

# I. Introduction

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There are a multitude of disruptions that counties across the country face each and every day. Ranging from natural disasters to structural failures to economic downturns, these events can impact natural environments and cause damage to homes or businesses. While the scope and size of disasters may vary, one commonality they all share is that they are expensive.

Across the United States, natural, technological, and man-made disasters have led to increasing levels of death, injury, property damage, and interruption of business and government services. The impact on families and individuals can be immense and damages to businesses can result in regional economic consequences. The time, money and effort to respond to and recover from these disasters divert public resources and attention from other important programs and problems. The elected and appointed officials of the county also know that with careful selection, mitigation actions in the form of projects and programs can become long-term, cost effective means for reducing the impact of natural, technological, and man-made hazards.

Presidential Policy Directive 8: National Preparedness (PPD-8) describes the Nation's approach to preparing for the threats and hazards that pose the greatest risk to the security of the United States. National preparedness is the shared responsibility of our whole community. Every member contributes, including individuals, communities, the private and nonprofit sectors, faith-based organizations, and Federal, State and Local Governments. We describe our security and resilience posture through the core capabilities that are necessary to deal with great risks, and we will use an integrated, layered, and all-of-Nation approach as our foundation.

This All-Hazard Mitigation Plan for St. Clair County, Michigan (the plan) was prepared with input from county residents, responsible local officials and with the support of the Michigan State Police–Emergency Management Homeland Security Division (MSP/EMHSD) and the Federal Emergency Management Agency (FEMA). The process to develop the plan included nearly a year of coordination with representatives from numerous jurisdictions and other organizations in the county. The plan will guide the county toward greater disaster resistance in harmony with the character and needs of the community.

## ***Plan Description/Purpose of Plan***

Individual and community preparedness is fundamental to our success. By providing the necessary knowledge and skills, we seek to enable the whole community to contribute to and benefit from national preparedness. This includes children, individuals with disabilities and others with access and functional needs, diverse communities, and people with limited English proficiency. Their needs and contributions must be integrated into our efforts. Each community contributes to the Goal and strengthens our national preparedness by preparing for the risks that are most relevant and urgent for that community and the County as a whole.

This Hazard Mitigation Plan is specifically written to satisfy the requirements of the Disaster Mitigation Act of 2000 (DMA 2000), which is the latest legislation to improve the hazard planning process (public law 106-390). By adopting the plan, St. Clair County will remain eligible for various federally funded hazard mitigation grant opportunities for five years. DMA 2000 reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur and establishes a pre-disaster hazard mitigation program and new

## **Definitions:**

- DHS (Department of Homeland Security)
- DMA 2000 (Disaster Mitigation Act)
- FEMA (Federal Emergency Management Agency)
- HMGP (Hazard Mitigation Grant Program)
- MSP-EMHSD (Michigan State Police-Emergency Management Homeland Security Division)
- SCCHD (St. Clair County Health Department)
- SCCMPC (St. Clair County Metropolitan Planning Commission)
- SCCHSEM (St. Clair County Homeland Security Emergency Management)
- SCCRC (St. Clair County Road Commission)

requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP). It identifies new requirements that allow HMGP funding available to states that have developed a comprehensive mitigation plan prior to a disaster. States and communities are required to have an approved mitigation plan in position prior to receiving post-disaster HMGP funds. Local and tribal mitigation plans must demonstrate that their proposed mitigation measures are based on a sound planning process that accounts for the risk to and the capabilities of the overall community.

This plan is intended to serve many purposes, including:

- **Increasing public awareness** to help residents of St. Clair County better understand the natural and man-made hazards that threaten public health, safety, and welfare; economic vitality; and operational capability of important institutions;
- **Enhancing decision making capacity** by providing information that managers and leaders of local government, business and industry, community associations, and other key institutions and organizations need to take action to address vulnerabilities to future disasters;
- **Developing a detailed community profile** that can be utilized as a reference when considering the potential impacts that a hazard can have on a range of community assets;
- **Providing inter-jurisdictional coordination of mitigation-related programming** to ensure that St. Clair County and its communities can take full advantage of state and federal grant programs that encourage or mandate efficient hazard mitigation planning.

The plan is a comprehensive study of the hazards that have impacted St. Clair County in the past as well as those that have the potential to occur in the future. Some of these hazards are a greater threat to some communities than others, and some hazards could harm one sector of society more than others.

The plan consists of a narrative description with the following chapters:

- I. Introduction
- II. Community Profile
- III. Hazard/Threat Profiles
- IV. Threat & Hazard Ranking and Probability
- V. St. Clair County's Capacity to Address Hazards
- VI. Public Involvement
- VII. Hazard Mitigation Goals and Objectives
- VIII. Inventory of Hazard Mitigation Actions
- IX. Implementation of All-Hazard Mitigation
- X. Hazard Mitigation Action Plan
- XI. Funding All-Hazard Mitigation
- XII. Integrating All-Hazard Planning into Policy and Regulatory Framework
- XIII. Resources and Tools

This plan is to support and enhance Homeland Security, community health, public safety, and all hazard preparedness with responsible leadership and planning, and to reduce, prevent, and prepare for emergencies or disasters.

