

# HAZARD MITIGATION PLAN for Barton Hills Village

October 2004



**BARTON HILLS VILLAGE  
HAZARD MITIGATION PLAN**

Whereas southeastern Michigan has experienced disasters that have resulted in loss of life or injury, damaged commercial, residential and public properties, displaced citizens and businesses, closed streets and bridges, and presented general public health and safety concerns; and although Barton Hills Village has experienced few of the above events, there is concern for future possible occurrences; and

Whereas as of November of 2004 the Federal Emergency Management Agency (FEMA) requires that communities have an adopted Hazard Mitigation Plan as a requirement to receiving funding under certain FEMA programs; and

Whereas the *Hazard Mitigation Plan* ranks hazards for the community and identifies goals, objectives and strategies to reduce overall damage and impact from natural and technological hazards; and

Whereas Barton Hills Village has worked with Washtenaw County to prepare the *Hazard Mitigation Plan* by participating in the planning process and providing comments with respect to hazards, vulnerable areas and strategies; and

Whereas residents, community officials, business owners, educational institutions, neighboring jurisdictions and the Michigan State Police Division of Emergency Management have had the opportunity to review the plan and their comments have been incorporated;

Now, therefore, be it resolved that:

1. The *Hazard Mitigation Plan* is hereby adopted as an official plan of Barton Hills Village.
2. The *Hazard Mitigation Plan* will be an annual agenda item for the Barton Hills Village Board of Trustees to review. The annual review shall include the following:
  - a. A review of the original plan.
  - b. A review of any disasters or emergencies that occurred during the previous calendar year.
  - c. A review of actions taken, including what was accomplished during the previous year.
  - d. A discussion of any implementation problems.
  - e. Recommendations for new projects or revised action items. Such recommendations shall be subject to approval by the Barton Hills Village Board of Trustees.
3. The *Hazard Mitigation Plan* will be updated every five years as required by FEMA, with the assistance of Washtenaw County.
4. The Barton Hills Village Superintendent and appropriate Barton Hills Village Trustees will be responsible for ensuring that the strategies in the *Hazard Mitigation Plan* are implemented, with the understanding that implementation is based on the availability of funding and staff resources.

Passed this 18th day of October, 2004

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



# Barton Hills Village

## 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. Barton Hills Village 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 The Village; 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 Village's long range plans, and other documents, as applicable.

## 1.2 Plan Organization

This Plan was prepared by Washtenaw County on behalf of Barton Hills Village. 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).

