place of Worship
 - Coast Guard
 - Communication Facility
 - Dam
 - EMS
 - Fire Station
 - Government Office
 - Hospital

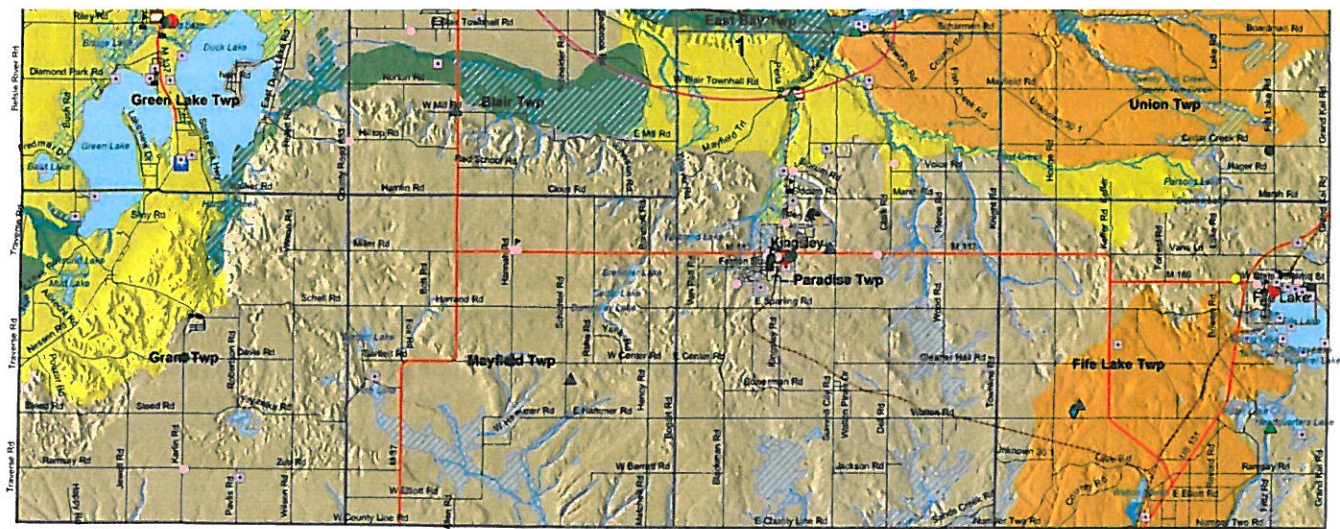
- Industrial
- Law Enforcement
- Medical Office
- Mobile Home Park
- Post Office
- Resort/Recreation
- School/Library
- Sewage Treatment
- Utility
- Water Tower
- Water Treatment

- Roads
- Railroads
- Highways
- Rivers/Creeks
- Lakes/Ponds
- Political Boundaries
- Priority Areas
- Landslide Incident Areas
- Potential Flood Prone Areas

- Forest Type - by resistance**
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 - FR3W-Wetlands of cedar & tamarack
 - FR4-Most fire resistant, hardwoods
 - FR4W-Wetlands of cedar & hemlock

- Priority Areas**
- 1 Flooding - Boardman River area
 - 2 Thunderstorms/High winds - Countywide
 - 3 Extreme Winter Weather - Countywide
 - 4 Wildfire - Countywide
 - 5 Erosion & Ice Damage -Grand Traverse Bay/Countywide

Northwest Michigan Council of Governments
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Appendix B

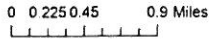
Hazard Mitigation Planning Project Grand Traverse County - Traverse City

Appendix B

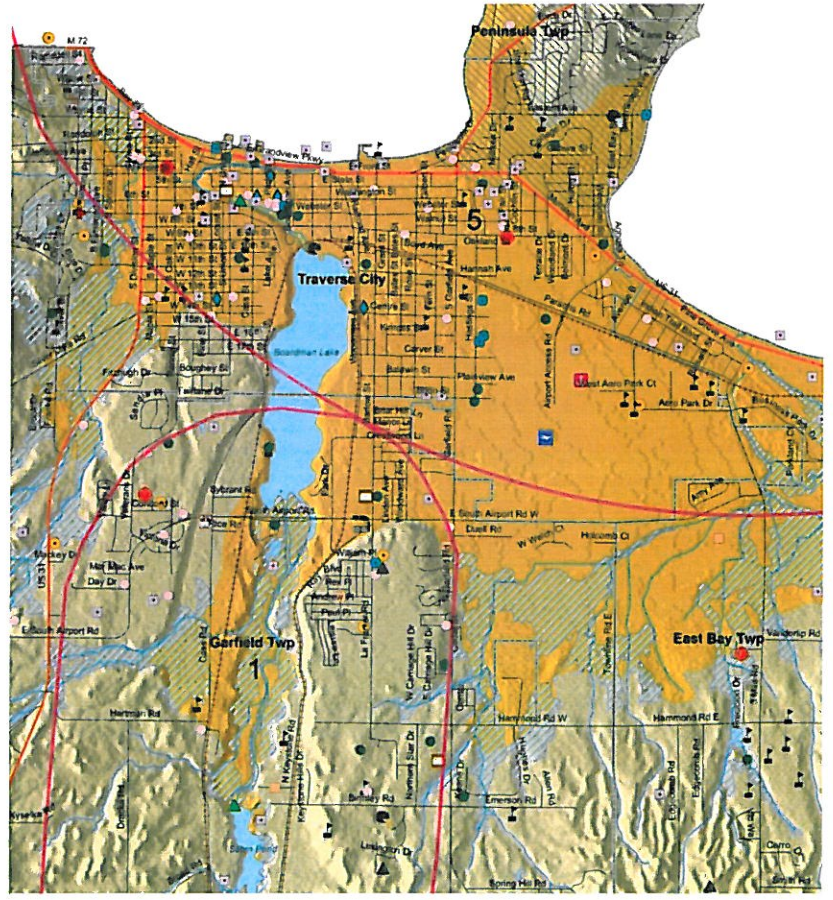
- Critical Facilities**
- Airport
 - Bus Terminal
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 - Coast Guard
 - Communication Facility
 - Dam
 - EMS
 - Fire Station
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 - Industrial
 - Law Enforcement
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- Priority Areas**
- 1 Flooding - Boardman River area
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 - 3 Extreme Winter Weather - Countywide
 - 4 Wildfire - Countywide
 - 5 Erosion & Ice Damage -Grand Traverse Bay/Countywide




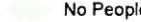

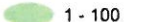

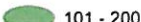

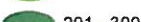



Northwest Michigan Council of Governments
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Appendix C

Population Density Map

Hazard Mitigation Planning Project
Grand Traverse County

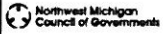
Legend

- | | | | |
|---|----------------------|---|-----------|
|  | Roads |  | No People |
|  | Highways |  | 1 - 100 |
|  | Railroads |  | 101 - 200 |
|  | Rivers/Creeks |  | 201 - 300 |
|  | Political Boundaries |  | 301 - 400 |
|  | Lakes/Ponds | >400 color swatch" data-bbox="212 292 298 302"/> | >400 |

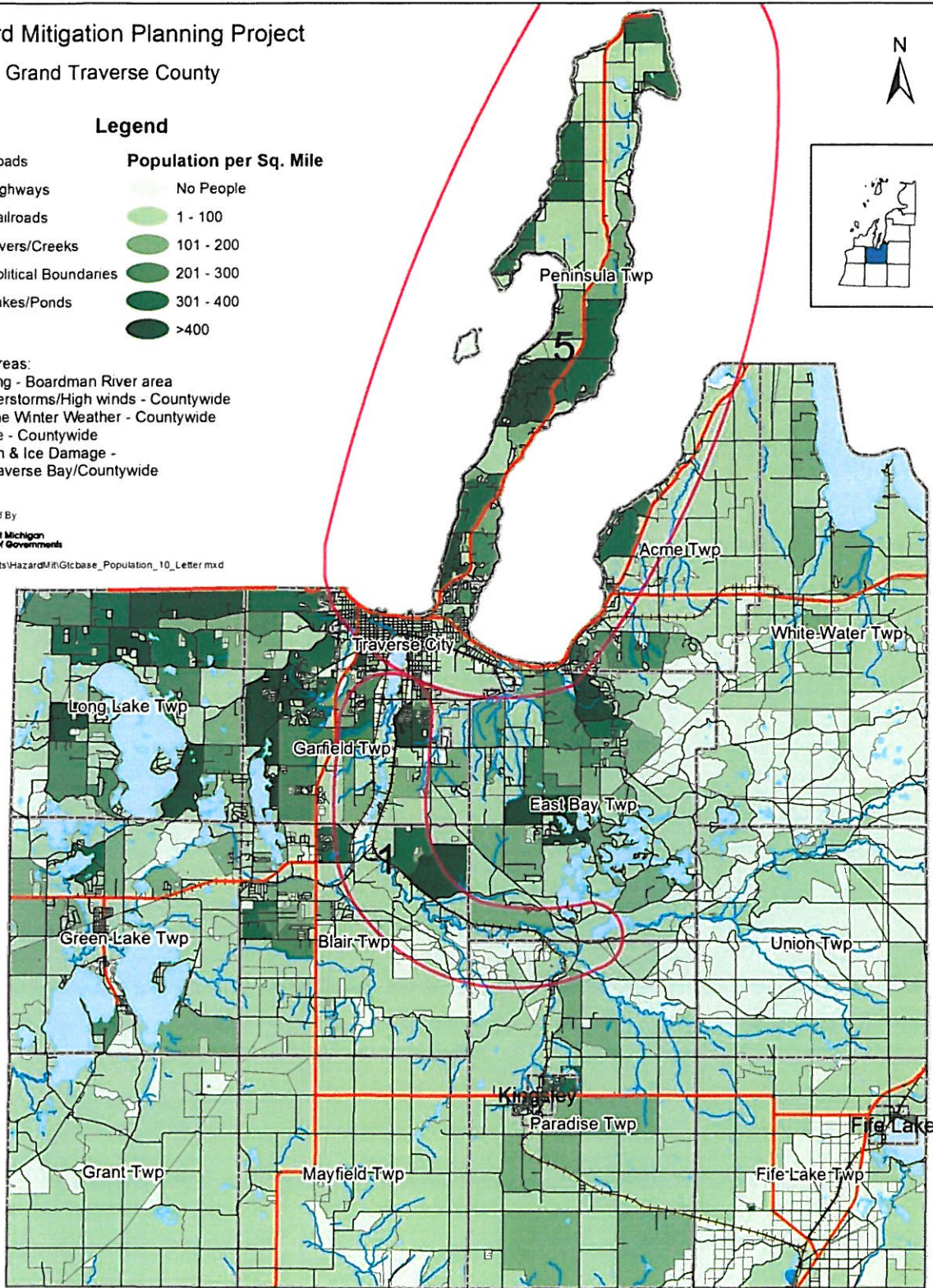
Priority Areas:

1. Flooding - Boardman River area
2. Thunderstorms/High winds - Countywide
3. Extreme Winter Weather - Countywide
4. Wildfire - Countywide
5. Erosion & Ice Damage - Grand Traverse Bay/Countywide

Map Produced By



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Appendix D

Risk Assessment Summary Table: GRAND TRAVERSE COUNTY

HAZARD (Years of Record)	Number of Events	Probability**	Geographic Size Affected	Population Impacted	Specific Priority Area	Estimated Damage Known Costs
Flooding (1986 – 2013)	7	Frequent	County Wide Boardman River Communities	86,986 46,306	1	\$6,894,000 property damage
Hail (1958 – 2014)	26	Frequent	County Wide	86,986		.75 inch to 2 inch magnitude
Shoreline Erosion	No recorded major events	Rare	Traverse City, Peninsula, East Bay, and Acme Townships	35,145	5	
Extreme Winter Weather (1993 – 2014)	105	Frequent	County Wide	86,986	3	\$5,112,000 property damage and power outages \$15,000,000 crop damage (statewide)
Severe Thunderstorm/High Winds/Lightning (1955 – 2014)	54	Frequent	County Wide	86,986	2	\$477,500 property damage
Tornadoes	4	Rare	County Wide	86,986	2	\$775,000 property damage
Wildfires (1981 – 2010)	386	Occasional	County Wide	86,986	4	1300 acres

**Rare - Hazard event is likely to occur less than once every 30 years.

Occasional - Hazard event is likely to occur less than once every 5 years, but more often than once every 30 years.

