

# HAZARD MITIGATION PLAN for Ann Arbor Township

October 2004



As adopted 10-18-04

**ANN ARBOR CHARTER TOWNSHIP BOARD OF TRUSTEES  
RESOLUTION APPROVING HAZARD MITIGATION PLAN  
OCTOBER 18, 2004**

Resolution adopted at a regular meeting of the Township Board of the Charter Township of Ann Arbor, Washtenaw County, Michigan, held at the Township Hall, 3792 Pontiac Trail, Ann Arbor, Michigan, on October 18, 2004.

PRESENT: Della DiPietro, Virginia Forshee, John Allison, Michael Moran, Gene Ragland, Richard Dieterle

ABSENT: Catherine Braun

Motion by Trustee Della DiPietro; supported by Trustee Gene Ragland.

**RECITALS**

A. The Federal Emergency Management Agency ("FEMA") provides assistance to local units of government when faced with disasters through the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the "Stafford Act").

B. Recognizing that planning for hazards is an important component of hazard preparedness, response and recovery programs, the Stafford Act was amended in 2000 to require governments to have an adopted Hazard Mitigation Plan by November of 2004, as a condition of receiving financial assistance through the FEMA Hazard Mitigation Grant Program.

C. Representatives from Ann Arbor Township worked with the Washtenaw County Emergency Management Division and Department of Planning and Environment to draft the Ann Arbor Township Hazard Mitigation Plan ("Plan").

D. There are three purposes of the Plan: 1) to identify and rank hazards in Ann Arbor Township; 2) to analyze areas particularly vulnerable to hazards; and 3) to identify feasible mitigation strategies that can be acted upon after adoption of the Plan.

E. An opportunity for the citizens of the Township to comment on the draft plan was provided in June of 2004 at five regional planning workshops held at various locations around the county in conjunction with the Comprehensive Plan for Washtenaw County, and a workshop was held on June 9, 2004.

F. The Township Board of Trustees also provided an opportunity for public comment prior to adopting the Plan at its meeting on October 18, 2004.

**RESOLUTION:**

After review of the Plan and based on the foregoing recitals, the Board adopted the following resolution:

AnnArbor\_84353\_1


RESOLVED, the Board finds that it is in the Township's interest to establish a plan for identification, ranking and mitigation of hazards in Ann Arbor Township in the manner set forth in the August 2004 draft Hazard Mitigation Plan ("Plan") and the Board approves and adopts the Plan as amended by the Township Supervisor, Fire Chief, and Board.

AYES: Della DiPietro, Virginia Forshee, John Allison, Michael Moran, Gene Ragland, Richard Dieterle

NAYS: None

ABSTAIN: None

**RESOLUTION DECLARED ADOPTED.**

  
\_\_\_\_\_  
Michael C. Moran, Supervisor  
Ann Arbor Township Board

I certify that the foregoing is a true and complete copy of a resolution adopted by the Ann Arbor Charter Township Board, County of Washtenaw, State of Michigan, at a regular meeting held on October 18, 2004, that said meeting was conducted and public notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act, being Act 267, Public Acts of Michigan, 1976, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.

Dated: 10/21, 2004

  
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# Ann Arbor Township

## Table of Contents

	Page
1.0 INTRODUCTION_____	1
1.1 Purpose_____	1
1.2 Plan Organization_____	1
1.3 Public Participation_____	1
2.0 COMMUNITY PROFILE_____	3
2.1 Historic Overview_____	3
2.2 Natural Features_____	3
2.3 Land Use Patterns_____	3
2.4 Transportation_____	3
3.0 HAZARDS_____	4
3.1 Hazard Ranking_____	4
3.2 Hazard Assessment_____	4
4.0 HAZARD GOALS, OBJECTIVES AND STRATEGIES_____	7
4.1 Non-Hazard Specific Goals, Objectives and Strategies_____	7
4.2 Hazard Specific Goals, Objectives and Strategies_____	7
5.0 IMPLEMENTATION, AND MONITORING_____	12
5.1 Implementation_____	12
5.2 Sources of Financial Assistance_____	13
5.3 Monitoring_____	13

### Tables

Table 1: Hazard Ranking Table_____	4
Table 2: Vulnerability Assessment Summary_____	5

### Figures

Figure 1: Natural Features_____	2
Figure 2: Assets_____	6
Figure 3: Tornado Warning Siren Coverage and Past Events_____	8

### Attachments

- Attachment 1: County Hazard Plan
- Attachment 2: Federal and State Funding Sources



# Ann Arbor Township

## 1.0 INTRODUCTION

Hazard Mitigation is defined as any action taken before, during or after a disaster to permanently eliminate or reduce risks to human life and property from natural, technical or societal hazards. Ann Arbor Township has experienced hazards at varying degrees, and can expect to encounter hazards in the future. The value of a Multi-Hazard Mitigation Plan (Plan) lies in reducing future emergencies to events; by implementing mitigation strategies set forth in this Plan, the expectation is for hazard occurrences to result in fewer deaths and injuries to people, and lessened damage or destruction to structures and the environment. Response and recovery costs should also be reduced.

The Federal Emergency Management Agency (FEMA) provides assistance to local units of government when faced with disasters through the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the Stafford Act). Recognizing that planning for hazards is an important component of hazard preparedness, response and recovery programs, the Stafford Act was amended in 2000 to require governments to have an adopted Hazard Mitigation Plan as condition of receiving financial assistance through the FEMA Hazard Mitigation Grant Program by November of 2004.

### 1.1 Purpose

There are three purposes of this Plan: 1) to identify and rank hazards in Ann Arbor Township; 2) to analyze areas particularly vulnerable to hazards; and 3) to identify feasible mitigation strategies that can be acted upon after adoption of the Plan. The mitigation goals and strategies should also be incorporated into the Ann Arbor Township General Development Plan, and other plans, as applicable.