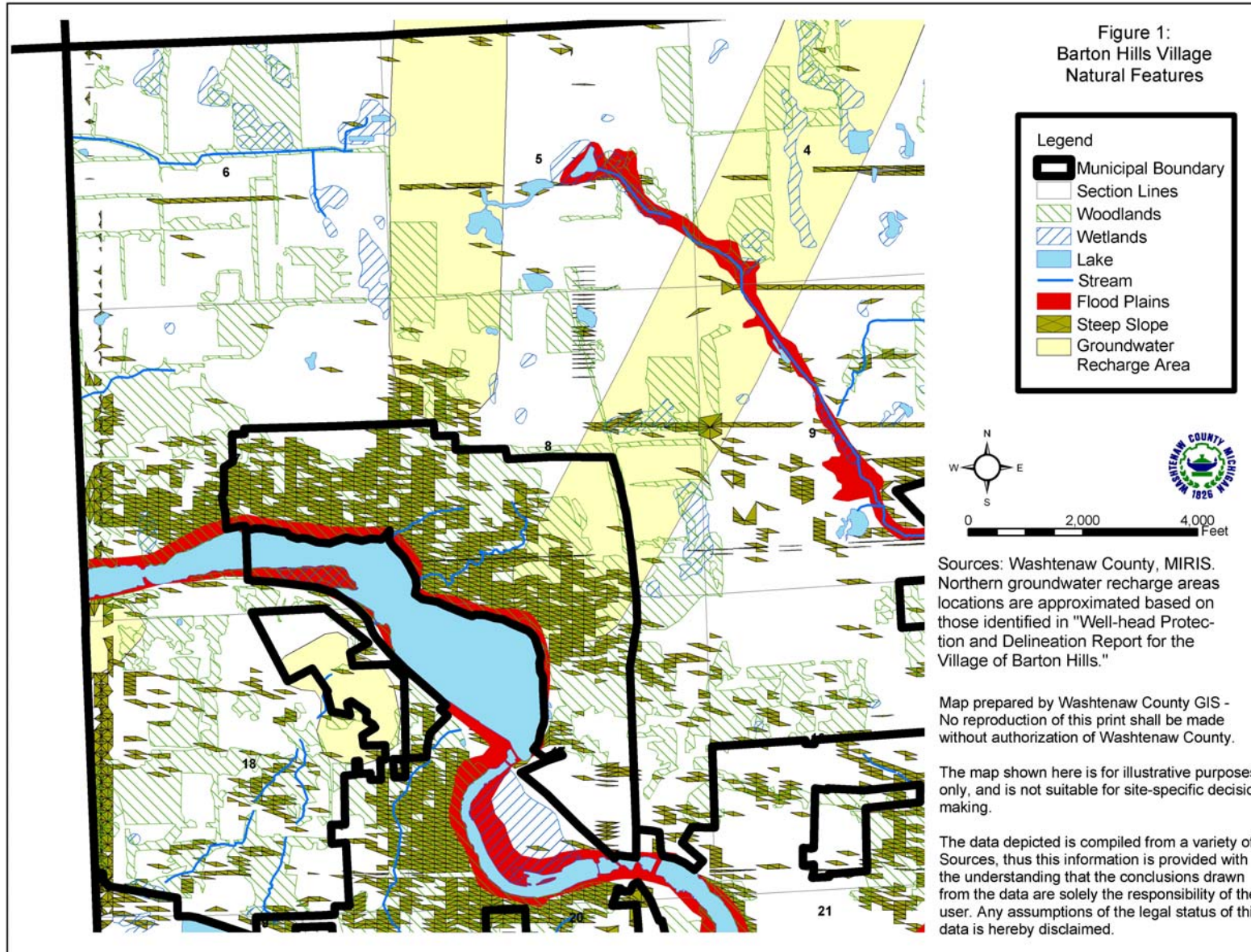
## 1.3 Public Participation

Representatives from Barton Hills Village worked with the Washtenaw County Emergency Management Division and Department of Planning and Environment comment on the draft hazard mitigation plan. An opportunity for the citizens of Village 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 Village Council adopted the plan on 18 October 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 Barton Hills Village will be shared with the Village of Barton Hills.

# Barton Hills Village



# Barton Hills Village

## 2.0 Community Profile

### 2.1 Historic Overview

The area in which Barton Hills Village is located was originally platted in 1881. Barton Hills Village, which occupies a portion of the originally platted area, was incorporated as a village in 1973. Prior to that time it had operated as a private homeowners' association, as established by a subsidiary of the Detroit Edison Company in approximately 1921. The village is located primarily on the north shore of Barton Pond, an impoundment of the Huron River, and is bordered on the southernmost portion by the Norfolk Southern Railroad.

### 2.2 Natural Features

Most of Barton Hills Village consists of heavily wooded hilly areas, with wetlands and streams feeding into the Huron River. Figure 1 provides the general location of natural features in the Village.

### 2.3 Land Use Patterns

Barton Hills Village totals approximately 530 acres, devoted largely to single-family residential use. There are common woodland and wetland areas, as well as active agriculture. There are no public parks or other areas, but a portion of the shoreline is rented to the Barton Hills Boat Club, a completely separate private entity.

### 2.4 Transportation Network

Barton Hills Village is served by private roads. Access to the village is primarily from the M-14 interchange, Barton Drive and Whitmore Lake Road on the east, and secondarily Maple Road/Foster Bridge/Country Club Road to the west. The community does not have an airport or railroad depot.



Ken Huisjen: <http://www.infomi.com/city/bartonhillsvillage/>

# Barton Hills Village

## 3.0 HAZARDS

Barton Hills Village is susceptible to a variety of natural, technological, and societal hazards. The purpose of this section is to:

- Rank the hazards for Barton Hills Village
- Analyze the risks for each hazard, and
- Identify vulnerable areas for the Village, and appropriate goals and mitigation strategies for certain hazards.

### 3.1 Hazard Ranking

The ranking of hazards for Barton Hills Village 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.