Frequent - Hazard event is likely to occur more than once every 5 years.

Appendix E

Examples of Past Mitigation Projects

Flood Projects	Tornado/Wind Projects	Extreme Cold/Winter/Infrastructure Failure Projects
Replace culvert with bridge	Modify roof ballast system on airport	Insulate municipal water tower
Install stormwater relief drain	Construct storm shelters in public buildings	Insulate city infrastructure
Upgrade road culvert	Construct storm shelters for homes, facilities	Insulate sanitary/storm sewer mains
Elevate floors of homes	Wind bracing for microwave/radio towers	Insulate water mains
Acquire of floodway properties	Construct mobile home park storm shelter	Bury utility lines
Create retention basin	Wind retrofitting for municipal buildings	Relocate sewer mains
Construct new dike	Wind bracing for school facilities	Reroute power lines under a river
Upgrade bridge over a creek (for greater stream flow)	Upgrade warning sirens**	Install plumbing devices to prevent sewer backup
Install sea wall	Install warning sirens**	Elevate and build casing for generator for EOC
Install rip rap to protect roadway	Purchase/Distribute NOAA radios**	Living snow fences for highways and roadways
Re-route various county drains	Severe weather monitoring systems**	
Purchase back-flow prevention valves	Implement long-term community outreach**	
Construct new drains for flood relief		
Flood study for home acquisition		
Flood study of community's flood risk	Thunderstorm/Lightning Projects	Wildfire Projects
Flood study for stream, roadways	Lightning protection (grounding/phasing)	Vegetation management for roadways
Elevate electrical equipment in basements	Purchase/Distribute NOAA radios**	Vegetation mgmt. for urban interface areas of city
Floodproof wastewater treatment plant	Install weather alert monitors**	Vegetation mgmt. for homes in fire prone areas
Warning sensor for creek/river		Urban Interface Education Program**
Warning sensor for dam		
Raise manholes above 100-Yr floodplain		
Expand storm sewer network for subdivision		
Excavate floodway channel bypass		
Establish permanent flood elevation benchmarks**		
Increase pump capacity for pump stations		
Remove abandoned dam		
Construct emergency floodway		
Install plumbing devices to prevent sewer backup		

**Denotes Hazard Mitigation Grant Program State Discretionary projects (only 5-10% set aside of HMGP funding)

Appendix F

Resources

Benchmarks 2014, Northwest Michigan Council of Governments

Confronting Climate Change in the Great Lakes Region, Michigan fact sheet, Union of Concerned Scientists and the Ecological Society of America, April 2003.

Integrating Human-Caused Hazards Into Mitigation Planning, State and Local Mitigation Planning how-to guide: Federal Emergency Management Agency, September 2002, FEMA 386-7 CD.

Local Hazard Mitigation Planning Workbook: EMD-PUB 207, February 2003, Emergency Management Division, Michigan Department of State Police.

Michigan Hazard Analysis 2012, EMD-PUB 103, July 2012, Emergency Management and Homeland, Security Division / Michigan Department of State Police

National Oceanic and Atmospheric Administration: Weather/Climate Events, Information, Assessments; Climatology and Extreme Events; U.S. Storm Events Data Base; 1950-present, local storm reports, damage reports, etc. from various sources. www.ncdc.noaa.gov

Northwest Michigan County Profiles 2010, Northwest Michigan Council of Governments, November 2002.

Northwest Michigan Council of Governments Website Data, nwm.org.

Planning for a Disaster-Resistant Community: A One-Day Workshop for City and County Planners, Planning Officials, and Consultants: American Planning Association Research Department, American Planning Association, 2002 in cooperation with the Federal Emergency Management Agency, Planning and Mitigation Branch (materials only).

Platte River Watershed Management Plan, Benzie County Conservation District, April 2002.

State and Local Mitigation Planning how to guide: Understanding Your Risks, identifying hazards and estimating losses: Federal Emergency Management Agency, August 2001, FEMA 386-2.

CHARTER TOWNSHIP OF GARFIELD

RESOLUTION 2016-03-T

A RESOLUTION AMENDING AND RESTATING OF THE GARFIELD TOWNSHIP GOVERNMENTAL NON-ERISA RETIREMENT PLAN

The following is a formal record of action taken by the governing body of the Garfield Township (the municipality).

With respect to the amendment and restatement of the Garfield Township Governmental Non-ERISA Retirement Plan (the "Plan"), the following resolutions are hereby adopted:

RESOLVED: That the plan be amended and restated in the form attached hereto, which Plan is hereby adopted and approved;

RESOLVED FURTHER: That the authorized signor of the Municipality be, and is hereby, authorized and directed to execute the Plan on behalf of the Municipality.

Dated the _____ day of _____, 2016.

Moved:

Supported:

Yeas:

Nays:

Absent/Excused:

The Chairman declared Resolution 2016-03-T duly adopted this ___ day of _____, 2016.

Lanie McManus, Township Clerk

CERTIFICATION

I, Lanie McManus, Clerk of the Charter Township of Garfield do hereby certify that the above is a true and correct copy of a Resolution which was adopted by the Board of Trustees for the Charter Township of Garfield on the 12th day of January, 2016.

Lanie McManus, Township Clerk

October 23, 2015

Ms. Lanie McManus, Clerk
Garfield Township
3848 Veterans Drive
Traverse City, MI 49684

Re: Garfield 401(a) Defined Contribution Plan

Dear Ms. McManus:

The Internal Revenue Service (IRS) requires retirement plan sponsors to restate their plan documents at regular intervals. We are currently within an IRS mandated restatement cycle and must update your group retirement plan document. We perform these periodic amendments as part of the administrative services we provide for your plan at no additional costs.

Enclosed is the amended and restated plan in the form of an adoption agreement for the Garfield Township Governmental Non-ERISA Retirement Plan (the plan). This adoption agreement replaces your current plan document. This restatement is required to bring the plan into compliance with the Pension Protection Act of 2006 and other legislative and regulatory changes. The new plan is primarily a restatement and consolidation of previously adopted good faith amendments and does not result in substantive changes to your plan's operation. In addition, it will not result in any new fees or charges to your plan or participants.

Enclosed with this letter you will find:

1. Your adoption agreement, which spells out the specific and unchanged provisions of your plan.
2. A sample board resolution to adopt the plan.
3. The basic plan document, which contains the necessary language that applies to all plans.
4. The IRS advisory letter, pre-approving the plan as tax-qualified.

To satisfy the restatement requirement, please approve the resolution and sign and date all documents where indicated. Upon execution, please return one copy of the signature page to us in the envelope provided along with a copy of the resolution. Please return by November 30, 2015. Please keep the remaining documents for your records.

Should you have any questions, please feel free to contact me or your Burnham & Flower plan administrator at 800.748.0554. We can also be reached at retirement@bfgroup.com.

Sincerely,



Amber Howes
Manager, Group Retirement & Administration
Enc.



TAX EXEMPT AND
GOVERNMENT ENTITIES
DIVISION

DEPARTMENT OF THE TREASURY
INTERNAL REVENUE SERVICE
WASHINGTON, D.C. 20224

Plan Description: Volume Submitter Money Purchase Pension Plan
FFN: 315C0830003-004 Case: 201200255 EIN: 13-3504158
Letter Serial No: J599430a
Date of Submission: 03/30/2012

CCH INCORPORATED DBA FTWILLIAM COM
700 W. VIRGINIA STREET, SUITE 305
MILWAUKEE, WI 53204

Contact Person:
Janell Hayes
Telephone Number:
513-263-3602
In Reference To: TEGE:EP:7521
Date: 03/31/2014

Dear Applicant:

In our opinion, the form of the plan identified above is acceptable under section 401 of the Internal Revenue Code for use by employers for the benefit of their employees. This opinion relates only to the acceptability of the form of the plan under the Internal Revenue Code. It is not an opinion of the effect of other Federal or local statutes.

You must furnish a copy of this letter, a copy of the approved plan, and copies of any subsequent amendments to adopting employers if the practitioner is authorized to amend the plan on their behalf, to each employer who adopts this plan. Effective on or after 10/31/2011, interim amendments adopted by the practitioner on behalf of employers must provide the date of adoption by the practitioner.

This letter considers the changes in qualification requirements contained in the 2010 Cumulative List of Notice 2010-90, 2010-52 I.R.B. 909.

Our opinion on the acceptability of the form of the plan is not a ruling or determination as to whether an employer's plan qualifies under Code section 401(a). However, an employer that adopts this plan may rely on this letter with respect to the qualification of its plan under Code section 401(a), as provided for in Rev. Proc. 2011-49, 2011-44 I.R.B. 608, and outlined below. The terms of the plan must be followed in operation.

Except as provided below, our opinion does not apply with respect to the requirements of Code sections 401(a)(4), 401(l), 410(b), and 414(s). Our opinion does not apply for purposes of Code section 401(a)(10)(B) and section 401(a)(16) if an employer ever maintained another qualified plan for one or more employees who are covered by this plan. For this purpose, the employer will not be considered to have maintained another plan merely because the employer has maintained another defined contribution plan(s), provided such other plan(s) has been terminated prior to the effective date of this plan and no annual additions have been credited to the account of any participant under such other plan(s) as of any date within the limitation year of this plan. Also, for this purpose, an employer is considered as maintaining another plan, to the extent that the employer maintains a welfare benefit fund defined in Code section 419(e), which provides postretirement medical benefits allocated to separate accounts for key employees as defined in Code section 419A(d)(3), or an individual medical account as defined in Code section 415(l)(2), which is part of a pension or annuity plan maintained by the employer, or a simplified employee pension plan.

Our opinion does not apply for purposes of the requirement of section 1.401(a)-1(b)(2) of the regulations applicable to a money purchase plan or target benefit plan where the normal retirement age under the employer's plan is lower than age 62.