## 1.2 Plan Organization

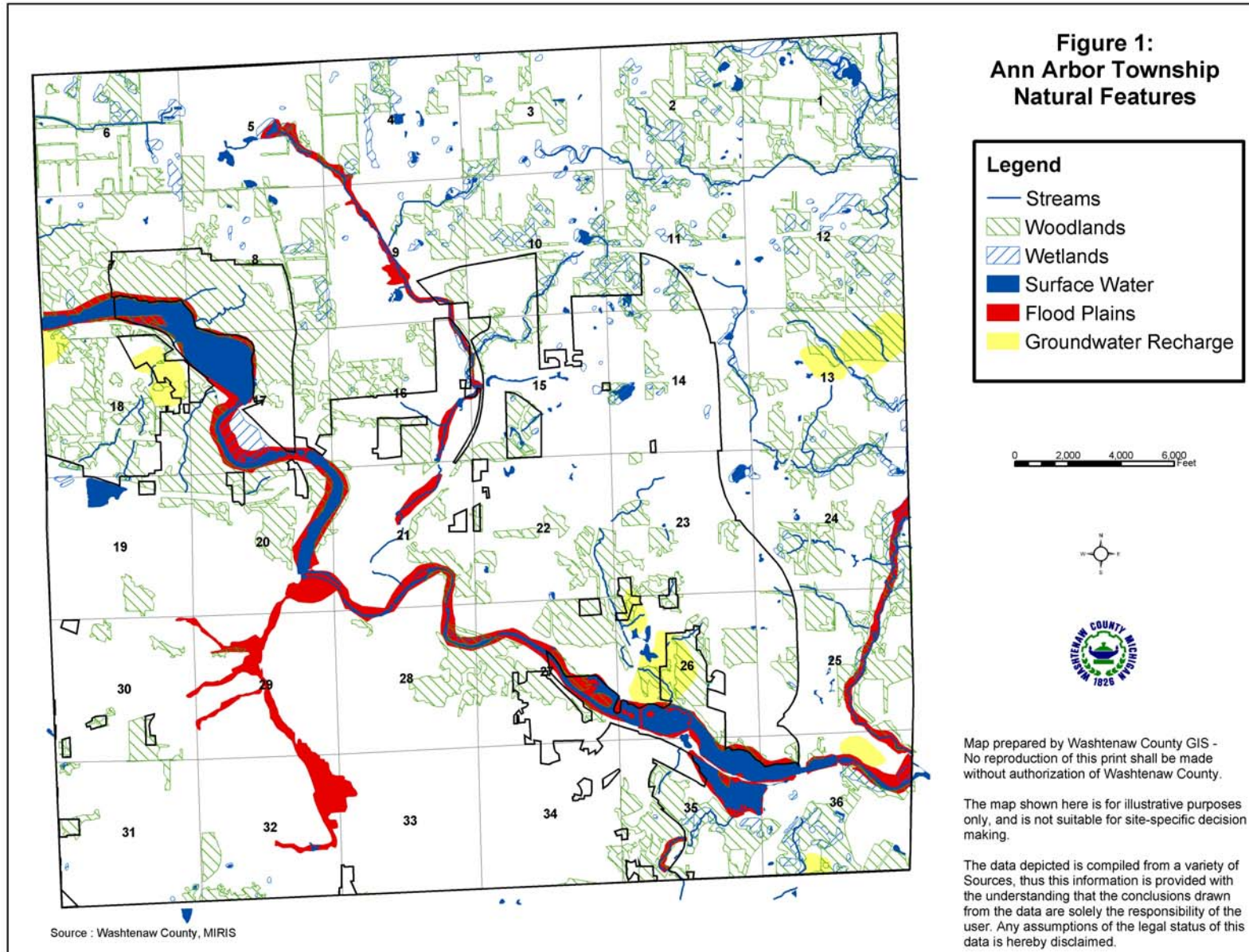
This Plan was prepared by Washtenaw County on behalf of Ann Arbor Township. Individual plans were prepared for each local unit of government in recognition of their unique circumstances and potential differences in priorities, goals and mitigation strategies. General information, such as community profile data and hazard descriptions, is contained in the County plan (Attachment 1).

## 1.3 Public Participation

Representatives from Ann Arbor Township worked with the Washtenaw County Emergency Management Division and Department of Planning and Environment to draft the hazard mitigation plan. An opportunity for the citizens of Township to comment on the draft plan was provided in June of 2004, when five regional planning workshops were held at various locations around the county in conjunction with the Comprehensive Plan for Washtenaw County. Another workshop was held on June 9, 2004 for commission, board and council members from every community. The draft plan was introduced and copies were available for review at every workshop. Regional workshops were advertised in the local newspapers.

The Township Board of Trustees also provided an opportunity for public comment prior to adopting the plan on October 18, 2004.

Continued public participation is encouraged through Washtenaw County through website postings, emails, and general contact with local governments. Any comments received by the County on the plan concerning Ann Arbor Township will be shared with the Township.



# Ann Arbor Township

## 2.0 Community Profile

### 2.1 Historic Overview

Ann Arbor Township was established in 1827. It comprised the land surrounding the Village of Ann Arbor (later the City of Ann Arbor), which was named after the founders' wives (Ann), and the grove-like appearance (Arbor). Natural features, like the Huron River, were the main attraction to the area. The land was suitable for agriculture, ideal because the Huron River transportation route from Detroit (Lake Erie) stopped at Rawsonville, making those west of the area fairly self-sufficient.

### 2.2 Natural Features

Ann Arbor Township is situated entirely within the Huron River Watershed. The three most important watercourses in the Township are Fleming Creek and its tributaries, Swift Run Creek, and Traver Creek. These waterways discharge in the Huron River. Floodplains are located along both Fleming and Traver Creek have floodplains.

Ann Arbor Township has two groundwater recharge areas: one is located on the eastern edge of the Township, the other in the southern portion of the Township, where Fleming Creek creates a bend. There are also wetlands throughout the Township, in addition to bogs, fens and swamp. Woodlands are fragmented between developments, and included a mix of hardwoods and cultivated pine plantations. Ann Arbor Township natural features are presented on Figure 1.

The topography of the area can be described as gently rolling. Much of Ann Arbor Township is composed of glacially deposited sandy and loamy soils and gravel. These soils drain well. The remainder of the Township contains hydric soils, which are drain poorly. These soils are an impediment to development and limit septic tank capacities. Erodible and steep slopes are scattered throughout the Township.



*First Responders for Ann Arbor Township*

### 2.3 Land Use Patterns

Ann Arbor Township land totals 11,245 acres. The Township land consists of a mix of land uses, including institutional, multiple family residential, and industrial. Much of the Township's land is open space, or undeveloped wetlands or woodlands (36%). Other major land uses are either single family residential (16%), or active agriculture uses (26%). Interestingly, while only 4% (465 acres) of Township lands are commercial/office use, these lands account for 10% of all commercial/office lands in the County.

### 2.4 Transportation Network

The transportation network consists of highways, major arterials, minor arterials, and major collectors. State Highway M-14 runs east-west through northern portions of the Township and US-23 runs north-south through the community. The Conrail Railroad enters Township lands from the northwest to the southeast, into the City of Ann Arbor. There are no airports located in the Township.

# Ann Arbor Township

## 3.0 HAZARDS

Ann Arbor Township is susceptible to a variety of natural, technological, and societal hazards. The purpose of this section is to rank the hazards for Ann Arbor Township, analyze the risks for each hazard, and identify vulnerable areas for the Township, and appropriate goals and mitigation strategies for certain hazards.