**Table 1: Hazard Ranking**

Hazard	Ranking
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
Fire Hazards: Wildfires	5
Fire Hazards: Structural	6
Drought	7
Nuclear Power Plant Accidents	8
Extreme Temperatures	9
Public Health Emergencies	10
Nuclear Attack	11
Hazardous Materials Incidents: Fixed Site	12
Transportation Accidents: Air and Land	13
Petroleum and Natural Gas Pipeline Accidents	14
Flood Hazards: Riverine/Urban Flooding	15
Sabotage & Terrorism	16
Earthquakes	17
Civil Disturbances	NA
Oil and Gas Well Accidents	NA
Flood Hazards: Dam Failures	NA

# Barton Hills Village

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

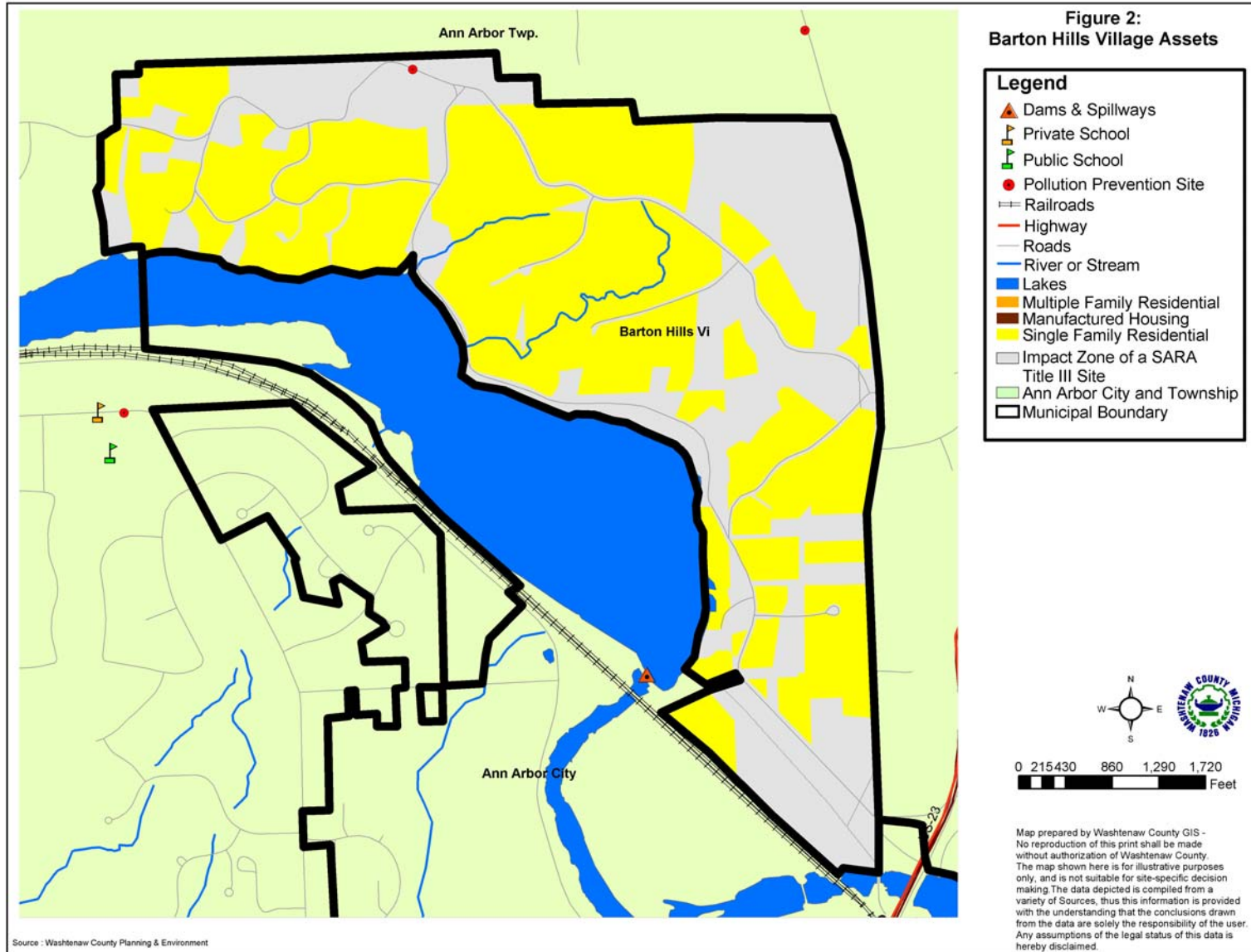
Vulnerability assessments were prepared for convective weather, hazardous materials transportation incidents, hazardous materials fixed site incidents, infrastructure failures and severe winter weather hazards. The goal is to quantitatively measure the threat experienced by Washtenaw County communities. 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

# Barton Hills Village



# Barton Hills Village

## 4.0 Hazard Goals and Strategies

The following sections present goals and strategies by hazard. Figure 2 presents the assets and hazards identified for Barton Hills Village, and may be referred to in the following sections. The goals and strategies are not an inclusive list; rather the goals and strategies are those that the Village 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.