The Community Profile provides geographic, economic, social, and land use information that is relevant to St. Clair County and how it is affected by and responds to hazard events. The Hazard Analysis and Vulnerability section shows the overall ranking of hazards affecting St. Clair County and also explains the methodology the county utilized to rank them. Moreover, this section describes in detail the hazards that have the potential to occur in St. Clair County. The Mitigation Goals and Objectives section establishes the county's overall

direction for hazard mitigation planning and actions. The Inventory of Mitigation Measures explains general structural and managerial actions that should be pursued to lessen the impacts of hazards.

Records of the Natural Weather Service, Federal Emergency Management Agency, Michigan Department of State Police - Emergency Management Homeland Security Division, newspapers, and numerous other federal, state, county, local agencies, and private organizations were used as sources for the data presented in this Plan.

### ***The Planning Process***

This Plan is the product of a rational thought process that reviews alternatives, then selects and designs those that will work best for the situation. This process is an attempt to avoid the need to make quick decisions based on inadequate information. The Plan provides carefully considered directions to the county government and to the participating municipalities by studying the overall damage potential of hazards and ensuring that public funds are well spent.

### ***Participants in the Planning Process***

The Hazard Mitigation Plan Steering Committee led the development of the Plan. In addition, the municipalities within St. Clair County were invited to participate in the planning process. In the development of this Hazard Mitigation Plan, the St. Clair County Office of HSEM prepared the plan, with guidance from other units of St. Clair County government. Specifically, representatives from the county's

Homeland Security Emergency Management (SCCHSEM) provided input and review of this Plan. St. Clair County citizens also provided input and guidance in the creation of the Plan. More information about public participation can be found in the Public Involvement chapter.

### ***Coordination***

Existing plans and programs were reviewed during the planning process. It should be underscored that this Plan does not replace other planning efforts such as the St. Clair County Master Plan, the Long-Range Transportation Plan, storm water management planning, or the Local Emergency Planning Committee (which focuses on hazardous materials). This Plan complements those efforts and builds on their recommendations.

Coordination is probably the most critical factor in a successful mitigation effort or program. Many state and local agencies (as well as some private sector organizations) are already performing functions or administering programs that in some way contribute to mitigation hazards. Examples of existing, ongoing activities that promote or can contribute to hazard mitigation include but are not limited to:

- Capital improvements planning
- Budgeting
- Site-specific hazardous material emergency planning (through local Emergency Planning Committees)
- Watershed management planning
- Solid waste management planning
- Local community planning and zoning activities
- Transportation planning
- Recreation planning
- Coastal zone management
- Infrastructure design, regulation and permitting
- Floodplain management
- Public facility design and construction review

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## ***Plan Components***

The community profile section of the Plan is based on the 2009 St. Clair County Master Plan and adapted for hazard mitigation purposes. Information contained within the community profile was compiled from a variety of sources including Census data, the state of Michigan, numerous county departments, and other planning documents including St. Clair County Data Book and the 2030 Long Range Transportation Plan.

The St. Clair County Homeland Security Emergency Management is authorized through federal, state, and local legislation to provide an emergency plan for the county and communities. The plan is a multi-hazard plan that addresses natural, technological and terrorism incidents. The primary responsibility is to provide for the safety of the residents and visitors within St. Clair County along with the neighboring communities. This is accomplished through a multi-hazard planning process that involves mitigation, preparation, response and recovery combined with a strong working relationship with all levels of government and the private sector. County officials and local leaders are required to act in the most prudent and efficient manner when called upon during emergency events. Coordinated events during past emergency situations have reduced the loss of life, property damage and the disruption of daily lives.

The Hazard Analysis and Vulnerability Assessment is based on materials provided by the Michigan State Police – Emergency Management Homeland Security, as well as information provided by each municipality, local, state, and federal agencies, schools, businesses, and non-profit organizations. The Hazard Mitigation Plan Steering Committee discussed each hazard and ranked them based on weighted factors.

Public involvement was critical to the development of this Plan. The Public Involvement chapter details how citizens and community officials were able to participate throughout the planning process. A variety of avenues were available for stakeholders to offer input and voice concerns regarding disasters in St. Clair County.

Mitigation goals and objectives were discussed during a meeting of the Hazard Mitigation Plan Steering Committee. The committee agreed on a preliminary set of goals and objectives, which were revised and enhanced after the public open houses.

In compiling an inventory of mitigation actions, the Hazard Mitigation Plan Steering Committee considered everything that could affect the impact of the hazards and reviewed a wide range of alternatives. Mitigation measures were explored and discussed over many committee meetings and were altered based on public input.

The implementation chapter outlines community-specific responsibilities in carrying out the mitigation strategies called for in this plan. County and local jurisdictions will be able to implement recommended action items through appropriate existing programs and procedures. Upon adoption of the plan, each jurisdiction can use the plan as a source of information on the hazards that could potentially impact their communities.