### 3.1 Hazard Ranking

The ranking of hazards for Ann Arbor Township is presented as Table 1. The ranking of hazards was determined on a county-wide basis, and adjusted based on input from Local Units of Government. The ranking order was developed by the Washtenaw County Emergency Management Division using a program provided by the Michigan State Police Emergency Management Division. The model takes into account worst-case scenario data for frequency of occurrence, likelihood of occurrence, significance of impact/threat, potential size of geographic area impacted and total population impacted.

### 3.2 Hazard Assessment

The purpose of the hazard assessment is to map out where hazards exist and gain information about their frequency of occurrence, and potential for harm using worst-case scenario estimates. Different levels of risk analysis are performed, depending on the significance of the hazard for the community:

- **Cursory:** A short statement explaining why the hazard is not a threat, prepared for hazards that have little impact or are unlikely to occur.
- **Standard:** An explanation of concerns with limited quantitative research, prepared for hazards likely to occur and impact our communities.
- **Advanced (Vulnerability):** A vulnerability determination using probabilities, prepared for hazards that have the

**Table 1: Hazard Ranking**

Hazard	Rank
Convective Weather (Severe Winds, Tornadoes, Lightning, Hail)	1
Hazardous Materials Incidents: Transportation	2
Infrastructure Failures	3
Severe Winter Weather Hazards (Snow Storms and Ice/Sleet Storms)	4
Hazardous Materials Incidents: Fixed Site	5
Transportation Accidents: Air and Land	6
Extreme Temperatures	7
Flood Hazards: Riverine/Urban Flooding	8
Public Health Emergencies	9
Petroleum and Natural Gas Pipeline Accidents	10
Fire Hazards: Wildfires	11
Fire Hazards: Structural Fires	12
Flood Hazards: Dam Failures	13
Sabotage & Terrorism	14
Drought	15
Earthquakes	16
Nuclear Attack	17
Nuclear Power Plant Accidents	18
Civil Disturbances	19
Oil and Gas Well Accidents	20
Fire Hazards: Scrap Tire Fires	21

# Ann Arbor Township

highest frequency of occurrence and/or the most potential to cause death, injury or damage to personal property.

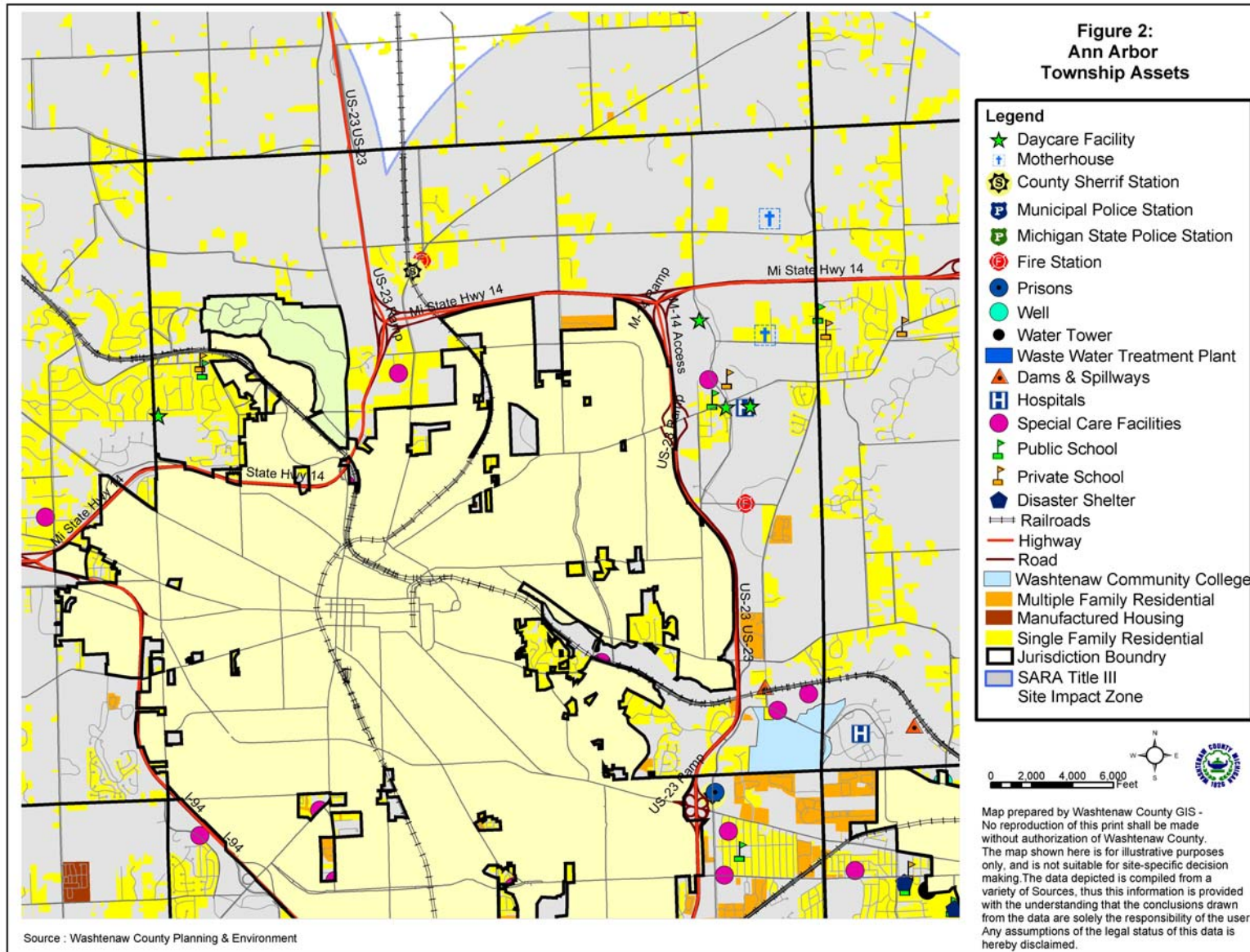
Vulnerability assessments were prepared for convective weather, hazardous materials transportation incidents, hazardous materials fixed site incidents, infrastructure failures and severe winter weather hazards. The goal is to quantitatively measure the threat experienced by Washtenaw County communities. By placing a monetary value on a hazard, a cost-benefit comparison can be made: the benefit of implementing a mitigation strategy compared to the cost of the hazard event.

Table 2 presents the results of the vulnerability assessment. The value of the vulnerability assessment is to provide a cost by which the mitigation strategies may be compared. A discussion of the determination is provided in the hazard section of the County Plan (Section 3.2). The methodology for each is presented in Appendix A of the County Plan.