Letter 4335

This is not a ruling or determination with respect to any language in the plan that reflects Section 3 of the Defense of Marriage Act, Pub. L. 104-199, 110 Stat. 2419 (DOMA) or U.S. v. Windsor, 133 S. Ct. 2675 (2013), which invalidated that section.

This letter is not a ruling with respect to the tax treatment to be accorded contributions which are picked up by the governmental employing unit within the meaning of section 414(h)(2) of the Internal Revenue Code.

Our opinion applies with respect to the requirements of Code section 410(b) if 100 percent of all nonexcludable employees benefit under the plan. Employers that elect a safe harbor allocation formula and a safe harbor compensation definition can also rely on an advisory letter with respect to the nondiscriminatory amounts requirement under section 401(a)(4). If this plan includes a CODA or otherwise provides for contributions subject to sections 401(k) and/or 401(m), the advisory letter can be relied on with respect to the form of the nondiscrimination tests of 401(k)(3) and 401(m)(2) if the employer uses a safe harbor compensation definition. In the case of plans described in section 401(k)(12) or (13) and/or 401(m)(11) or (12), employers may also rely on the advisory letter with respect to whether the form of the plan satisfies the requirements of those sections unless the plan provides for the safe harbor contribution to be made under another plan.

The employer may request a determination (1) as to whether the plan, considered with all related qualified plans and, if appropriate, welfare benefit funds, individual medical benefit accounts, and simplified employee pension plans, satisfies the requirements of Code section 401(a)(16) as to limitations on benefits and contributions in Code section 415 and the requirements of Code section 401(a)(10)(B) as to the top-heavy plan requirements in Code section 416; (2) with respect to whether a money purchase or target benefit plan's normal retirement age which is earlier than age 62 satisfies the requirements of section 401(a)-1(b)(2) of the Income Tax Regulations; (3) that the plan is a multiple employer plan; (4) whether there has been a partial termination; and (5) to comply with published procedures of the Service (e.g. minimum funding waiver request). The employer may request a determination letter by filing an application with Employee Plans Determinations on Form 5307, with regard to item (1) above, and Form 5300, for items (2), (3), (4) and (5), without restating for the Cumulative List in effect when the application is filed.

If you, the volume submitter practitioner, have any questions concerning the IRS processing of this case, please call the above telephone number. This number is only for use of the practitioner. Individual participants and/or adopting employers with questions concerning the plan should contact the volume submitter practitioner. The plan's adoption agreement, if applicable, must include the practitioner's address and telephone number for inquiries by adopting employers.

If you write to the IRS regarding this plan, please provide your telephone number and the most convenient time for us to call in case we need more information. Whether you call or write, please refer to the Letter Serial Number and File Folder Number shown in the heading of this letter.

You should keep this letter as a permanent record. Please notify us if you modify or discontinue sponsorship of this plan.

Sincerely Yours,



Andrew E. Zuckerman
Director, Employee Plans Rulings and Agreements

**GARFIELD CHARTER TOWNSHIP
GOVERNMENTAL NON-ERISA RETIREMENT PLAN**

**GARFIELD CHARTER TOWNSHIP
GOVERNMENTAL NON-ERISA RETIREMENT PLAN**

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**ADOPTION AGREEMENT #004
VOLUME SUBMITTER GOVERNMENTAL PENSION PLAN**

The undersigned adopting employer hereby adopts this Plan and its related Trust to the extent an outside trust is not used. The Plan and Trust are intended to qualify as a tax-exempt plan and trust under Code sections 401(a) and 501(a), respectively. The Plan is further intended to qualify as a governmental plan under Code section 414(d). The Plan shall consist of this Adoption Agreement, its related Basic Plan Document and any related Appendix and Addendum to the Adoption Agreement. Unless otherwise indicated, all Section references are to Sections in the Basic Plan Document.

EMPLOYER INFORMATION

NOTE: An amendment is not required to change the responses in items 1-10 below.

NOTE: The Plan Sponsor must be an entity that is eligible to adopt a governmental plan as defined in Code section 414(d).

1. Name of adopting employer (Plan Sponsor): Garfield Charter Township
2. Address: 3848 Veterans Drive
3. City: Traverse City
4. State: MI
5. Zip: 49684-4519
6. Phone number: 231-941-1620
7. Fax number: 231-941-1588
8. Plan Sponsor EIN: 38-1915740
9. Plan Sponsor fiscal year end: 12/31/2015
10. State of organization of Plan Sponsor: MI

PLAN INFORMATION

SECTION A. GENERAL INFORMATION

Plan Name/Effective Date

1. Plan Number: 001
2. Plan name:
 - a. Garfield Charter Township
 - b. Governmental Non-ERISA Retirement Plan

NOTE: A.1 is optional.
3. Effective Date
 - a. Original effective date of Plan: 12/15/1968
 - b. This is a restatement of a previously-adopted plan. Effective date of Plan restatement: 1/1/2016

NOTE: The date specified in A.3a for a new plan may not be earlier than the first day of the Plan Year during which the Plan is adopted by the Plan Sponsor.

NOTE: If A.3b is not selected, the Effective Date of the terms of this document shall be the date specified in A.3a. If A.3b is selected, the Effective Date of the restatement shall be the date specified in A.3b. However if the Adoption Agreement states another specific effective date for any Plan provision, when a provision of the Plan states another effective date, such stated specific effective date shall apply as to that provision. The date specified in A.3b for an amended and restated plan (including the initial PPA restatement) may not be earlier than the first day of the Plan Year during which the amended and restated Plan is adopted by the Plan Sponsor.

4. Plan Year
 - a. Plan Year means each 12-consecutive month period ending on 31-Dec (e.g. December 31)
 - b. The Plan has a short Plan Year. The short Plan Year begins _____ and ends _____

Limitation Year means:

- a. Plan Year
- b. calendar year
- c. other: _____

NOTE: If A.5c is selected, the Limitation Year must be a consecutive 12-month period.

6. Frozen Plan

The Plan is frozen as to eligibility and benefits effective _____

NOTE: If A.6 is selected, no Eligible Employee shall become a Participant, no Participant shall be eligible to further participate in the Plan and no contributions shall accrue as of and after the date specified.

Plan Features

7. Employee Contributions(Section 4.01)

a. Mandatory Employee Contributions (pick-up contributions) are permitted under the Plan:

i. Yes, _____% of Compensation

ii. Yes, salary schedule according to the chart below:

Salary Range

Mandatory Employee Contributions

iii. Yes, other fixed method: _____

iv. No

b. Voluntary (After-Tax) Contributions are permitted:

i. Yes

ii. No

iii. Formerly Allowed

c. Mandatory After-Tax Employee Contributions are permitted under the Plan:

i. Yes, _____% of Compensation

ii. Yes, salary schedule according to the chart below:

Salary Range

Mandatory After-Tax Employee Contributions

iii. Yes, other fixed method: _____

iv. No

NOTE: If A.7a is "No", questions regarding Mandatory Employee Contributions are disregarded.

NOTE: If other method (A.7a.iii or A.7c.iii) is selected, the method must be objectively determinable and may not be specified in a manner that is subject to Employer discretion.

Compensation

8. Compensation

a. Definition of Compensation for purposes of allocating contributions:

i. W-2. Wages within the meaning of Code section 3401(a) and all other payments of compensation paid to an Employee by the Employer (in the course of the Employer's trade or business) for which the Employer is required to furnish the Employee a written statement under Code sections 6041(d), 6051(a)(3), and 6052.

ii. Base Compensation. The basic annual rate of compensation in effect at the beginning of the period selected below (A.8b).

iii. Withholding. Wages paid to an Employee by the Employer (in the course of the Employer's trade or business) within the meaning of Code section 3401(a) for the purposes of income tax withholding at the source.

iv. Other: _____

b. Compensation is determined over the period specified below ending with or within the Plan Year:

i. Plan Year

ii. calendar year

iii. Plan Sponsor Fiscal Year

iv. Limitation Year

v. Other 12-month period beginning on: _____ (enter month and day)

c. Include Employee Contributions in the definition of Compensation.

d. Include deemed Code section 125 compensation in the definition of Compensation.

e. Include differential military pay (as defined in Code section 3401(h)(2)) in the definition of Compensation (Section 3.08).

f. Include other pay (not otherwise included in A.8a): _____

NOTE: If other (A.8a.iv) is selected, Compensation must be objectively determinable and may not be specified in a manner that is subject to Employer discretion.

NOTE: A.8b must be "Plan Year" if the Plan is excluding compensation earned before entry (A.11 is selected).

NOTE: If "Plan Year" is not selected in A.8b, for new/rehired Employees whose date of hire is less than 12 months before the end of the 12-month period designated, Compensation will be determined over the Plan Year.

NOTE: If employee contributions are included (A.8c is selected), Compensation shall also include any amount which is contributed by the Employer pursuant to a salary reduction agreement and which is not includable in the gross income of the Employee under Code sections 125, 402(e)(3), 402(h), 403(b), 122(f) or 457.

NOTE: Employee contributions are always included in the definition of Compensation for purposes of Mandatory Employee Contributions.

NOTE: If deemed Code section 125 compensation (A.8d) is selected, Compensation shall include any amounts not available to a Participant in cash in lieu of group health coverage because the Participant is unable to certify that he or she has other health coverage. An amount will be treated as an amount under Code section 125 only if the Employer does not request or collect information regarding the Participant's other health coverage as part of the enrollment process for the health plan. This option is meant to be interpreted consistent with Revenue Ruling 2002-27.

NOTE: If A.8e is not selected and differential military pay exists, the payments will be included in Statutory Compensation.

NOTE: If other pay (A.8f) is selected, A.8f should indicate for what purposes (e.g., Mandatory Employee Contributions, etc.) and which class of Participants the Compensation is included, must be objectively determinable and may not be specified in a manner that is subject to Employer discretion.

9. Post Severance Compensation

Include Post Severance Compensation (unused sick or vacation pay/nonqualified plan payments) in definition of Compensation.

NOTE: A.9 will also apply for purposes of Statutory Compensation.

10. Post Year End Compensation

Determine Compensation using Post Year End Compensation

NOTE: If selected, amounts earned during the current year and paid during the first few weeks of the next year will be included in current year Compensation.

NOTE: A.10 will also apply for purposes of Statutory Compensation.

Compensation Exclusions

11. Pay Before Participation

Exclude pay earned before participation in the Plan from definition of Compensation.

NOTE: If selected, Compensation shall include only that compensation which is actually paid to the Participant during that part of the Plan Year the Participant is eligible to participate in the Plan. If not selected, Compensation shall include that compensation which is actually paid to the Participant during the Plan Year.

Other Pay

Exclude other pay from definition of Compensation: Overtime, Bonuses, Commissions

NOTE: A.12 should indicate for what purposes (e.g., Mandatory Employee Contributions, etc.) and which class of Participants the Compensation is excluded.

NOTE: The pay specified above must be objectively determinable and may not be specified in a manner that is subject to Employer discretion.

