

2009
Polk County
Multi-Jurisdictional Hazard Mitigation Plan
Executive Summary

Public Version

Introduction

As the cost of disasters continues to rise, it becomes more and more evident that pre-disaster steps must be taken to reduce the damage that impacts the communities we live in. This strategy is known as mitigation. Mitigation actions are predicated on analysis of hazards and assessments of the risks they pose to property and populations. The result is a better understanding of hazards, knowledge of the impacts the hazard could have on the community, and a prioritized list of which projects will provide cost-effective hazard mitigation to the community. This section provides a summary and overview of the Polk County Multi-Jurisdictional Hazard Mitigation Plan.

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- 1.1 Overview
- 1.2 Hazards and Risks
- 1.3 Goals, Objectives, and Actions
- 1.4 Planning Process
- 1.5 Adoption and Approval
- 1.6 Plan Implementation and Maintenance

Section 1.1: Overview

“Hazard mitigation” is defined as any action taken to eliminate or reduce the long-term risk to human life, property, and the environment posed by natural hazards, human-caused accidents, and human-caused purposeful incidents. The Polk County Emergency Management Commission (PC EMC) and the 17 participating municipalities (including unincorporated parts of the county) decided to develop this Multi-Jurisdictional Hazard Mitigation Plan (“the Plan”) because of increasing awareness that natural hazards, especially flood and wind, have the potential to affect people, physical assets and operations within Polk County.

Participating jurisdictions in the Plan are as follows:

- Alleman
- Altoona
- Ankeny
- Bondurant
- Clive
- Des Moines
- Elkhart
- Grimes
- Johnston
- Mitchellville
- Pleasant Hill
- Polk City
- Polk County (unincorporated)
- Runnells
- Urbandale
- West Des Moines
- Windsor Heights

Public school districts in Polk County have participated in this Plan effort under the aegis of the participating municipalities, and will apply for mitigation funds, as appropriate, via those participating jurisdictions. The communities of Granger, Norwalk, and Sheldahl opted not to participate.

A realistic plan can be developed through a highly valuable planning process that will reduce risk to the county, its residents and businesses, and public and private property. The process has several benefits.

- It can bring people together before the event occurs to discuss various scenarios and allows for the establishment and growth of relationships before the event occurs.
- It supports and contributes to other valuable planning efforts in the county.
- It assures eligibility to access federal and state disaster recovery grants in advance of any Presidentially-declared disasters, including Pre-Disaster Mitigation (PDM) grants, Flood Mitigation Assistance (FMA) grants, Severe Repetitive Loss (SRL) grants, and Repetitive Flood Claim (RFC) grants.
- It assures eligibility to access federal and state disaster recovery grants following Presidentially-declared disasters including Hazard Mitigation Grant Program (HMGP) funding.
- It situates the municipality in a positive position to access other funding sources such as community and economic development grants.
- The process serves as an educational experience for committee members and citizens on the potential hazards and what the community can do to mitigate their affects.

Federal and State Requirements

On October 30, 2000, President Bill Clinton signed into law the U.S. Disaster Mitigation Act of 2000 (DMA 2000). Among its other features, DMA 2000 established a requirement that in order to remain eligible for federal disaster assistance and grant funds, local and state governments must develop and adopt hazard mitigation plans.

On February 26, 2002, the Federal Emergency Management Agency (FEMA) published an Interim Final Rule (IFR) that set forth the guidance and regulations under which such plans are supposed to be developed. The IFR provides detailed descriptions of both the planning process that states and localities are required to observe and the contents of the plan that emerges. This Plan responds to those requirements, and also lists them at the opening of each section of the Plan.

Iowa Administrative Code Section 605, Chapter 7: Local Emergency Management states the following in regard to DMA 2000-compliant hazard mitigation plans:

The Plan shall establish interim and long-term strategies to eliminate hazards or to reduce the impact of those hazards that cannot be eliminated. In order to qualify for federal funding for mitigation assistance, the eligible applicant must comply with the mitigation planning requirements set forth in 44 CFR (Code of Federal Regulations) 206, Subpart M, and the Iowa Hazard Mitigation Grant Program Administrative Plan, as appropriate.

Counties and municipalities employ their own internal resources and may also seek professional consulting services to design, facilitate, and develop hazard mitigation plans. These jurisdictions appoint a local hazard mitigation Steering Committee to discuss hazards, identify strategies, and submit their plan to City Council/Board of Supervisors. Adoption by the controlling City Council/Board of Supervisors, in addition to approval from FEMA Region VII, is required for the Plan to be in force and in compliance with FEMA requirements for any given jurisdiction. Documentation that the Plan has been adopted by the proper authority(ies) is required as part of the Plan (see Appendix E).

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Organization of the Plan

The purpose of a mitigation plan is to rationalize the process of determining appropriate hazard mitigation actions. The document includes a detailed characterization of natural hazards in Polk County; a risk assessment that describes potential losses to physical assets, people and operations; a set of goals, objectives, strategies and actions that will guide Polk County mitigation activities, and a detailed plan for implementing and monitoring the Plan.

The Plan has six sections, as shown below.

- Table of Contents
- Section 1: Executive Summary
- Section 2: Planning Process, Adoption, and Approval
- Section 3: Community Profile
- Section 4: Hazard Identification and Risk Assessment
- Section 5: Mitigation Action Plan
- Section 6: Plan Monitoring and Maintenance
- Appendices

Section 1.2: Hazards and Risks

Section 4 of this Plan includes detailed descriptions of the process that was used to assess and prioritize Polk County risks from natural hazards, quantitative risk assessments for Polk County as a whole, and more detailed assessments for certain asset classes.