**Table 2. Vulnerability Assessment Summary**

Rank	Hazard	Estimated Annual Cost
<b>#1</b>	<b>Convective Weather</b>	
	Tornado	\$5,078,755
	Severe Winds and Lightning	\$90,242,418
	Hail Storm	\$3,738,153
<b>#2</b>	<b>Hazardous Material Transportation Incidents</b>	\$6,838,963
<b>#3</b>	<b>Hazardous Material Fixed Site Incidents</b>	\$2,913,038
<b>#4</b>	<b>Severe Winter Weather</b>	\$36,191,763
<b>#5</b>	<b>Infrastructure Failure</b>	\$6,139,214

# Ann Arbor Township



# Ann Arbor Township

## 4.0 Hazard Goals, Objectives and Strategies

The following sections present goals and strategies by hazard. Figure 2 presents the assets and hazards identified for Ann Arbor Township, and may be referred to in the following sections. The goals, objectives and strategies are not an inclusive list; rather the goals, objectives and strategies are those that the Township is focusing on at this time.

The repetition of strategies reflects the need for their implementation, not the duplication of services. For example, distribution of educational materials should not be performed several times, throughout the year per hazard, rather one mailing regarding family preparedness kits would address all hazards for which this strategy is listed.

There are many assets in the Township that considered vulnerable areas for more than one hazard: convective weather, infrastructure failures, hazardous materials transportation accidents, severe winter weather hazards, public health emergencies, to name a few. These areas are shown on Figure 2, but given their function as buildings that contain large groups or special populations, specific mention is warranted:

- Batson Court Adult Care Center, 4832 Batson Court
- Gabriel Richard High School, 4333 Whitehall Drive
- Hartland Healthcare, 4701 E. Huron Drive
- Maple/Blueberry Daycare, 2558 N. Maple Road
- Rainbow Rascals Daycare, 4220 Plymouth Road
- Servants of God's Love, 4399 Ford Road
- Shepard Montessori (Domino's Farms Daycare), 24 Frank Lloyd Wright Drive
- Sister of Mary Motherhouse, 4597 Warren Road
- Spiritus Sanctus Academy, 2600 Via Sacra Drive
- University of Michigan East Primary Care Complex, 4260 Plymouth Road, and

- Washtenaw Community College and Daycare, 4800 E. Huron River Drive.

## 4.1 Non-Hazard Specific Goals, Objectives and Strategies

Goal: Integrate mitigation strategies into the Township General Development Plan

Objective: Amend plan goals, objectives and policies to include mitigation strategies.

### Mitigation Strategy: Plans

- Establish a committee charged with amending the General Development Plan to include hazard mitigation goals and strategies, as applicable.

Goal: Promote hazard mitigation and enhance Township response capabilities

### Mitigation Strategy: Plans

- Implement the Washtenaw County Emergency Action Guidelines.
- Work with vulnerable facilities that do not have emergency plans on developing On-Site Emergency Plans with evacuations or in-house sheltering.

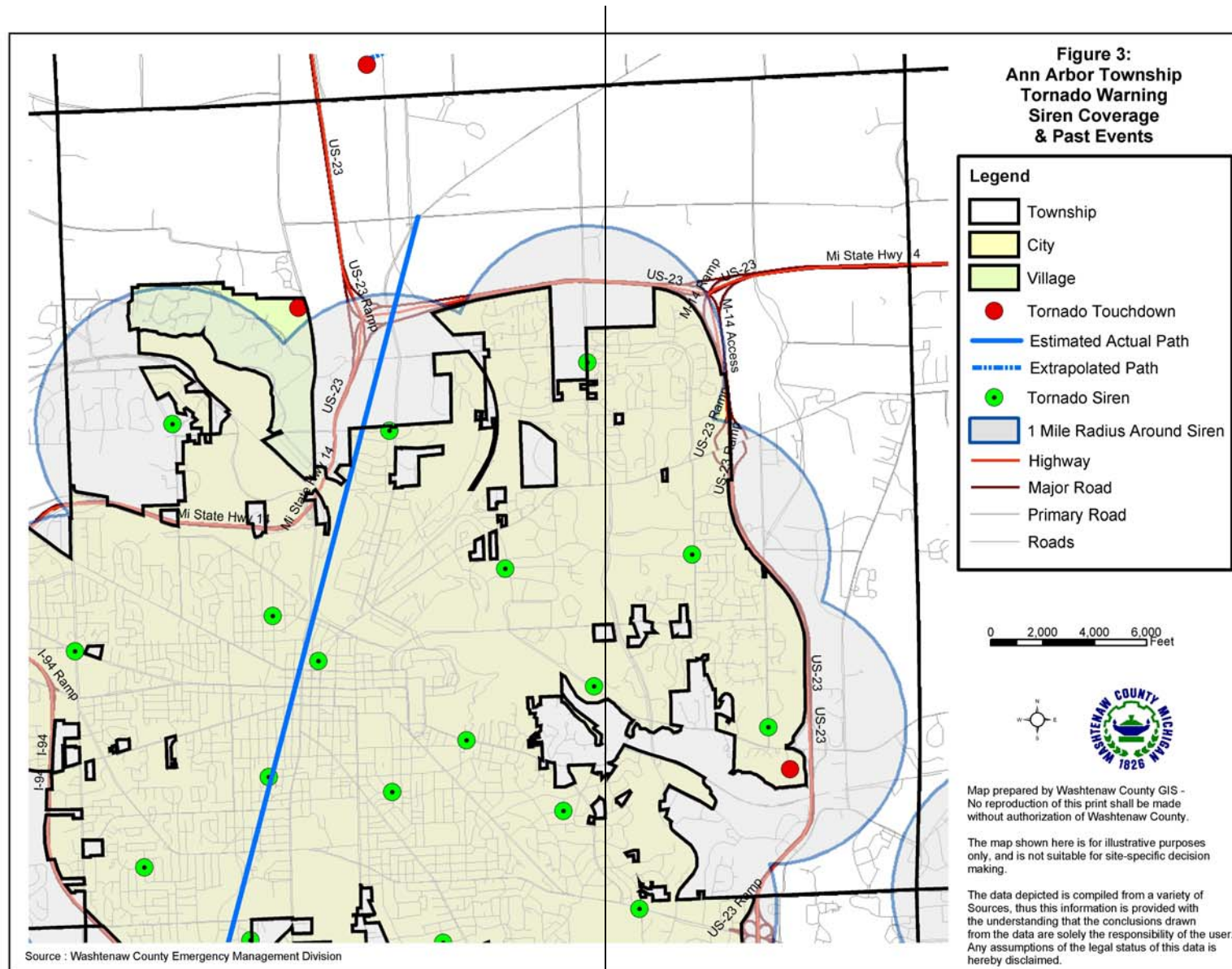
### Mitigation Strategy: Plan Implementation

- Secure grant funds to implement the strategies provided herein so that the Township is able to reduce the impact of hazardous events.