13. Statutory Compensation

a. Definition of Statutory Compensation:

- i. W-2. Wages within the meaning of Code section 3401(a) and all other payments of compensation paid to an Employee by the Employer (in the course of the Employer's trade or business) for which the Employer is required to furnish the Employee a written statement under Code sections 6041(d), 6051(a)(3), and 6052.
- ii. Withholding. Wages within the meaning of Code section 3401(a) for the purposes of income tax withholding at the source paid to the Employee by the Employer (in the course of the Employer's trade or business).
- iii. Section 415 Safe Harbor Option. As described in the definition of "Section 415 Safe Harbor Option" in Article 2 of the Basic Plan Document.

b. Include deemed Code section 125 compensation in definition of Statutory Compensation:

NOTE: See A.9 and A.10 to determine if Statutory Compensation will include Post Severance Compensation and/or be determined using Post Year End Compensation.

NOTE: If A.8e is not selected and differential military pay exists, the payments will be included in Statutory Compensation.

Definitions

14. Disability

Definition of Disability

- a. Under Code section 22(e). The Participant is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months. The permanence and degree of such impairment shall be supported by medical evidence.
- b. Under the Social Security Act. The determination by the Social Security Administration that the Participant is eligible to receive disability benefits under the Social Security Act.

- c. Inability to engage in comparable occupation. The Participant suffers from a physical or mental impairment that results in his inability to engage in any occupation comparable to that in which the Participant was engaged at the time of his disability. The permanence and degree of such impairment shall be supported by medical evidence.
- d. Pursuant to other Employer Disability Plan. The Participant is eligible to receive benefits under an Employer-sponsored disability plan.
- e. Under uniform rules established by the Plan Administrator. The Participant is mentally or physically disabled under a written policy.
- f. Other: _____

NOTE: If A.14f is selected, provide the definition of Disability. The definition provided must be objectively determinable and may not be specified in a manner that is subject to discretion.

15. Choice of Law/State Law

- a. Name of state or commonwealth for choice of law (Section 13.05): Michigan
- b. Enter any state law provisions that apply to the Plan: Michigan

NOTE: Only state law and regulations may be entered in A.15b. The Plan may not violate applicable state law.

SECTION B. ELIGIBILITY

Eligible Employee

1. The term "Eligible Employee" shall include:

- a. All Employees
- b. The following Employees: All Elected Officials & all Full Time Employees (37 Hours)
- c. All Employees except the following (select all that apply):
 - i. Union Employees. Any Employee who is included in a unit of Employees covered by a collective bargaining agreement, if retirement benefits were the subject of good faith bargaining, and if the collective bargaining agreement does not provide for participation in this Plan.
 - ii. Leased Employees.
 - iii. Non-Resident Aliens. Any Employee who is a non-resident alien who received no earned income (within the meaning of Code section 911(d)(2)) which constitutes income from services performed within the United States (within the meaning of Code section 861(a)(3)).
 - iv. Other Employees: _____

NOTE: See Section 3.06(a) for rules regarding excluded Employees.

NOTE: If B.1b is selected, describe the Employees and indicate for what purposes (e.g., Pension Contributions, etc.) the Employees are eligible. The definition provided must be objectively determinable and may not be specified in a manner that is subject to discretion. In order to meet the permanency requirement of Treas. Reg. section 1.401-1 (b)(2), a specific person or persons may be named by position/title but not given name; a finite group of individuals that cannot increase/change over time (such as those hired before a specific date) may not be used.

NOTE: If B.1c.iv is selected, describe other excluded Employees from definition of Eligible Employee and indicate for what purposes (e.g., Pension Contributions, etc.) the Employees are excluded. The definition provided must be objectively determinable and may not be specified in a manner that is subject to discretion.

2. Opt-Out.

- An Employee may irrevocably elect not to participate in the Plan.

NOTE: If the Plan provides for Mandatory Employee Contributions (A.7a.iv is not selected), B.2 shall not apply to Mandatory Employee Contributions.

Eligibility Service Rules

3. Other Employer Service

- Count service with employers other than the Employer for eligibility purposes. List other employers along with any limitations: _____

4. Special Participation Date

- a. Allow immediate participation for all Eligible Employees employed on a specific date. All Eligible Employees employed on _____ shall become eligible to participate in the Plan as of _____
- b. The Plan provides conditions or limitations on immediate participation: _____

NOTE: If B.4b applies (B.4a is selected) and is selected, describe the conditions or limitations that apply. The conditions/limitations must be objectively determinable and may not be specified in a manner that is subject to discretion.

Eligibility for Mandatory Employee Contributions/Voluntary Contributions/Mandatory After-tax Employee Contributions

Eligible Employee shall be eligible to receive/make Mandatory Employee Contributions/Voluntary Contributions/Mandatory After-tax Employee Contributions (if permitted pursuant to A.7) at the time specified in B.8 upon meeting the requirements of B.5 through B.7 (Section 3.01).

5. Age Requirement for Employee Contributions

Minimum age requirement for Mandatory Employee Contributions/Voluntary Contributions/Mandatory After-tax Employee Contributions: None

6. Service Requirement for Employee Contributions

Minimum service requirement for Mandatory Employee Contributions/Voluntary Contributions/Mandatory After-tax Employee Contributions:

Contributions:

- a. None
- b. Completion of ____ year(s) of eligibility service
- c. Completion of ____ Hours of Service in a ____ month period
- d. Completion of ____ Hours of Service within a 12-month period. The service requirement shall be deemed met at the time the specified number of Hours of Service are completed.
- e. Completion of 3 months of service
- f. Completion of ____ days of service
- g. Other: ____

NOTE: If B.6g is selected, the service requirements provided must be definitely determinable and may not be specified in a manner that is subject to discretion.

7. Additional Requirements for Employee Contributions

Additional requirements, limitations, conditions or other modifications to B.5-6 (eligibility to make Mandatory Employee Contributions/Voluntary Contributions/Mandatory After-tax Employee Contributions) apply: ____

NOTE: The additional requirements provided must be objectively determinable and may not be specified in a manner that is subject to discretion.

Entry Dates for Employee Contributions

a. Frequency of entry dates for Mandatory Employee Contributions/Voluntary Contributions/Mandatory After-tax Employee Contributions:

- i. immediate
- ii. first day of each calendar month
- iii. first day of each Plan quarter
- iv. first day of the first month and seventh month of the Plan Year
- v. first day of the Plan Year
- vi. other: ____

b. An Eligible Employee shall become a Participant eligible to make Mandatory Employee Contributions/Voluntary Contributions/Mandatory After-tax Employee Contributions on the entry date selected in B.8a that is:

- i. coincident with or next following the date the requirements of B.5 through B.7 are met
- ii. next following the date the requirements of B.5 through B.7 are met

NOTE: If B.8a.i is selected, an Eligible Employee shall become a Participant eligible to make Mandatory Employee Contributions/Voluntary Contributions/Mandatory After-tax Employee Contributions immediately upon meeting the requirements of B.5 through B.7.

NOTE: If B.8a.vi is selected, the other entry date must be objectively determinable and may not be specified in a manner that is subject to discretion.

NOTE: B.8b is not applicable if B.8a.i or B.8a.vi (immediate entry/other) is selected.

Eligibility for Pension Contributions

9. Eligibility for Pension Contributions (select one):

- a. Same as Mandatory Employee Contributions/Voluntary Contributions/Mandatory After-tax Employee Contributions. An Eligible Employee shall be eligible to receive an allocation of Pension Contributions at the time specified in B.8 upon meeting the requirements of B.5 through B.7
- b. Pursuant to options selected below. An Eligible Employee shall be eligible to receive an allocation of Pension Contributions at the time specified in B.13 upon meeting the requirements of B.10 through B.12

NOTE: If B.9a is selected B.10 - B.13 shall be inapplicable.

10. Age Requirement for Pension Contributions

Minimum age requirement for Pension Contributions: None

11. Service Requirement for Pension Contributions

Minimum service requirements for Pension Contributions:

- a. None
- b. Completion of ____ year(s) of eligibility service
- c. Completion of ____ Hours of Service in a ____ month period
- d. Completion of ____ Hours of Service within a 12-month period. The service requirement shall be deemed met at the time the specified number of Hours of Service are completed.
- e. Completion of 3 months of service
- f. Completion of ____ days of service
- g. Other: ____

NOTE: If B.10g is selected, the service requirements provided must be definitely determinable and may not be specified in a manner that is subject to discretion.

12. Additional Requirements for Pension Contributions

Additional requirements, limitations, conditions or other modifications to B.10-11 (eligibility to receive Pension Contributions) apply: ____

NOTE: The additional requirements provided must be objectively determinable and may not be specified in a manner that is subject to discretion.

13. Entry Dates for Pension Contributions

a. Frequency of entry dates for Pension Contributions:

- i. immediate
- ii. first day of each calendar month
- iii. first day of each Plan quarter
- iv. first day of the first month and seventh month of the Plan Year
- v. first day of the Plan Year
- vi. other: ____

b. An Eligible Employee shall become a Participant eligible to receive Pension Contributions on the entry date selected in B.13a that is:

- i. coincident with or next following the date the requirements of B.10 through B.12 are met
- ii. next following the date the requirements of B.10 through B.12 are met
- iii. coincident with or immediately preceding the date the requirements of B.10 through B.12 are met
- iv. immediately preceding the date the requirements of B.10 through B.12 are met
- v. nearest to the date the requirements of B.10 through B.12 are met

NOTE: If immediate entry (B.13a.i) is selected, an Eligible Employee shall become a Participant eligible to receive Pension Contributions immediately upon meeting the requirements of B.10 through B.12.

NOTE: If B.13a.vi is selected the other entry date must be objectively determinable and may not be specified in a manner that is subject to discretion.

NOTE: B.13b is not applicable if immediate or other entry (B.13a.i or B.13a.vi) is selected.

Transfers/Rehires

14. Transfers/Rehires

- a. If an Employee either (1) upon rehire again qualifies as an Eligible Employee (2) or if not previously an Eligible Employee who due to a change in status becomes an Eligible Employee, he shall become a Participant with respect to the contributions for which the eligibility requirements have been satisfied (Section 3.04):
 - i. as of the later of the effective date of such subsequent change of status or the date the Employee meets the eligibility requirements of this Article 3
 - ii. on the entry date as of the later of the effective date of such subsequent change of status or the date the Employee meets the eligibility requirements of this Article 3
- b. An individual who has satisfied the applicable eligibility requirements set forth in Article 3 before his rehire date, and who is subsequently reemployed by the Employer as an Eligible Employee shall resume or become a Participant (Section 3.05):
 - i. immediately upon his rehire date with respect to the contributions for which the eligibility requirements of this Article 3 have been satisfied
 - ii. on the entry date coincident with or next following his rehire date with respect to the contributions for which the eligibility requirements of this Article 3 have been satisfied

SECTION C. CONTRIBUTIONS

Voluntary Contributions

NOTE: If A.7b is "Yes" (Voluntary Contributions are permitted), an Eligible Employee who has met the requirements of B.5 through B.8 shall be eligible to make Voluntary Contributions to the Plan as follows (Section 4.01):

1. Minimum and Maximum Voluntary Contributions

- a. Minimum Voluntary Contribution: none
- b. Maximum Voluntary Contribution: 10%
- c. Other limits on Voluntary Contributions apply: none

NOTE: C.1a and C.1b may not be more than 100% of Compensation.

NOTE: If C.1c is selected the requirements provided must be objectively determinable and may not be specified in a manner that is subject to discretion.