In looking at the county's capacity to address hazards, it is important to understand the structure of the county government and its various functions. The Capacity to Address Hazards chapter also examines emergency communications and notification systems within the county

The Plan Integration and Existing Planning Mechanisms chapter demonstrates the nexus between all-hazard planning and other planning mechanisms such as the comprehensive plan, the capital improvements program, the zoning ordinance, the subdivision ordinance, the building code, the landscape and maintenance code, and outreach opportunities.

The Plan Monitoring and Maintenance chapter describes the process that will make certain that the St. Clair County Hazard Mitigation Plan remains an active and relevant document.

Near the conclusion of the Plan is a brief directory of potential funding sources for hazard mitigation activities. Many of these sources are federal grant programs that are available to both urban and rural communities

**Mitigate** – To make less severe or harsh.

A hazard is a source of potential danger or cause of harm to people or property.

Mitigation is the action taken to reduce long-term risk, damage, and loss of life and property from a hazard event.

Planning is the act or process of making or carrying out plans.

## ***Concepts in Hazard Mitigation Planning***

The overarching target of any hazard mitigation effort is to reduce risk. Risk represents the possibility of suffering harm or loss. When it comes to hazard planning, risk can be defined as the potential for damages, losses and casualties arising from the impact of hazards. There are four main aspects of hazard mitigation planning: hazards, exposure, risk, and mitigation.

- **Hazards** are natural, technological, or man-made events that potentially may cause damages, losses or casualties. Hazards are generally set apart by their frequency and severity and by the geographic area that can potentially be impacted
- **Exposure** pertains to the extent and vulnerability of the built environment, such as utility lines or buildings, susceptible to one or more hazard events.
- **Risk** is the potential for damages, losses and casualties arising from the impact of hazards. It is the overall threat to the built environment.
- **Mitigation** is an effort intended to reduce the risk posed by hazards. Mitigation projects may be construction projects that physically reduce risk or they may be planning projects that “soften” the negative impacts of hazard events.

All of these aspects are interrelated. The extent of risk is wholly dependent on the frequency and severity of specific hazards combined with the value and vulnerability of the built environment and the location of the county’s population.

Following are five basic hazard mitigation strategies that can be utilized or reduce or prevent the harmful interaction between hazards, people, and development that results in a disaster:

## ***Strategies***

### **Strategy #1: Modification of the Hazard**

The first strategy involves modification of the hazard itself, which involves removing or eliminating the hazard, reducing its size or amount, or controlling the rate of release of the hazard. In the right circumstances, this strategy can be successful but it is often difficult to do. Examples of this strategy could include seeding, slope planting to prevent erosion, and stream widening or modification to improve water flow. These measures can be cost-effective, but their application is normally limited and therefore not always as effective as other strategies in reducing or eliminating damage on a wide scale.

### **Strategy #2: Segregating the Hazard**

Strategy number two, segregating the hazard, attempts to “keep the hazard away from people.” This is often accomplished in flood-prone areas through the construction of structural protection measures such as dams, levees, floodwalls, debris basins and other public works projects designed to redirect the impacts of a flood away from people and development. This strategy can be highly effective, but it can also be expensive and in some cases can cause (or exacerbate) environmental problems. Also, history has shown that structural protection measures constructed to protect one community often cause even greater problems in other

communities (e.g., levees that channel and increase the velocity of floodwaters, causing severe flooding downstream). Economics and limited effectiveness may make this a marginal strategy in many situations and locations.

### **Strategy #3: Preventing or Limiting Development**

The third strategy involves preventing or limiting development in locations where people and development would be at risk. This approach is based on “keeping the people away from the hazard” and includes a variety of land use planning and development regulation tools, such as comprehensive planning, zoning, floodplain management ordinances, capital improvements planning, disclosure laws, and acquisition and relocation of hazard prone properties. This approach attempts to reduce or eliminate community hazard vulnerability through wise and prudent land use and development decision-making. When properly applied, this strategy can be highly effective in promoting safe, sustainable development.

### **Strategy #4: Altering Design or Construction**

The fourth strategy involves alteration of the design or construction of development to make it less vulnerable to disaster damage. This strategy, commonly known as “interacting with the hazard,” allows the hazards to interact with human systems that have been designed and planned to withstand potentially destructive impacts. Examples of this strategy include elevating structures, employing wet and dry flood proofing to improve flood damage resistance, managing vegetation buffer zones in urban / wild land intermix areas, using wind bracing to improve wind damage resistance, and insulating water and sewer lines to prevent ground freeze damage. This strategy allows development in hazard prone areas, but requires that the development meet stringent disaster resistant performance criteria. In many situations, this approach balances the dual needs of enhancing a community’s economic base while at the same time reducing community hazard vulnerability. History has shown that the two goals are not mutually exclusive. When careful and prudent, development decisions are made that take into account hazard vulnerability reduction, safe and sustainable community development results.

### **Strategy #5: Early Warning and Public Education**

This strategy seeks to ensure that the public is aware of the hazards it faces, and that proper warning and communication systems and practices are in place to save lives and protect property. This strategy should be applied in all communities, as it is typically the last line of defense against serious disaster related injury or loss of life.