### Mitigation Strategy: Training

Continue to train, equip and maintain a Hazardous Material Response Team, Fire Officials and Police Officers to maintain a proactive position toward sabotage and terrorism. Also expand emergency response plans to Hazardous Materials Accidents along roadways, railways and at the airport would ensure a quality response in case of an emergency.

# Ann Arbor Township



# Ann Arbor Township

- (continued) Allow first responders to continue to participate in Homeland Security Programs.

## **4.2 Hazard-Specific Goals, Objectives and Strategies**

### **Convective Weather**

Major areas of concern with regard to convective weather are the Township's assets, which include health care centers, schools and special care facilities which are located throughout the community.

The Township has an emergency back-up generator at Fire Station No. 2, however, there are no designated disaster shelters.

Goal: Reduce losses due to convective weather

Objective: Increase safety for Township residents

### **Mitigation Strategy: Warning Sirens**

- Currently a portion of the Township is covered by a warning siren (Figure 3). All the sirens are located in the City of Ann Arbor and would reach approximately 91% of the Townships population (4006 persons). Although the siren coverage is really good there is a highly populated area located in the north east part of the Township which is not covered.

A warning siren should be added to the northeast section of the Township. Within this are many of the Township's major population centers: Gabriel Richard School, Spiritus Sanctus Academy, Rainbow Rascal Daycare, Domino's Farms Montessori Daycare, University of Michigan Daycare, as well as a research and technology park. A warning siren would allow the facilities that host our children to respond appropriately in the event of a convective weather storm.

### **Family Preparedness Kits**

1. Have Emergency Supplies at the ready:
  - A three-day supply of water one gallon/person/day and food that won't spoil
  - One change of clothing, footwear, and blanket/sleeping bag per person
  - First aid kit including family prescription medications
  - Tools: flashlight, battery-powered radio and extra batteries
  - Extra car keys, credit cards, cash or travelers checks
  - Sanitation supplies
  - Special items for infant, elderly or disabled family members
  - Extra pair of glasses
  - Locate the fuse box water service main and natural gas main and learn how to turn on and off.
2. Create a disaster plan where to meet, contact numbers, who will take care of the family pet, take first aid, learn how to use a fire extinguisher, etc.
3. Practice the Plan and maintain supplies!

If having electric power is extremely important to you, consider having a qualified electrician install an emergency generator before a disaster strikes!

For more information, see FEMA website at <http://www.fema.gov/pdf/library/yfdp.pdf>

# Ann Arbor Township

## Mitigation Strategy: Public Education

- Distribute an Emergency Preparedness booklet informing residents about actions to take during an event, or actions to minimize damage caused by an event (see Family Preparedness Kit, right). The information could be a separate mailing, or included with Township newsletters or annual tax bills.

## Mitigation Strategy: Plans

- Work with Washtenaw County to implement the County Emergency Action Guidelines. Work with vulnerable facilities that do not have emergency plans on developing On-Site Emergency Plans with evacuations or in-house sheltering.

## **Hazardous Materials Incidents: Transportation**

The Township's most vulnerable areas are the major highways and interchanges, US-23 and M-14. These are major travel corridors for the County as well as the region, and untold amounts of hazardous material travel this road daily.

The Township has adopted a Hazardous Spills Recovery Ordinance.

Goal: Reduce the risk of damage, loss of life, and other costs of a damage of a hazardous material transportation accident

Objective: Increase safety for Township residents

## Mitigation Strategy: Warning Sirens

- Secure funding for warning siren See strategy under Convective Weather for further discussion.

## Mitigation Strategy: Enforcement

- Work with Washtenaw County and the State of Michigan Department of Transportation (MDOT) to provide safer roadways.
- Ensure that enforcement officers are following and enforcing MDOT regulations for hazardous material transporters as well as being diligent in enforcing weight and travel restrictions. Consider partnerships with surrounding communities to share weigh-master facility and patrol.

## Mitigation Strategy: Public Education

- Distribute an Emergency Preparedness booklet. See strategy under Convective Weather for further discussion.

## **Infrastructure Failures**

Goal: Decrease the Township's vulnerability to infrastructure failures and continue to strengthen the Township's ability to assist its citizens during an event.

Objective: Identify protection measures to minimize the impact of infrastructure failures.

## Mitigation Strategy: Emergency Generators

- Purchase generators and back-up water supplies for both government and commercial properties. There are no disaster shelters in Ann Arbor Township. Although the community is located in close proximity to the city of Ann Arbor, Township residents may first seek assistance from the Township Hall. Key locations for back-up generators are Fire station No. 1 and the Township Hall.

A very common problem that occurs during an infrastructure failure is water shortage. Installing generators at water supply sources will ensure that

# Ann Arbor Township

potable water is available to Township residents and businesses. Water shortage was one of the most prevalent problems discovered during the August 2003 black-out.

## **Extreme Temperatures**

When extreme temperatures occur, the most vulnerable residents are the elderly, young and disabled persons.

Goal: Reduce the damage and impacts caused by severe winter weather hazards and reduce the impact of the event on citizens.

### Mitigation Strategy: Emergency Generators

- Purchase generators for key facilities in order to provide a warming center during periods of extremely cold temperatures. Key locations are Fire station No. 1 and the Township Hall. (see Mitigation Strategy 1 under Infrastructure Failures).

### Mitigation Strategy: Public Education

- Distribute an Emergency Preparedness booklet. See strategy under Convective Weather for further discussion.

### Mitigation Strategy: Code Enforcement

- Continue to enforce building maintenance code to insure landlords maintain good heating equipment will reduce the risk for the residents.

## **Fire Hazard: Wildfires**

Areas of the Township remain open grasslands and woodlands, providing the opportunity for wildfire hazards within the wildland/urban interface.

Goal: Reduce the Township's vulnerability to wildfires

Objective: Maintain a proactive approach to wildfire protection

### Mitigation Strategy: Training

- Maintain adequate fire protection equipment and continue inspection programs. A quick response is most important with regard to reducing the impact of wildfires in order to keep the affected area small. This need can be met with continuing a well-equipped, well-trained and adequately staffed fire department.

### Mitigation Strategy: Public Education

- Educate the public on fire safety by talking with school children, community groups, or distributing fliers/brochures.

### Mitigation Strategy: Code Enforcement

- Adopt control burning ordinances to reduce the potential for wildfire hazards to occur.

## **Public Health Emergencies**

A public health concern is the West Nile virus. Vulnerable areas are potential breeding grounds for West Nile or other mosquito-born diseases. These include rivers, lakes, wetlands, and water and sewer systems.