Pension - Service

NOTE: An Eligible Employee who has met the requirements of B.9 through B.13 and who has satisfied the following requirements shall be eligible to receive an allocation of Pension Contributions during the applicable Plan Year.

2. Allocation Service Requirements for Pension Contributions

- a. None
- b. In order to share in the allocation of Pension Contributions, a Participant is required to complete at least the following number of Hours of Service in the applicable Plan Year _____
- c. In order to share in the allocation of Pension Contributions, a Participant is required to be employed by the Employer on the last day of Plan Year
- d. In order to share in the allocation of Pension Contributions, a Participant is required to be employed by the Employer on the last day of Plan Year or complete at least _____ Hours of Service in the applicable Plan Year

NOTE: C.2b and C.2c are inapplicable if C.2a or C.2d is selected.

Exceptions to Allocation Service Requirements for Pension Contributions

- a. Modify Hour of Service requirement and/or last day requirement for a Participant who Terminates employment with the Employer during the Plan Year due to:
 - i. death
 - ii. Disability
 - iii. attainment of Normal Retirement Age
- b. Any Hour of Service requirement and last day requirement shall be modified as follows:
 - i. Waive both the Hour of Service requirement and last day requirement
 - ii. Waive the Hour of Service requirement only
 - iii. Waive last day requirement only
- c. The following other modifications shall be made to the requirements specified in C.2-3b: _____

NOTE: C.3 is only applicable if C.2a, C.2b or C.2c is selected.

NOTE: C.3c may only be used to make minor changes to the requirements specified in C.2-3b and must be specified in a manner that is objectively determinable and may not be specified in a manner that is subject to Employer discretion. For example, C.3c could be used to clarify that last day but not Hours of Service is waived for death while Hours of Service and last day are waived for Disability and attainment of Normal Retirement Age.

Pension Contributions - Formula

- 4. Pension allocation formula. The Employer's Pension Contribution shall be allocated to eligible Participants who have met the requirements of B.9 through B.13 and C.2 through C.3 as follows (Section 4.03):
 - a. Pro rata. In the amount of _____ to be allocated in the ratio that each Participant's Compensation bears to the Compensation of all eligible Participants.
 - b. Points. In the amount of _____ to be allocated as described in C.5.
 - c. Fixed Amount. In the amount of _____ to be allocated by dividing the total amount by the number of Participants eligible to share in such contribution.
 - d. Defined Groups. See C.6
 - e. Other fixed formula: 10%

NOTE: If B.4e is selected, the other fixed formula must be objectively determinable and may not be specified in a manner that is subject to discretion.

5. Pension Contribution - Points

If C.5b is selected, the Employer's Pension Contribution shall be allocated to eligible Participants who have met the requirements of B.9 through B.13 and C.2 through C.3 in the ratio that such Participant's points bears to the points of all eligible Participants.

Each Participant shall receive to the extent provided in C.5a: (a) the points described in C.5d for each year of age he has attained (as of his birthday during such Plan Year), (b) the points described in C.5c for each Plan Year, including the current Plan Year, during which he was eligible to participate in the Plan after meeting the requirements of Article 3 (regardless of any service or last day requirement in Article 4) applicable to Pension Contributions, and (c) the points described in C.5b for each \$100 of Compensation he has earned for such Plan Year.

- a. Points will be computed on basis of:
 - i. Age, Service and Compensation
 - ii. Age and Service
 - iii. Age and Compensation
 - iv. Service and Compensation
 - v. Age Only
 - vi. Service Only
- b. Points awarded for \$100 of Compensation: _____
- c. Points awarded for each year of participation: _____
- d. Points awarded for each year of age: _____

NOTE: C.5b, C.5c and C.5d apply to the extent that C.5a provides points for Compensation, Years of Service and/or age, respectively.

6. Pension Contribution- Defined Groups

If C.4d is selected, the Employer's Pension Contribution shall be allocated to eligible Participants who have met the requirements of B.9 through B.13 and C.2 through C.3 in an amount designated by the Employer to be allocated to each group described in C.6. The contribution for a group shall then be further allocated to the members of such group who are eligible to receive allocations of Pension Contributions in the method as specified in C.6 for such group. The amount allocated to one group need not bear any relationship to amounts allocated to any other group. The Employer shall notify the Plan Administrator in writing of the amount of contributions allocated to each group.

- a. Group One: _____ An amount equal to:
 - i. A percentage of Compensation _____
 - ii. A fixed dollar amount _____
 - iii. the greater of i. or ii.

NOTE: Groups must be defined in a manner that is objectively determined with no Employer discretion. Groups may not be designed so that the permanency requirement of Treas. Reg. section 1.401-1(b)(2) is violated.

NOTE: See Section 3.06 for rules regarding eligibility requirements.

7. Allocation of Pension Contributions

- a. Pension Contributions are allocated to Participant Accounts at the following time(s):
 - i. End of Plan Year
 - ii. Semi-annually
 - iii. Quarterly
 - iv. Each calendar month
 - v. Each pay period
- b. Minimum and Maximum Pension Contributions
 - i. Allocations of Pension Contributions for a Participant shall be subject to a minimum amount: _____
 - ii. Allocations of Pension Contributions for a Participant shall be subject to a maximum amount: _____

NOTE: Any service requirements specified in C.2 through C.3 shall be applied pro rata to the period selected in this C.7a. Any last day rule specified in C.2 through C.3 shall be applied as of the end of each period selected in this C.7a.

8. Paid Time Off

- a. The Employer will contribute a Participant's unused paid time off (vacation and/or sick leave) as a Pension Contribution to the Plan. Unused paid time off shall be contributed to the Plan:
 - i. Each Plan Year
 - ii. Upon Termination
- b. The following limitations/conditions shall apply: _____

NOTE: Any unused paid time off where the Participant has the right to request cash payment is not eligible for contribution to the Plan under this C.8.

NOTE: The unused paid time off contributions must be contributed by multiplication of the Participant's current daily rate of pay against the amount of accrued unpaid leave.

NOTE: Paid time off contributions must conform with Revenue Rulings 2009-31 and 2009-32.

9. Pension - Disability

Allocate Pension Contributions to Disabled Participants who do not meet the allocation service requirements (Section 4.03(d)). Allocations to Disabled Participants end as of the earliest of: (i) the last day of the Plan Year in which occurs the ___ anniversary of the start of the Participant's Disability or (ii) such other time specified in Section 4.03(d).

NOTE: C.9 shall not be more than "tenth".

NOTE: Allocations under C.9 may occur after Termination.

10. Collective Bargaining Agreement

- a. In addition to the amount selected in C.4, an amount necessary to meet the Employer's requirements under an applicable collective bargaining agreement.
- b. The collective bargaining allocations will offset other employer contribution allocations that would otherwise be made to a Participant:
 - i. Yes - Pension contributions only
 - ii. No
 - iii. Other: _____

NOTE: C.4-7 (amount, timing, maximum and minimum Pension Contributions) will not apply to collectively bargained contributions. Collectively bargained contribution allocation timing, maximums and minimums will be determined under the collective bargaining agreement unless otherwise specified in C.10b.

Other Contributions

11. Prevailing Wage

- a. In addition to any other Pension Contributions, an amount necessary to meet the Employer's requirements under an applicable prevailing wage statute. The formula for allocating prevailing wage contributions shall be specified in an Addendum to the Adoption Agreement. The addition of such Addendum shall not be considered a modification to the Volume Submitter document.
- b. The prevailing wage contributions offset:
 - i. None
 - ii. The prevailing wage contributions will offset any other Pension Contribution allocations that would otherwise be made to a Participant.
 - iii. Other: _____

NOTE: Depending upon the offset rule chosen, timing of allocations may need to be considered as contributions under prevailing wage are typically required to be made not less often than quarterly.

NOTE: The offset provided under C.11b.iii must be objectively determinable and may not be specified in a manner that is subject to Employer discretion

NOTE: C.11b is only applicable if C.11a is selected.

12. Rollovers

Rollover Contributions are permitted (Section 4.04):

- a. No
- b. Yes - All Eligible Employees may make a Rollover Contribution even if not yet a Participant in the Plan
- c. Yes - Only active Participants may make a Rollover Contribution
- d. Yes - _____ Participants may make a Rollover Contribution

NOTE: The Plan Administrator has discretion under Section 4.05 to limit the types of Rollover Contributions accepted by the Plan and must use that discretion in a consistent manner.

13. Deemed IRAs

The Plan may accept voluntary contributions to deemed IRAs (Section 4.08) effective: _____

NOTE: If C.13 is selected, see Section 4.08 for rules regarding deemed IRAs.

14. Death or Disability During Qualified Military Service

For benefit accrual purposes, a Participant that dies or becomes Disabled while performing qualified military service will be treated as if he had been employed by the Employer on the day preceding death or Disability and terminated employment on the day of death or Disability pursuant to Code section 414(u)(9) (Section 6.02) effective: 1/1/2007

NOTE: Effective date must be on or after January 1, 2007.

15. 415 Additional Language

Additional language necessary to satisfy Code section 415 because of the required aggregation of multiple plans: _____.

SECTION D. VESTING

Vesting Schedules

1. Pension

Pension Contribution Account Vesting Schedule:

- a. 100%
- b. ____ year cliff
- c. Other:
 - i. Other Pension Schedule - less than 1 year: ____%
 - ii. Other Pension Schedule - 1 years but less than 2 years: ____%
 - iii. Other Pension Schedule - 2 years but less than 3 years: ____%
 - iv. Other Pension Schedule - 3 years but less than 4 years: ____%
 - v. Other Pension Schedule - 4 years but less than 5 years: ____%
 - vi. Other Pension Schedule - 5 years but less than 6 years: ____%
 - vii. Other Pension Schedule - 6 years but less than 7 years: ____%
 - viii. Other Pension Schedule - 7 years but less than 8 years: ____%
 - ix. Other Pension Schedule - 8 years but less than 9 years: ____%
 - x. Other Pension Schedule - 9 years but less than 10 years: ____%
 - xi. Other Pension Schedule - 10 years but less than 11 years: ____%
 - xii. Other Pension Schedule - 11 years but less than 12 years: ____%
 - xiii. Other Pension Schedule - 12 years but less than 13 years: ____%
 - xiv. Other Pension Schedule - 13 years but less than 14 years: ____%
 - xv. Other Pension Schedule - 14 years but less than 15 years: ____%
 - xvi. Other Pension Schedule - 15 years but less than 16 years: ____%
 - xvii. Other Pension Schedule - 16 years but less than 17 years: ____%
 - xviii. Other Pension Schedule - 17 years but less than 18 years: ____%
 - xix. Other Pension Schedule - 18 years but less than 19 years: ____%
 - xx. Other Pension Schedule - 19 years but less than 20 years: ____%
 - xxi. Other Pension Schedule - 20 years: 100%

NOTE: A cliff vesting schedule means no vesting is provided until the Participant meets the number of Years of Vesting Service provided in D.1b.

NOTE: D.1b and D.1c may not be completed with a cliff vesting schedule of more than 15. However, if substantially all Participants are qualified public safety employees within the meaning of Code section 72(t)(10)(B), the limit is increased to 20.