### 4.1 Non-Hazard Specific Goals and Strategies

Goal: Integrate mitigation strategies into the Village's long range planning documents

#### Mitigation Strategy: Plans

- Establish a Planning subcommittee charged with amending long range plans or other relevant documents to include hazard mitigation goals and strategies, as applicable.

### 4.2 Hazard-Specific Goals and Strategies

#### **Convective Weather**

Barton Hills Village is vulnerable to convective weather events. Most storms come in from the northwest, placing it on the front-line of hazardous weather events (Figure 3).

Goal: Reduce the Village's vulnerability to convective weather storm hazards, minimize loss of life and injury, and damage to public property.

#### Mitigation Strategy: Emergency Generators

- Secure funding to install emergency generator(s) for the water wells. In addition to convective weather, other hazards have the potential to impact the Village's water supply. After the capacity of the water tower is exhausted, Village residents are reliant on wells, which require electricity to function. Installing generators at the wells would allow residents to remain in-place in the event that water is not available for an extended period of time.

#### Mitigation Strategy: Warning Sirens

- Secure funding for installation of warning sirens. Warning sirens are also an important strategy. Not all residents are reached by the sirens operated by the City of Ann Arbor; those located at the east and west ends of Barton North Drive and the Country Club Roads are of particular concern. The Village will explore an arrangement with the Country Club to place a siren at the club or on the water tower. The City of Ann Arbor or Washtenaw County could be responsible for activation of the siren when required.