Goal: Reduce the risk of Public Health Emergencies

Objective: Increase public awareness of public health emergencies, and steps to take to reduce exposures

# Ann Arbor Township

## Mitigation Strategy: Emergency Generators

- Purchase generators for key facilities. Generators may be necessary to keep vaccines cold during. See strategy under Convective Weather for further discussion.

## Mitigation Strategy: Plans

- Work with the Washtenaw County Department of Public Health on a public education plan and implementation of the plan.

## Mitigation Strategy: Programs

- Offer vaccinations and encourage residents to be vaccinated for all communicable diseases.

## **Sabotage and Terrorism**

Goal: Decrease the risk of sabotage and terrorism, and increase the Township's capacity to anticipate, manage and withstand potential incidents involving sabotage and terrorism.

Objective: Prepare residents and businesses for sabotage or terrorism events.

## Mitigation Strategy: Public Education

- Distribute an Emergency Preparedness booklet. See strategy under Convective Weather for further discussion.

## **5.0 Implementation, Funding and Monitoring**

The purpose of this plan is to identify mitigation strategies that will be implemented before, during or after a disaster to permanently eliminate or reduce risks to human life and property from natural, technical or societal hazards. The following sections present implementation actions, funding sources, and the method for monitoring the plan.

## **5.1 Implementation**

The following schedule is given for hazard mitigation strategies described in Section 4.0. Completion dates have not been included as such dates are subject to uncertain factors, and will only begin after the mitigation strategy has been approved. While all strategies are important, priority is has been given to those that may be funded by a FEMA hazard mitigation grant program (see Section 5.2). Action on strategies will depend upon staff, resource and funding availability.

### **High Priority Strategies**

#### Warning Sirens

*Responsible Agencies:* Ann Arbor Township and Washtenaw County Emergency Management Division

*Estimated Cost:* \$18,000 for siren and first year of maintenance fees, \$500 annually thereafter (does not include replacement parts).

#### Emergency Generators

*Responsible Agencies:* Ann Arbor Township

*Estimated Cost:* \$25,000 per generator.

### **Other Important Strategies**

#### Code Enforcement

- Road regulations, weight restrictions
- Control burning ordinances
- Building codes (heat)

*Responsible Agency:* Ann Arbor Township

*Estimated Cost:* Staff time.

# Ann Arbor Township

## Public Education (brochures, mailings regarding Family Preparedness kits)

*Responsible Agencies:* Ann Arbor Township and Washtenaw County Emergency Management Division  
*Estimated Cost:* \$5,000 annually.

## Training and Education

- Continued training, equipment and maintenance for the Hazardous Material Response Team
- Responsible Agency:* Ann Arbor Township and Washtenaw County Emergency Management Division  
*Estimated Cost:* \$10,000-\$15,000 annually.

## Amend Master Plan to incorporate hazard mitigation goals, strategies

*Responsible Agency:* Ann Arbor Township  
*Estimated Cost:* Staff time.

## Plan Implementation

- Participate with County Emergency Action Guidelines
- Provide assistance with developing on-site emergency plans for vulnerable facilities
- Implement strategies in this hazard mitigation plan
- Work with the Washtenaw County Department of Public Health on plans, vaccination programs

*Responsible Agency:* Ann Arbor Township  
*Estimated Cost:* Staff time. Estimated cost for securing grants to implement strategies herein: \$5,000-\$10,000.

## Road Safety Enforcement

- Work with WCRC and MDOT
  - Consider partnerships with surrounding communities to share weigh-master facility and patrol.
- Responsible Agency:* Ann Arbor Township  
*Estimated Cost:* Staff time.

## Public Education (visits to schools, assemblies)

- Work with school district to education children on fire safety
- Responsible Agency:* Ann Arbor Township Fire Department  
*Estimated Cost:* Staff time.

## **5.2 Sources of Financial Assistance**

Implementation of the mitigation strategies is often dependent on funding assistance from Federal and State sources. FEMA provides funding for structural projects through the hazard mitigation grant programs. These include the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Assistance Program, and the Flood Mitigation Assistance Program.

FEMA emphasizes the implementation of structural mitigation strategies. The strategies that are a priority for FEMA are not a priority for Ann Arbor Township at this time. The strategies listed in this plan that qualify for FEMA funds include emergency generators and warning sirens.

Financial support for other mitigation strategies proposed in this plan may be sought through alternative funding sources. For example, funds for public outreach, equipment and training may be obtained through the FEMA Emergency Management Performance Grant (EMPG). Projects may be implemented with the assistance of non-profit organizations, or funds secured from Community Foundations. There are many State and Federal programs that are available to local governments, as provided in Attachment 2.

## **5.3 Monitoring of the Plan**

The plan will be monitored on a regular basis, and is the responsibility of the Ann Arbor Township Supervisor. The plan will be an annual agenda item for the Ann Arbor Board of Trustees. At a minimum, during its review, the Board will discuss the monitoring of the plan, the number of projects

## Ann Arbor Township

pursued, or reasons for lack of pursuit for approved projects. Prior to the meeting, the Washtenaw County Emergency Management Division can be contacted for updates or recommended amendments to the plan.

To assist with the annual evaluation and review of the plan, the Township may consider forming a local hazard mitigation committee. The committee could also be charged with identifying methods of obtaining public input.

Although review of the plan will occur annually, and a formal revision may not be needed each year, an update of the plan will be prepared every five years, based on annual reviews, amendments, monitoring, evaluation and accumulation of official feedback and public input. The revised plan will again be adopted by the Township Board.