NOTE: D.1c may provide for a graded vesting schedule of up to 5 to 20 years.

2. Other Vesting Schedule

- The Plan has another vesting schedule: ____

NOTE: The vesting schedule in D.2 is in addition to the vesting schedule in D.1.

Vesting Service Rules

NOTE: If D.1a is selected and D.3a is not selected, the remaining options in section D.3-7 are inapplicable.

3. Vesting Computation Period

- a. Calendar year
- b. Plan Year
- c. The 12-consecutive month period commencing on the date the Employee first performs an Hour of Service; each subsequent 12-consecutive month period shall commence on the anniversary of such date
- d. Other: ____

NOTE: D.3d must be based on creditable years of service.

4. Other Employer Service

- Count service with employers other than the Employer for vesting purposes. List other employers for which the service applies along with any limitations: ____

Vesting Exceptions

- a. Death. Provide for full vesting for a Participant who Terminates employment with the Employer due to death while an Employee (Section 6.02).
- b. Disability. Provide for full vesting for a Participant who Terminates employment with the Employer due to Disability while an Employee (Section 6.02).

- c. Early Retirement. Provide for 100% vesting upon the attainment of Early Retirement Age while an Employee (Section 6.02).

6. Vesting Exclusions

- a. Exclude Years of Vesting Service earned before age 18.
b. Exclude Years of Vesting Service earned before the Employer maintained this Plan or a predecessor plan.

7. Vesting Forfeitures

- a. Upon termination, nonvested account balances shall be forfeited
i. as soon as administratively feasible
ii. other timeframe: _____
b. Upon receiving a distribution, the nonvested portion of the account shall be forfeited
i. as soon as administratively feasible
ii. other timeframe: _____

NOTE: The other timeframes must be definitely determinable and may not be specified in a manner that is subject to discretion.

8. Forfeitures and Re-employment

- a. forfeited account balances shall be restored and continue to vest (select any of the following if applicable)
i. only if the period of severance was less than or equal to the following period 1 year
ii. only to the extent the vested account balance was not distributed
iii. only to the extent the vested distributed account balance is restored to the Plan
b. forfeited account balances shall not be restored

9. Use of Forfeitures

Forfeitures will be used in the following manner (Articles 5 and 6):

- a. Any permissible method (restore forfeitures, reduce Employer contributions (or reallocate as Employer contributions) made pursuant to Article 4 or to pay Plan expenses)
b. Other: _____

NOTE: D.9b is limited to one or a combination of the options described in D.9a, D.9b may be used to further restrict the uses of forfeiture and must be applied in a consistent manner.

10. Special Vesting Provisions

- Provide for special vesting provisions: _____

NOTE: The special vesting provisions must be definitely determinable and may not be specified in a manner that is subject to discretion.

SECTION E. DISTRIBUTIONS

1. Normal Retirement

Normal Retirement Age means:

- a. Attainment of age 65
b. Later of attainment of age _____ and the _____ anniversary of Plan participation.
c. Other: _____

NOTE: Effective Plan Years beginning on or after the later of (1) January 1, 2015 or (2) the close of the first regular legislative session of the legislative body with the authority to amend the plan that begins on or after the date that is 3 months after the final regulations are published in the Federal Register, the definition of Normal Retirement Age must satisfy Treas. Reg. section 1.401(a)-1(b) pursuant to IRS Notice 2012-29.

2. Early Retirement

Early Retirement Age means:

- a. None. The Plan does not have an early retirement feature.
a. Attainment of age 55
b. Later of attainment of age _____ and _____ service.
c. Other: _____

3. Time of Payment (Other than Death)

Distributions after Termination of Employment for reasons other than death shall commence (Section 7.02):

- a. Immediate. As soon as administratively feasible with a final payment made consisting of any allocations occurring after such Termination of Employment.
b. End of Plan Year. As soon as administratively feasible after all contributions have been allocated relating to the Plan Year in which the Participant's Account balance becomes distributable
c. Normal Retirement Age. When the Participant attains Normal Retirement Age.
d. Other: _____

NOTE: Any entry in E.3d must comply with Code section 401(a)(9), Section 7.02(e) and other requirements of Article 7.

4. Form of Payment (Other than Death)

Medium of distribution from the Plan:

- a. Cash only
- b. Cash or in-kind rollover to an individual retirement account sponsored by the following vendor: _____
- c. Other: _____

5. Default Form of Payment (Other than Death)

- a. Unless otherwise elected by the Participant, distributions shall be made in the form of:
 - i. Lump sum only
 - ii. Other: _____
- b. In addition to the form described in E.5a, distributions from the Plan after Termination for reasons other than death may be made in the following forms (select all that apply):
 - i. Lump sum only
 - ii. Lump sum payment or substantially equal annual, or more frequent installments over a period not to exceed the joint life expectancy of the Participant and his Beneficiary
 - iii. Under a continuous right of withdrawal pursuant to which a Participant may withdraw such amounts at such times as he shall elect
 - iv. Other: _____

NOTE: Any entry in E.5a.ii and/or E.5b.iv must comply with Code section 401(a)(9), Section 7.02(e) and other requirements of Article 7.

6. Permit Distributions as an Annuity

Permit distributions in the form of an annuity

NOTE: If E.6 is selected, a Participant may elect to have the Plan Administrator apply his entire vested Account toward the purchase of an annuity contract, which shall be distributed to the Participant. The terms of such annuity contract shall comply with the provisions of this Plan and any annuity contract shall be nontransferable.

7. Payment upon Participant's Death

Distributions on account of the death of the Participant shall be made in accordance with the following:

- a. Pay entire Account balance by end of fifth year for all Beneficiaries in accordance with Sections 7.02(b)(1)(A) and 7.02(b)(2)(A) only
- b. Pay entire Account balance no later than the 60th day following the end of Plan Year in which the Participant dies
- c. Allow extended payments for all Beneficiaries in accordance with Sections 7.02(b)(1)(A), (B) and (C) and 7.02(b)(2)(A) and (B)
- d. Pay entire Account balance by end of fifth year for Beneficiaries in accordance with Sections 7.02(b)(1)(A) and 7.02(b)(2)(A) and allow extended payments in accordance with Sections 7.02(b)(1)(B) and (C) and 7.02(b)(2)(B) only if the Participant's spouse is the Participant's sole primary Beneficiary
- e. Other: _____

NOTE: Any entry in E.7e must comply with Code section 401(a)(9), Section 7.02(b) and other requirements of Article 7.

8. Beneficiaries

- a. Death benefits when there is no designated beneficiary:
 - i. Standard according to Section 7.04(c)
 - ii. Other: _____
- b. Revocation. A beneficiary designation to a spouse shall be automatically revoked upon the following circumstances: _____
- c. Domestic Partners are treated as a spouse under the terms of this Plan for purposes of death benefits to the extent applicable:
 - i. No
 - ii. Yes - limited to the following terms and conditions: _____
 - iii. Yes
- d. The term "Domestic Partner" as defined in Article 2 is modified in the following manner: _____

NOTE: If E.8a.ii (Other) is selected, death benefits when there is no designated beneficiary shall be provided pursuant to E.8a.ii. The death benefits described must be definitely determinable and may not be specified in a manner that is subject to discretion.

NOTE: If E.8c.i is selected, E.8d does not apply.

NOTE: If E.8d is selected, the modifications must be definitely determinable.

NOTE: Domestic Partners shall not be treated as a spouse under the following Sections of the Plan: 7.02(b) (distribution upon death), 7.05 (minimum distributions) and 7.06 (direct rollovers).

NOTE: If revocation is selected (E.8b) you may use this item to indicate automatic revocation upon divorce.

Cash Out

- a. Involuntary cash-out amount for purposes of Section 7.03: \$1000
- b. Involuntary cash-out of a terminated Participant's Account balance when it exceeds the cash-out amount specified in E.9a is deferred under Section 7.03(b) until:

- i. Later of age 62 or Normal Retirement Age - payment made in a lump sum only
 - ii. Required Beginning Date - Participant may elect payment in a lump sum or installments
 - iii. Required Beginning Date - payment made in a lump sum only
- c. Exclude amounts attributable to Rollover Contributions in determining the value of the Participant's nonforfeitable account balance for purposes of the Plan's involuntary cash-out rules (Section 7.03).

NOTE: E.9a has a \$5,000 maximum, \$5,000 will be entered unless otherwise specified.

NOTE: If E.9a is not selected, E.9c does not apply.

NOTE: If E.9a is less than \$1,000, E.9c may not be selected.

10. Required Beginning Date

Required Beginning Date for a Participant:

- a. Retirement. April 1 of the calendar year following the later of the calendar year in which the Participant: (a) attains age 70-1/2, or (b) retires
- b. Age 70-1/2. April 1 of the calendar year following the calendar year in which the Participant attains age 70-1/2
- c. Election. The option provided in E.9a; provided that a Participant may elect to commence distributions pursuant to either E.10a or E.10b

SECTION F. IN-SERVICE WITHDRAWALS

NOTE: See Section 8.05 for limits on in-service distributions.

NOTE: In-service withdrawal options are meant as enabling rules. If an in-service distribution is permitted under any option specified below, the in-service withdrawal is permissible.

In-Service Withdrawals

1. Retirement

- a. Allow in-service distributions after attainment of Normal Retirement Age (Section 7.01(b)) from the following Accounts:

Other Withdrawals

2. At Any Time (Section 8.03(b))

In-service withdrawals are allowed from the following Accounts at any time:

- a. Voluntary Contribution Account
- b. Rollover Contribution Account

NOTE: If nothing is indicated, no in-service withdrawals are allowed under this Section.

3. Disability

- Allow distributions upon Disability.

4. Other Conditions/Limitations

- The following limitations, conditions and/or special rules apply to in-service withdrawals: _____

NOTE: Unless otherwise specified, the limitations will apply to all in-service withdrawals (H.1 through H.3).

5. Loans

Loans are permitted:

- Yes
- No

SECTION G. PLAN OPERATIONS

1. Permitted Investments

- a. Plan may invest in life insurance (Section 9.06)

2. Participant Self-Direction

- a. Specify the extent to which the Plan permits Participant self-direction (Section 9.02):

- i. All Accounts
- ii. Some Accounts
- iii. None

- b. If Some Accounts is selected, a Participant may self-direct the following Accounts:

- i. Mandatory Employee Contribution Account
- ii. Mandatory After-tax Employee Contribution Account

- iii. Pension Contribution Account
- iv. Voluntary Contribution Account
- v. Rollover Contribution Account
- vi. Transfer Account
- vii. Other: _____

- c. Participants may also establish individual brokerage accounts.
- d. Participants may exercise voting rights with respect to investments (Section 9.05).

NOTE: If G.2a.iii (None) is selected, G.2b through G.2d do not apply.

NOTE: G.2b only applies if G.2a.ii is selected.

3. Valuation Date

Enter Valuation Date:

- a. Last day of Plan Year
- b. Last day of each Plan quarter
- c. Last day of each month
- d. Each business day
- e. Other: _____ (Must be at least annually).