#### 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 information box, page 9).

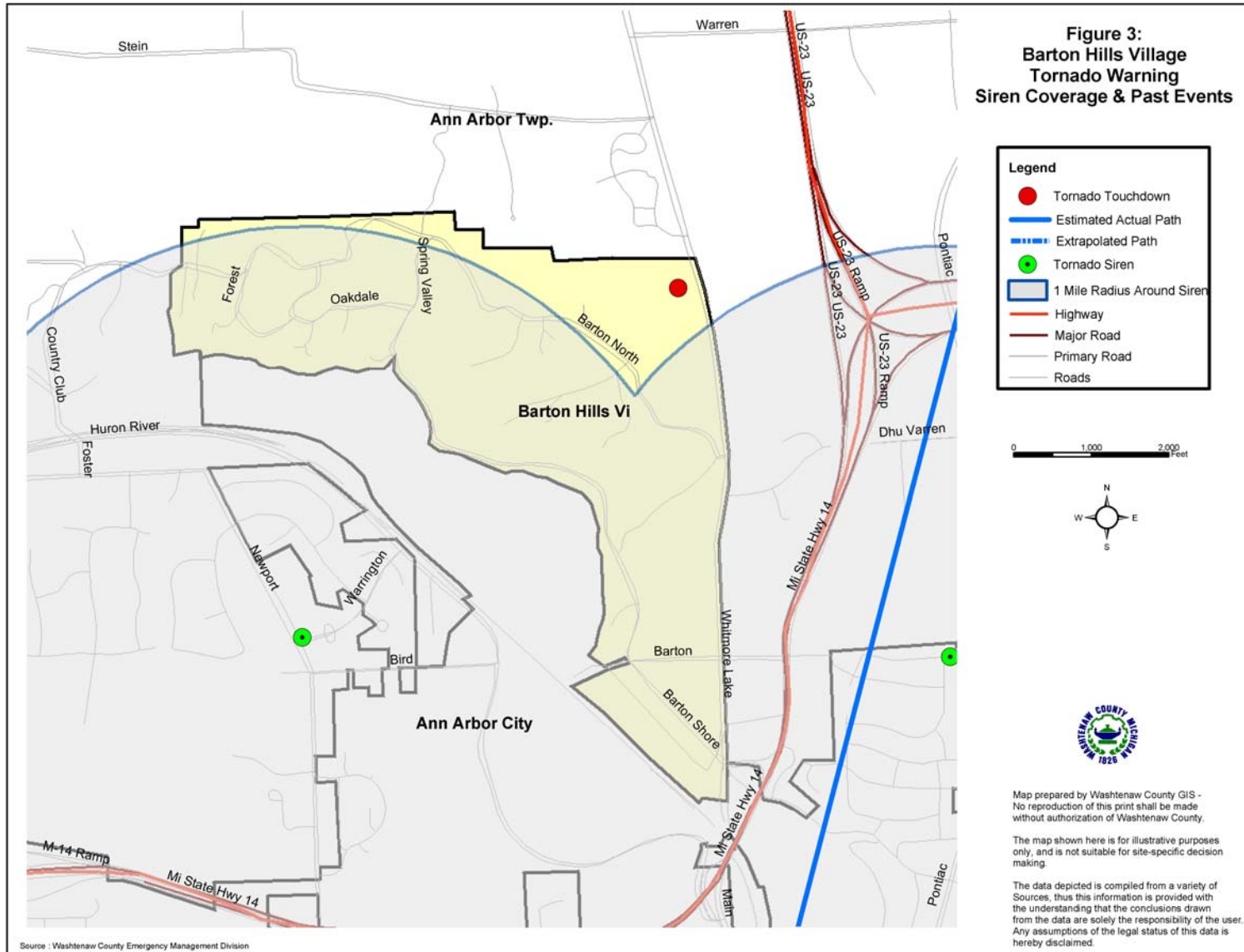
#### Mitigation Strategy: Maintenance

- Distribute annual reminders to ground utility providers, encouraging them to keep power lines clear of trees and tree limbs. This would reduce the chance of electrical power failure for Villages residents.

#### Mitigation Strategy: Training

- Encourage residents to attend the Washtenaw County Skywarn Spotter training course.

# Barton Hills Village



# Barton Hills Village

## Infrastructure Failure

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

### Mitigation Strategy: Emergency Generators

- Secure funding for emergency generators. See strategy under Convective Weather for further discussion.

### Mitigation Strategy: Maintenance

- Distribute annual reminders to ground utility providers, encouraging them to keep power lines clear of trees and tree limbs, specifying addresses and locations of problem trees.

### Mitigation Strategy: Public Education

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

## Severe Winter Weather Hazard

Above ground power supply, coupled with mature trees can be a disaster when heavy snows or freezing rain occurs. The weight of the frozen precipitation causes tree limbs to fall on power lines, causing power outages, which is a significant problem. Loss of power in the winter generally means loss of heat for citizens. Falling tree limbs also damage property, block emergency routes and roadways, endanger lives and are very costly to clean up and remove.

Goal: Reduce the damage and impacts caused by severe winter weather hazards continue to reduce the impact of such an event on the community.

## 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 the FEMA website at <http://www.fema.gov/pdf/library/yfdp.pdf>

# Barton Hills Village

## Mitigation Strategy: Emergency Generators

- Secure funding to install emergency generators. See strategy under Convective Weather for further discussion.

## 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 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**

#### Emergency Generators

*Responsible Agencies:* Village of Barton Hills, with assistance from the Washtenaw County Emergency Management Division

*Estimated Cost:* \$20,000 per generator.

## Warning Sirens

*Responsible Agencies:* Village of Barton Hills 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).

### **Other Important Strategies**

#### Public Education (Family Preparedness brochures to residents)

*Responsible Agencies:* Village of Barton Hills

*Estimated Cost:* \$2,500 annually.

#### Encourage residents to attend Skyspotter Warning Training

*Responsible Agencies:* Washtenaw County Emergency Management Division

*Estimated Cost:* Free, Residents must be 18 years of age or older.

#### Maintenance (annual reminders to utility providers)

*Responsible Agencies:* Village of Barton Hills

*Estimated Cost:* Staff time.

#### Amend Plans to incorporate hazard mitigation goals, strategies

*Responsible Agency:* Village of Barton Hills

*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.

## Barton Hills Village

FEMA emphasizes the implementation of structural mitigation strategies. The strategies that are a priority for FEMA are not a priority for Barton Hills Village 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 Units of Government, 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 Barton Hills Village President. The plan will be an annual agenda item for the Village Council. At a minimum, during its review, the Village Council will discuss the monitoring of the plan, the number of projects 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 Village 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 Barton Hills Village Council.

# Barton Hills Village

**Attachment 1  
County Hazard Plan**

# Barton Hills Village

**Attachment 2  
Alternative Funding Sources**

# Barton Hills Village

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								√	√	√																√	√

# Barton Hills Village

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								√	√	√			√													√	

# Barton Hills Village

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																√	√										√

# Barton Hills Village

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											√	√			√	√	√	√									√

# Barton Hills Village

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									√																		√

# Barton Hills Village

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									√	√																√	√

# Barton Hills Village

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									√	√			√														√	

# Barton Hills Village

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				√		√			√	√			√						√	√	√	√	√	√		√	