**Attachment 1  
County Hazard Plan**



**Attachment 2  
Alternative Funding Sources**

# Ann Arbor Township

Funding Source	Civil Disturbance	Drought	Earthquake	Extreme Temperature	Scrap Tire Facilities	Structural Fire	Wildfire	Dam Failure	Flooding: Riverine	Flooding: Urban	Hazardous Materials Incidents - Fixed Site	Hazardous Materials Incidents - Transportation	Infrastructure Failure	Nuclear Attack	Nuclear Power Plant Incidents	Oil/Nat Gas Well Incidents	Petrol/Nat Gas Pipeline Incidents	Public Health Emergencies	Sabotage/Terrorism	Hail	Lightning	Severe Winds	Severe Winter Weather	Transportation Accidents	Tornado	Financial Assistance	Technical Assistance
<b>FEDERAL SOURCES</b>																											
Business and Industry Loans	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
CDC-Investigations and Technical Assistance																		√								√	
CEPP Technical Assistance Grants Program											√	√						√								√	√
Community Assistance Program-State Support Services Element (NFIP)								√	√	√																	√
Community Development Block Grant/Economic Development Initiative									√	√			√										√			√	
Community Development Block Grant/Entitlement Grants	√	√	√	√	√	√	√	√	√	√	√	√	√					√	√	√	√	√	√	√	√	√	√
Community Development Block Grant/Small Cities Program	√	√	√	√	√	√	√	√	√	√	√	√	√					√	√	√	√	√	√	√	√	√	√
Community Development Block Grant/State's Program	√	√	√	√	√	√	√	√	√	√	√	√	√					√	√	√	√	√	√	√	√	√	√
Community Disaster Loans	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Community Facilities Loans and Grants	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Community Outreach Partnership Center Program	√	√	√	√	√	√	√	√	√	√	√	√						√	√	√	√	√	√	√	√	√	√
Conservation Reserve Program									√	√															√	√	√
Cooperative Forestry Research							√																			√	
Cora Brown Fund	√	√	√	√	√	√	√	√	√	√	√	√			√	√	√	√	√	√	√	√	√	√	√	√	√
Direct Housing Natural Disaster (Very Low/Low Income Loans)							√	√													√	√			√	√	
Disaster Housing Program	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Disposal of Federal Surplus Property (Transfers)									√																	√	
Economic Adjustment Assistance								√	√	√															√	√	
Economic Development Tech Assistance									√																	√	√
Emergency Advance Measures for Flood Protection								√	√	√																√	√

# Ann Arbor Township

Funding Source	Civil Disturbance	Drought	Earthquake	Extreme Temperature	Scrap Tire Facilities	Structural Fire	Wildfire	Dam Failure	Flooding: Riverine	Flooding: Urban	Hazardous Materials Incidents - Fixed Site	Hazardous Materials Incidents - Transportation	Infrastructure Failure	Nuclear Attack	Nuclear Power Plant Incidents	Oil/Nat Gas Well Incidents	Petrol/Nat Gas Pipeline Incidents	Public Health Emergencies	Sabotage/Terrorism	Hail	Lightning	Severe Winds	Severe Winter Weather	Transportation Accidents	Tornado	Financial Assistance	Technical Assistance
<b>FEDERAL SOURCES</b>																											
Emergency Community Water Assistance Grants		√							√		√		√					√	√							√	
Emergency Conservation Program		√							√													√			√		
Emergency Flood and Shelter National Board Program	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Emergency Management Institute-Resident Ed Program	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Emergency Management Institute-Training Assistance	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Emergency Management Performance Grants	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Emergency Management-State and Local Assistance	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Emergency Operations Flood Response and Post-Flood Response								√	√	√																√	
Emergency Rehabilitation of Flood Control Works								√	√																	√	
Engineering Grants	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Farmland Protection Program									√																	√	
Fire Suppression Assistance							√																			√	
Fisheries Disaster Relief		√					√	√	√	√	√	√							√							√	
Flood Insurance								√	√	√																	√
Flood Mitigation Assistance									√	√																√	
Flood Plain Management Services								√	√	√																√	
Food Control Projects								√	√																	√	
Forestry Incentives Program																						√			√	√	
Forestry Research									√	√												√			√	√	
Grants for Public Works and Economic Development								√	√	√			√													√	

# Ann Arbor Township

Funding Source	Civil Disturbance	Drought	Earthquake	Extreme Temperature	Scrap Tire Facilities	Structural Fire	Wildfire	Dam Failure	Flooding: Riverine	Flooding: Urban	Hazardous Materials Incidents - Fixed Site	Hazardous Materials Incidents - Transportation	Infrastructure Failure	Nuclear Attack	Nuclear Power Plant Incidents	Oil/Nat Gas Well Incidents	Petrol/Nat Gas Pipeline Incidents	Public Health Emergencies	Sabotage/Terrorism	Hail	Lightning	Severe Winds	Severe Winter Weather	Transportation Accidents	Tornado	Financial Assistance	Technical Assistance
<b>FEDERAL SOURCES</b>																											
Grants-in-Aid for Railroad Safety-State Participation												√												√			√
Habitat Conservation																											√
Hazard Mitigation Grant Program	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
HazMat Training Program for Implementation of SARA											√	√															√
Health Program for Toxic Substances and Disease Registry											√							√									√
Highway Planning and Construction													√													√	√
Historic Preservation Funds Grants-In Aid						√			√	√										√	√	√	√		√		√
HOME Investment Partnerships Program									√	√										√	√	√				√	
Hydrologic Research		√						√	√	√																	√
Individual and Family Grant Program	√	√	√				√	√	√	√																	√
Planning Grants (HazMat Emergency Preparedness Grant)											√	√															√
Motor Carrier Safety												√															√
National Dam Safety Program							√																				√
National Pollutant Discharge Elimination System Related State Program Grants																√	√	√									√
National Urban Search and Rescue Response System			√										√						√						√		√
North American Wetlands Conservation Fund								√	√																		√
Nursing Homes						√																					√
Planning (Land and Water Conservation Fund Grants)									√																		√
Physical Disaster Loans	√		√		√	√			√	√			√						√	√	√	√	√		√	√	√
Pipeline Safety																√	√										√

# Ann Arbor Township

Funding Source	Civil Disturbance	Drought	Earthquake	Extreme Temperature	Scrap Tire Facilities	Structural Fire	Wildfire	Dam Failure	Flooding: Riverine	Flooding: Urban	Hazardous Materials Incidents - Fixed Site	Hazardous Materials Incidents - Transportation	Infrastructure Failure	Nuclear Attack	Nuclear Power Plant Incidents	Oil/Nat Gas Well Incidents	Petrol/Nat Gas Pipeline Incidents	Public Health Emergencies	Sabotage/Terrorism	Hail	Lightning	Severe Winds	Severe Winter Weather	Transportation Accidents	Tornado	Financial Assistance	Technical Assistance
<b>FEDERAL SOURCES</b>																											
Project Impact: Building Disaster-Resistant Communities	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Protection Clearing and Straightening Channels									√																	√	
Protection of Essential Highways, Highway Bridge Approaches, and Public Works								√	√																	√	
Public Assistance Grant Program	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Public Health and Social Services Emergency Fund (Post-Declaration Only)																		√								√	
Public Telecommunications Facilities Planning and Construction																								√	√		
Railroad Safety												√												√		√	
Resource Conservation and Development		√	√	√			√	√	√																		√
Rivers, Trails, and Conservation Assistance								√	√																		√
Rural Business Opportunity Grants								√																		√	
Rural Development Grants								√					√													√	
Rural Electrification Loans													√									√	√	√	√	√	
Rural Housing and Economic Development	√	√	√	√	√	√	√	√	√	√	√	√						√	√	√	√	√	√	√	√	√	√
Rural Housing Site Loans and Self-Help Housing and Development Loans								√	√																	√	
Snagging and Clearing for Flood Control								√	√																	√	
Soil and Water Conservation		√	√	√			√	√	√	√																	√
State and Community Highway Safety												√												√			√
State Domestic Preparedness Equipment, Support Program																			√							√	
Superfund State Site-Specific Cooperative Agreements											√							√								√	
Superfund Technical Assistance Grants for Citizen Groups at Priority Sites											√															√	√
Surveys, Studies, Investigations and Special Purpose Grants											√	√			√	√	√	√								√	