4. Plan Administration

a. Designation of Plan Administrator (Section 11.01):

- i. Plan Sponsor
- ii. Committee appointed by Plan Sponsor
- iii. Other: _____

b. Establishment of procedures for the Plan Administrator and the Investment Fiduciary (Sections 11.01(c) and 11.02(c)):

- i. Plan Administrator and Investment Fiduciary adopt own procedures
- ii. Governing body of the Plan Sponsor sets procedures for Plan Administrator and Investment Fiduciary

c. Type of indemnification for the Plan Administrator and Investment Fiduciary:

- i. None - the Employer will not indemnify the Plan Administrator or the Investment Fiduciary
- ii. Standard according to Section 11.06
- iii. Provided pursuant to an outside agreement

d. The following modifications shall be made to the duties of the applicable parties: _____

NOTE: H.4d may be used to reallocate duties between the Plan Sponsor and the Plan Administrator. It may also be used to designate additional parties to perform specific Plan Administrator and/or Plan Sponsor duties.

5. Trust

a. Use the Trust agreement contained in the Basic Plan Document

- i. Yes
- ii. No
- iii. Yes, but only for the following assets/Accounts: _____; other assets/Accounts will use an outside Trust or an arrangement described in Code section 401(f).
- iv. Not Applicable - Assets are held solely by an arrangement described in Code section 401(f).

b. Trustee Type

- i. Corporate. Trustee name and address: _____
- ii. Individual. Trustee name(s): _____

c. Type of Trustee Indemnification:

- i. Standard according to Section 10.07(b)
- ii. None

d. The Trustees may designate one or more Trustees to act on behalf of all Trustees (Section 10.05(b)(2)).

NOTE: Section 10.09 of the Basic Plan Document shall apply to the extent assets are held in an outside trust agreement.

NOTE: If the Trust agreement contained in the Basic Plan Document applies, then Trustee signature(s) is/are not necessary on amendments if the amendment does not affect Trustee duties.

NOTE: If G.5a.iv is selected, G.5b - d shall not apply.

NOTE: If a separate trust agreement is to be used (G.5a.ii or G.5a.iii is selected), the items in G.1-5 shall apply only to the extent that they are not superseded by the terms of the separate trust agreement. Only the trust document(s) previously approved by the IRS may be utilized with this Plan and still rely on the Plan's advisory letter.

NOTE: If G.5a.i or G.5a.iii (use Trust Agreement in Basic Plan Document) is selected and G.5c.ii (no indemnification) is selected, indemnification for the Trustee may be pursuant to an agreement that is not a part of the Plan.

NOTE: If G.5c.ii (no indemnification) Section 10.07(b) shall not apply and indemnification for the Trustee may be pursuant to an agreement that is not a part of the Plan.

6. Trust Administrative Modifications

a. The following modifications are made to the permitted investments under the Trust Fund: _____

b. The following modifications are made to the duties of the Trustee, Investment Fiduciary or Investment Manager: _____

c. The following modifications are made to other administrative provisions of the Trust Fund: _____

NOTE: G.6 only applies if G.5a.i or G.5a.iii is selected (the Trust Agreement contained in the Basic Plan Document applies).

NOTE: The addition of language in G.6 cannot conflict with other provisions of the Plan and cannot cause the Plan to fail to qualify under Code section 401(a). Under no circumstances can a modification consist of: 1) removal or change to the prudent man rule, 2) addition of arbitration for Participant disputes, 3) addition of securities lending program, and 4) modification of the duties of the special trustee in Section 10.02(b) to determine and collect contributions under the Plan.

Qualified Domestic Relations Orders

7. Section 13.02 shall apply.

SECTION H. MISCELLANEOUS

Failure to properly fill out the Adoption Agreement may result in disqualification of the Plan.

The Plan shall consist of this Adoption Agreement #004, its related Basic Plan Document #P-03 and any related Appendix and Addendum to the Adoption Agreement.

The Plan is a volume submitter plan and is not a prototype plan.

The adopting employer may rely on an advisory letter issued by the Internal Revenue Service as evidence that the Plan is qualified under Code section 401 only to the extent provided in Revenue Procedure 2011-49 and any superseding guidance. The employer may not rely on the advisory letter in certain other circumstances or with respect to certain qualification requirements, which are specified in the advisory letter issued with respect to the Plan and in Revenue Procedure 2011-49 and any superseding guidance. In order to have reliance in such circumstances or with respect to such qualification requirements, application for a determination letter must be made to Employee Plans Determinations of the Internal Revenue Service. The practitioner will inform the adopting employer of any amendments made to the Plan or of the discontinuance or abandonment of the Plan. The practitioner, CCH INCORPORATED, DBA ftwilliam.com may be contacted at 700 W. Virginia St., Suite 305, Milwaukee, WI 53204; 414-226-2442.

SECTION I. EXECUTION PAGE


The undersigned agree to be bound by the terms of this Adoption Agreement and Basic Plan Document and acknowledge receipt of same. The parties have caused this Plan to be executed this _____ day of _____, 2015.

GARFIELD CHARTER TOWNSHIP:

Signature: _____

Print Name: _____

Title/Position: _____

 Charter Township of Garfield Planning Department Report No. 2016-08			
Prepared:	January 6, 2016	Pages:	Page 1 of 3
Meeting:	January 12, 2016 Township Board	Attachments:	<input checked="" type="checkbox"/>
Subject:	Application for public use deed - Grand Traverse Commons "State 40"		

STAFF COMMENT:

Mr. Matt McDonough, with the Grand Traverse Regional Land Conservancy, has brought to our attention a possible opportunity to acquire the State-owned property which is adjacent to the Grand Traverse Commons Natural Area. Known as the "State 40," it is already very popular among park users, who routinely cross the invisible property lines and enjoy all of the land as one park. The subject property measures 40-acres and abuts the west line of the Commons, to the north of the Copper Ridge development (see map, page 3). This land was originally part of the Traverse City State Hospital campus.

Formerly, a Michigan DNR communications tower was located on this property, which is why the land was retained when the hospital was closed and the other property was deeded to the Township to become the Commons Natural Area. However, the communication tower has now been removed and the land is no longer considered an essential parcel for the State to hold onto.

Though this land has been used by the public for years, its future became imperiled with the removal of the tower and when the Michigan DNR Real Estate Division, acting on its policy to consolidate its state forests, classified the property on its "dispose of" list, meaning at some point it could be auctioned to the highest bidder.

We have been working with the DNR for a number of years to express our desire to acquire the property, to keep it open to the public as one of the most unique and important portions of the Commons, and protect it from development. Unfortunately, those efforts have stalled, but as noted above, there may be another opportunity.

Knowing that we are actively planning for the future of this park, Mr. McDonough informed Staff that the Natural Resources and Environmental Protection Act of 1994 allows the State to convey tax-reverted property to a municipality for public use, for a nominal fee. This property was tax-reverted in 1939.

Therefore, attached to this report is a resolution to request the DNR to convey the State 40 to the Township so that it can be incorporated into the Commons Natural Area. As the Board is aware, we have undertaken a number of planning and management activities at this park, including hazardous tree management and multi-use trail planning. It would be a great time to acquire the property so that it can be officially integrated it into the planning and improvements which are ongoing at the Commons, while ensuring that it will always remain open to the public.

In closing, this appears to be a unique opportunity to acquire this key property without needing to compete in a potentially expensive bidding process. The application fee is only \$300.00.

ACTION REQUESTED:

(MOTION) THAT Resolution 2016-04-T, authorizing an application to the DNR for conveyance of the "State 40" to Garfield Township for public purposes, be approved, with the application fee of \$300.00 to be taken out of the park fund.

Attachments:

Resolution 2016-04-T

Application for Public Use Deed

Application narrative



Parcel Map

Legend

- Bike Path
- Singletrack
- Parkland
- Parcel 2015

This map is based on digital databases prepared by Garfield Township. The Township does not warrant, expressly or impliedly, that the information on this map is current or positionally accurate. Always contact a surveyor to be sure of where your property lines are located.

Garfield Charter Township
 3848 Veterans Drive
 Traverse City, MI 49684
 Phone: 231.941.1620
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www.garfield-twp.com



NOT A LEGAL SURVEY

Garfield Township Planning Dept: 1/7/2016

CHARTER TOWNSHIP OF GARFIELD
GRAND TRAVERSE COUNTY, MICHIGAN

RESOLUTION #2016-04-T

RESOLVED BY: The Township Board of the Charter Township of Garfield, Grand Traverse County, Michigan:

WHEREAS, Act 451, P.A. 1994, as amended, provides for the conveyance of State-owned tax-reverted lands to municipal units for public purposes, and

WHEREAS, such lands are under the jurisdiction of the State of Michigan, Department of Natural Resources and are available for acquisition under the provisions of the above mentioned act, legally described as follows:

THE NORTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 8, TOWN 27 N, RANGE 11 W;
and

WHEREAS, the Charter Township of Garfield desires to acquire such lands for the purposes of maintaining a park and natural area with multi-use trails for hiking, biking, skiing, snowshoeing, nature watching, and other similar active and passive outdoor recreation activities:

NOW THEREFORE BE IT RESOLVED that the Charter Township of Garfield is authorized to make application to the State of Michigan, Department of Natural Resources, Real Estate Services conveyance of said land to the Charter Township of Garfield for a nominal fee as set by the Department of Natural Resources, and

FURTHER BE IT RESOLVED that Charter Township of Garfield shall set up necessary procedures and controls to provide for the proper distribution for funds arising from the subsequent sale of the acquired property in conformity with the above mentioned acts.

Moved:

Supported:

Ayes:

Nays:

Absent and Excused:

RESOLUTION 2016-04-T DECLARED ADOPTED.

By:

Chuck Korn, Supervisor
Charter Township of Garfield



Michigan Department of Natural Resources
Finance and Operations Division

APPLICATION FOR CONVEYANCE OF STATE LAND FOR PUBLIC PURPOSES

This information is required to obtain a deed
by Authority of Part 21, Subpart 1, Act 451, P.A. 1994, as amended

-FOR DNR USE ONLY-		
Approval Date	Application Fee	Approved By
OPTION: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3		
PUBLIC USE NUMBER		

ISSUE DEED TO:			MAIL DEED TO:		
NAME CHARTER TOWNSHIP OF GARFIELD			NAME BRIAN VAN DEN BRAND		
ADDRESS 3898 VETERANS DRIVE			NAME		
CITY TRAVERSE CITY	STATE MI	ZIP CODE 49685	MAILING ADDRESS 3898 VETERANS DRIVE		
COUNTY GRAND TRAVERSE			CITY TRAVERSE CITY	STATE MI	ZIP CODE 49685

LEGAL DESCRIPTION

SEE ATTACHED SHEET

NE 1/4 OF THE SE 1/4, SECTION 8,
T27N, R11W

PARCEL # 05-008-049-00

-FOR DNR USE ONLY-	
DEED NUMBER	
L	
P	
ABSTRACT	
CHECKED	

It is expressly understood that:

- The land herein described shall be used solely for the following purposes:
PUBLIC PARKLAND; PLEASE SEE ATTACHED
- If lands are conveyed or transferred for a nominal fee and are subsequently sold by the government unit for a valuable consideration, the proceeds from any such sale after deducting said fee and any amount paid by the local government units for maintaining said lands in condition to protect the public health and safety shall be accounted for to the state, county, township and school district in which the lands are situated pro rated according to their several interests therein arising from the nonpayment of taxes and special assessments thereon as such interest shall appear in the offices of the state treasurer, county, city or village treasurers.
- The deed issued by the State of Michigan may reserve to the State of Michigan all mineral rights including coal, oil and gas, etc., rights of ingress and egress over and across lands lying along any watercourse or stream, pursuant to the provisions of Act 451, P.A. 1994, as amended and all aboriginal antiquities, mounds, earthworks, etc., pursuant to the provisions of Act 451 P.A. 1994.