# Ann Arbor Township

Funding Source	Civil Disturbance	Drought	Earthquake	Extreme Temperature	Scrap Tire Facilities	Structural Fire	Wildfire	Dam Failure	Flooding: Riverine	Flooding: Urban	Hazardous Materials Incidents - Fixed Site	Hazardous Materials Incidents - Transportation	Infrastructure Failure	Nuclear Attack	Nuclear Power Plant Incidents	Oil/Nat Gas Well Incidents	Petrol/Nat Gas Pipeline Incidents	Public Health Emergencies	Sabotage/Terrorism	Hail	Lightning	Severe Winds	Severe Winter Weather	Transportation Accidents	Tornado	Financial Assistance	Technical Assistance
<b>FEDERAL SOURCES</b>																											
Technology Development for Environmental Management												√			√												√
Very Low Income Housing Repair Loans/Grants				√		√	√		√											√	√	√			√	√	
Very Low to Moderate Income Housing Loans				√		√	√		√											√	√	√			√	√	
Water and Waste Disposal System for Rural Communities									√		√		√					√	√							√	
Water/Waste Disposal Loans/Grants									√		√		√					√								√	
Watershed Protection and Flood Prevention								√	√	√								√								√	√
Watershed Surveys and Planning		√							√																		√
Weatherization Assistance for Low-Income Persons				√																						√	
Wetlands Protection-Development Grants									√	√																√	
Wetlands Reserve Program									√	√																√	√
Wildlife Habitat Incentive Program									√																	√	

# Ann Arbor Township

Funding Source	Civil Disturbance	Drought	Earthquake	Extreme Temperature	Scrap Tire Facilities	Structural Fire	Wildfire	Dam Failure	Flooding: Riverine	Flooding: Urban	Hazardous Materials Incidents - Fixed Site	Hazardous Materials Incidents - Transportation	Infrastructure Failure	Nuclear Attack	Nuclear Power Plant Incidents	Oil/Nat Gas Well Incidents	Petrol/Nat Gas Pipeline Incidents	Public Health Emergencies	Sabotage/Terrorism	Hail	Lightning	Severe Winds	Severe Winter Weather	Transportation Accidents	Tornado	Financial Assistance	Technical Assistance
<b>STATE OF MICHIGAN</b>																											
<b>Department of Agriculture</b>																											
Energy Conservation Program									√														√			√	√
Groundwater Stewardship Program											√							√								√	√
Intercounty Drain Program (available to Drain Commissioner only)								√	√	√																	√
<b>Economic Development Corporation</b>																											
Community Development Block Grant									√	√			√													√	
Urban Land Assembly									√																	√	
<b>Environmental Quality</b>																											
Abandoned Well Mgmt. Program																		√								√	
Alternate Water Supply Replacement Program									√	√	√		√					√								√	
Brownfield Redevelopment Grants											√							√								√	√
Drinking Water Revolving Loan Fund													√					√	√							√	
Municipal Landfill Cost-Share Grant Program																		√								√	
Non-community Water Supply Program Grant																		√								√	
Scrap Tire Collection Site Cleanup Grants					√																					√	
State Revolving Loan Fund									√	√			√					√								√	
Wellhead Protection Program									√	√								√								√	
Wetland Program Development									√	√																√	

# Ann Arbor Township

Funding Source	Civil Disturbance	Drought	Earthquake	Extreme Temperature	Scrap Tire Facilities	Structural Fire	Wildfire	Dam Failure	Flooding: Riverine	Flooding: Urban	Hazardous Materials Incidents - Fixed Site	Hazardous Materials Incidents - Transportation	Infrastructure Failure	Nuclear Attack	Nuclear Power Plant Incidents	Oil/Nat Gas Well Incidents	Petrol/Nat Gas Pipeline Incidents	Public Health Emergencies	Sabotage/Terrorism	Hail	Lightning	Severe Winds	Severe Winter Weather	Transportation Accidents	Tornado	Financial Assistance	Technical Assistance	
<b>STATE OF MICHIGAN</b>																												
<b>Housing Development Authority</b>																												
Community Development Block Grants/Housing Resource Fund						√			√	√											√		√		√	√		
Home/Property Improvement Loans						√			√	√											√		√		√	√		
<b>Department of Natural Resources</b>																												
Habitat Improvement Fund Project Grants									√																		√	
Land and Water Conservation Fund									√																		√	
Natural Resources Trust Fund						√			√																		√	
Recreational Trails Program Grants									√																		√	
Urban and Community Forestry Program																						√	√		√	√		
Volunteer Fire Assistance					√	√	√																				√	
<b>State Police</b>																												
Emergency Management Performance Grants	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Flood Mitigation Assistance									√	√																	√	√
Hazard Mitigation Grant Program	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	
Individual and Family Grant Program									√	√			√														√	

# Ann Arbor Township

Funding Source	Civil Disturbance	Drought	Earthquake	Extreme Temperature	Scrap Tire Facilities	Structural Fire	Wildfire	Dam Failure	Flooding: Riverine	Flooding: Urban	Hazardous Materials Incidents - Fixed Site	Hazardous Materials Incidents - Transportation	Infrastructure Failure	Nuclear Attack	Nuclear Power Plant Incidents	Oil/Nat Gas Well Incidents	Petro/Nat Gas Pipeline Incidents	Public Health Emergencies	Sabotage/Terrorism	Hail	Lightning	Severe Winds	Severe Winter Weather	Transportation Accidents	Tornado	Financial Assistance	Technical Assistance
<b>STATE OF MICHIGAN</b>																											
<b>State Police (continued)</b>																											
Interagency HazMat Public Sector Training and Planning Grants (HazMat Emergency Preparedness Grant)											√	√		√	√	√	√									√	
Project Impact	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Public Assistance Grant Program	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
<b>Department of Transportation</b>																											
Rail Loan Assistance Program												√	√													√	
Trans. Econ. Development Fund								√	√	√																√	
<b>Department of Treasury</b>																											
Municipal Bond Authority-Local Government Loan Program				√		√			√	√			√						√	√	√	√	√	√		√	
Municipal Bond Authority-State Aid Note Program				√		√			√	√			√						√	√	√	√	√	√		√	