Applicant Name CHARLES S. KORN Title SUPERVISOR Date _____

Applicant Signature _____ Phone Number 29 231-991-1620

Mail completed application and check or money order for \$300 made payable to the "State of Michigan" to:

CASHIER'S OFFICE
MICHIGAN DEPARTMENT OF NATURAL RESOURCES
PO BOX 30451
LANSING MI 48909-7951

For DNR Cashier's Use Only - Do Not Write Below

APPLICATION FOR CONVEYANCE OF STATE LAND FOR PUBLIC PURPOSES:

APPLICATION NARRATIVE:

The Charter Township of Garfield, Grand Traverse County is requesting that the State of Michigan convey parcel #05-008-049-00 to the Township for use as public parkland.

Known in Traverse City as the "State 40," this property is already very popular among park users, who routinely cross the invisible property lines and enjoy all of the land as one park. The subject property measures 40-acres and abuts the west line of the Township's 140-acre Grand Traverse Commons Natural Area and is proximate to the City of Traverse City & Garfield Township Joint Recreational Authority's 56-acre Historic Barns Park (see map, last page).

History

This land was tax-reverted to the State of Michigan in 1939, and became a part of the Traverse City State Hospital campus. Founded in 1885, the philosophy of the institution was to surround mentally ill patients with beauty in order to help cure ailments. In addition to the beautiful Kirkbride main buildings (which became the Village at Grand Traverse Commons), the campus was surrounded by arboretums, a working farm (which became the Historic Barns Park), and woodlands, hills, and streams (which became the Grand Traverse Commons Natural Area).

After the State Hospital was shuttered in 1989, the State deeded the majority of the land to the Grand Traverse Redevelopment Corporation. Ultimately, this land was then subdivided between Garfield Township, the City of Traverse City (each for parkland), and The Minervini Group (developer for the historic redevelopment project).

The State 40, however, was retained because it was the site of a State of Michigan communications tower. At or around the time that the communication tower was removed, the property was listed on the Real Estate Division's "dispose of" list.

Though this land has been used and enjoyed by the public for years, its future became imperiled. The Township has been working with the DNR for a number of years to express our desire to acquire the property, to keep it open to the public as a unique and important portion of the Commons, and protect it from development.

Current status of Grand Traverse Commons Campus

There are a lot of exciting things happening at the Commons. The Minervini Group continues to redevelop The Village at Grand Traverse Commons, which is one of the largest historic preservation and adaptive reuse projects in the country. Having recently completed Building "50," the original massive Kirkbride structure, the project is moving on to the number of outbuildings to create a unique and thriving mixed-use community, including restaurants, retail shops, professional offices, bakeries, schools, market-rate and subsidized housing for all age groups, and more. The surrounding parkland, hiking and biking trails are heavily used by Village TC residents and visitors.

Just to the south of the Village and southeast of the State 40, the Historic Barns Park is also under active development. As noted above, this area once served as a functioning farm that kept the hospital fully self-sufficient. Anchored by two massive barns, one of which was recently renovated as an event venue, the site is also home to Traverse City's Botanic Garden. Two regional TART Trails, the Buffalo Ridge Trail and the Historic Barns Trail, converge in this park.

Garfield Township is actively working to improve the Grand Traverse Commons Natural Area. In the winter of 2016, a hazardous tree removal plan will be implemented to remove nearly 500 trees identified by a forester as a hazard to trail users. Concurrently, we are working with a local stakeholder group to inventory all trails in the park, both marked and unmarked, to revise and improve the system. Our end goal is to design a high quality trail system to accommodate hikers, mountain biking of various disciplines, skiing, snowshoeing, and snow biking.

Stakeholder groups are at work to establish a snow biking trail at the Commons, over the shared property of the Township, City, and The Minervini Group. Regionally, capable individuals are also pursuing a single-track connection to Hickory Hills and Hickory Meadows, less than a mile to the north and where active park planning and investment is also underway. This connection between the Commons, Hickory, and TART's Leelanau trail will establish a premier single-track opportunity in the heart of Traverse City.

Lastly, the Garfield Township Park Plan (approved by and on file with DNR Grants Management) recognizes and supports acquisition of the State 40 as an important goal.

Working relationship with DNR

The Township has worked closely with the DNR, in particular the Natural Resources Trust Fund, in order to generate the park momentum described above. The Trust Fund has project agreements with Garfield Township for both the Historic Barns Park and Gardens development project, which helped to fund both the Historic Barns Trail as well as renovation of the visitor center, and also an agreement for Phase II of the Buffalo Ridge Trail, which connects the residential areas of Garfield Township to the Grand Traverse Commons.

In seeking this conveyance we hope to continue our great working relationship with the DNR to provide outdoor recreation opportunities in Grand Traverse County.

Importance of State 40 to Recreation

This property already functions as part of the Grand Traverse Commons Natural Area. It helps provides access to the overall parkland from adjacent development areas (Copper Ridge). Due to the elevation change on the property, it is critical to the development of a multi-use trail system within the overall park. Starting with lower elevation to the south, it gradually rises to the north, providing a challenging but doable climb to the highest elevations on the property (a lot of the other elevation change within the overall park is simply too steep for sustainable trails). The Conquer the Village Mountain Bike Race, growing in popularity every year, depends on the State 40 for its route.



Parcel Map

Legend

- Bike Path
- Singletrack
- Parkland
- Parcel 2015

This map is derived from geographic databases prepared by Garfield Township. The Township does not warrant, expressly or impliedly, that the information on this map is current or positionally accurate. Always contact a surveyor for the sake of your property. Lines are located.

Garfield Charter Township
 3848 Veterans Drive
 Traverse City, MI 49684
 Phone: 231.941.1620
 Fax: 231.941.1688
www.garfield-twp.com



NOT A LEGAL SURVEY

Garfield Township Planning Dept: 1/7/2016

The property is also already home to, and the best location for, a number of freeride mountain biking trails. Riders from all over the state come to this property to enjoy these trails. Garfield Township's intention is to continue to encourage the development of safe, sustainable freeride trails as part of a multi-discipline mountain biking draw, including the IMBA-quality singletrack, the freeride zone, and a to-be-built skills park, pump track, and dirt jump area located off of North Long Lake Road.

In closing, the conveyance of this property will allow the Township to formally fold it into the planning and management activities which are underway at the overall park, and secure it for the enjoyment of future generations of Traverse City residents and visitors.

Thank you for your consideration of our application for conveyance of this land.

From: ! [<mailto:tmhtcmi07@aol.com>]
Sent: Thursday, January 07, 2016 9:32 AM
To: Chuck Korn
Subject: 2016 fireworks request

Hello Chuck!

Happy New Year!!

Although it's only January, the TC Boom Boom Club is already gearing up for another great Fourth of July fireworks production. Garfield Township has continually been a big contributor towards sustaining this quality event, and TCBBC expresses its extreme gratitude for all the Township has done for this great patriotic tradition. With this in mind, we respectfully request that Garfield Township maintain its \$3,500 donation level for the 2016 fireworks. We appreciate your consideration for this request and look forward to hearing from you. Should you have any questions or comments, please feel free contacting me at tmhtcmi07@aol.com, or 231-590-4503. Our sincere thanks!

Kind regards,

Tim Hinkley
President
TC Boom Boom Club

SEWER BENEFITS DEFERRAL AGREEMENT

This Sewer Benefits Deferral Agreement ("Agreement") is entered into by Kenneth T. Hennrick (Owner) and Garfield Township, 3848 Veterans Drive, Traverse City, MI 49684.

Recitals

- A. Mr. Kenneth T. Hennrick is the owner of property in Garfield Township, address: 1633 Linden Ave, Tax ID Parcel #28-05-340--022-00, and has requested a deferral of benefit fees from the Township;
- B. The requested deferral is the total cost of Lateral Charges, Riser and Benefit Fees, as calculated by the Grand Traverse County Department of Public Works, is \$6,736.50;
- C. Garfield Township's Sewer Ordinance, providing for the operation and maintenance of the Township's sewer system, authorizes the Township Board to approve a deferral of payment for sewer charges under certain conditions; and
- D. The Township has agreed to the requested deferral upon the conditions contained in this Agreement.

Agreement

Therefore, the Parties agree to the following:

- 1. **Benefit Fees and Deferral Amount.** Owner shall pay a total of \$6,736.50 plus interest, as follows:

20% due on permit issuance:	\$1,347.30
80% to be deferred:	\$5,389.20

- 2. **Interest.** For all amounts deferred, owner shall pay interest, compounded annually, at the current 10 year Treasury bill rate (2.2428%) plus .45% for an effective rate of 2.6928%.
- 3. **Payment.** Owner shall pay the deferral amount in monthly installments as billed by the Department of Public Works on behalf of Garfield Township. Monthly installments shall start on the first monthly bill after the Effective Date of this Agreement. The deferral shall be paid in full, with interest, in no more than five years from the date of this Agreement. The monthly installments shall be calculated equally based on a five year term (including interest), but nothing in this Agreement shall prevent Owner from paying part or all of the deferral amount prior to when it is due.
- 4. **Default and Acceleration of Balance Due.** If Owner fails to make any payment due within fourteen (14) days of the due date, then it shall be in breach of this Agreement without any further notice or action by Garfield Township. In the event of a breach, the entire balance due on the deferral amount shall accelerate and be due and payable in full immediately. The entire amount due also shall be placed as a lien on the tax roll for the real property in any manner and to the fullest extent authorized by law. Nothing in this paragraph shall prevent Garfield Township, in its sole discretion, from agreeing to a modification of the time for payment in writing in order to avoid a default.
- 5. **Other Fees and Charges.** All other fees, including filing fees, administrative fees, meter fees and the like are not deferred by this Agreement and shall be due in full at the time the permit is issued.

9. **Authority to Sign.** The Parties represent that the individuals signing this Agreement on their behalf have the full authority to enter into this Agreement and bind the respective parties to the terms of the Agreement.

By: _____
Kenneth T Hennrick, Owner
Date: January ____, 2016

STATE OF MICHIGAN)
) ss
COUNTY OF GRAND TRAVERSE)

On this ____ day of January, 2016, before me, a Notary Public in and for said county and state, personally appeared Donald Pishney, Owner of Classic Motorsports, to me known to be the same person described in and who executed the within instrument, and who acknowledged the same to be their free act and deed.

Notary Public
Grand Traverse County, Michigan
My commission expires:
Acting in Grand Traverse County, Michigan

GARFIELD TOWNSHIP

By: _____
Chuck Korn, Supervisor
Date: November ____, 2013

STATE OF MICHIGAN)
) ss
COUNTY OF GRAND TRAVERSE)