The hazard identification and risk assessment process included:

- Research and documentation of the characteristics of the county such as the climate, employment and labor, geography, housing, population, transportation, and utilities (documented in Section 3: Community Profile).
- Generation of a list by the PC EMC and local Steering Committees of twenty-six potential hazards that could occur in the community (see below). Hazards identified were put into one of three categories: “natural” (for example, summer and winter storms, tornadoes, and flooding), “technological” human-caused incidents (for example, hazardous material incidents, explosion, dam or levee structural failures), and “other” human-caused, epidemiological, or purposeful acts (for example, disease and terrorist acts).
- Detailed and systematic evaluation of each of the hazards. Each hazard was defined and described according to the following metrics: historical occurrence; probability of reoccurrence; vulnerability of population; maximum geographic extent of the hazard; the severity of impact in terms of people, property, and infrastructure; and the amount of warning time available. Also considered was the fact that these hazards often do not occur independently of one another, so the PC EMC and local Steering Committees accounted for the “cascading” potential of hazards (for example, a tornado could result in a structural failure).
- For the purposes of this Plan and consistency with FEMA grant program priorities, natural hazards were selected as top priorities. Additionally, hazards such as dam and levee failure that can be mitigated using means similar to those for natural hazards were selected for further analysis.
- Each natural hazard was then assigned an overall ranking on a countywide basis. Each local Steering Committee then also reviewed the prioritization and made a final determination of hazard priorities for each municipality. Across all municipalities, eight hazards were identified as being the highest priority natural hazards (see below).

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- A risk assessment was then developed for the eight top priority hazards. “Risk” is a numerical representation of potential future damages. Based on the best data available, these damages may be expressed in number of structures exposed, land area exposed, or – where sufficient data exists – monetized, annualized damages.
- Through the planning process, there was an examination of existing programs developed to reduce the impact of the most relevant hazards. The PC EMC and local Steering Committees will also identify additional programs and projects and evaluated them in light of social, technical, administrative, political, legal, economic, and environmental concerns.
- Mitigation goals, objectives, and actions (see Section 5) are correlated to each municipality’s high-priority hazards as identified in Section 4.

The twenty-seven hazards initially identified and profiled by the PC EMC and the local Steering Committees included:

- Natural:
 - Drought
 - Earthquake
 - Erosion, landslide, subsidence
 - Extreme heat
 - Fire (urban and wildfire)
 - Flooding
 - Summer storms
 - Tornado
 - Wind storms
 - Winter storm/blizzard
- Technological:
 - Air transportation incident
 - Communications Failure
 - Dam Failure
 - Energy shortage
 - Explosion
 - Hazardous substance incident
 - Highway incident
 - Levee Failure
 - Power failure
 - Radiological incident
 - Railway incident
 - Structural failure
 - Underground pipeline incident
- Other:
 - Waterway incident
 - Disease or epidemic
 - Enemy attack or war
 - Public disorder

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Of these, the following natural hazards were identified as the most significant for Polk County. In some cases, these below hazards represent combinations of the above identified hazards.

- Floods (including flash and riverine)
- Fire (including wildfire, rural and urban fires)
- Thunderstorms (including lightning and hail)
- Tornado
- Windstorms
- Levee Failure
- Dam Failure
- Snow Storms

For each of these eight high priority natural hazards, the risk assessments consider and present:

- Hazard profile/description
- Historical Occurrence
- Probability of Recurrence
- Vulnerability of Population
- Geographical Extent
- Severity
- Speed of Onset
- Impact

Finally, based on the outcomes of the above analyses, the top countywide natural hazards were ranked – in varying orders, depending on municipality – by priority by the PC EMC and the local Steering Committees.

Section 1.3: Goals, Objectives and Actions

Section 5 of this Plan describes Polk County’s countywide hazard mitigation goals, objectives, and actions (see Table 5.3-1), as well as priorities for municipality-specific mitigation actions (see Table 5.3-2). Each countywide or municipal goal, objective, or action describes the hazards addressed, action priority, funding required, sources of funding, responsible agency, and the timing of the action.

Goals

Goals are broad guidelines that describe what Polk County hopes to achieve. Goals are expressed as expansive policy statements representing desired long-term results. Polk County mitigation planning goals include:

- Protect the public health, safety and welfare by increasing public awareness of hazards and by encouraging collective and individual responsibility for mitigating hazard risks.
- Improve capabilities, coordination, and opportunities at municipal and county levels to plan and implement hazard mitigation projects, programs, and activities.
- Improve data collection, use, and sharing to reduce the impact of hazards.
- Protect the most vulnerable populations, buildings, and critical facilities through the implementation of cost-effective and technically feasible mitigation actions.

Objectives

Objectives are well-defined intermediate points in the process of achieving goals. (The term “objectives” is generally coterminous and interchangeable with “strategies.”) They have concrete outcomes that can be evaluated. A representative and illustrative sampling Polk County mitigation planning objectives include (but are not limited to) the following:

- Improve public awareness of hazard risks by distributing the Plan. The Plan will be available for review at the Administration Building, Emergency Management Agency (EMA) Office, public libraries, and online.
- Promote the use of National Oceanic and Atmospheric Administration (NOAA) weather radio for severe weather advisories, watches, and warnings as well as other emergencies.
- Conduct community outreach, workshops, and training to increase National Flood Insurance program (NFIP) participation.
- Conduct assessment of public safety, including auxiliary power capacity, recovery capabilities, and continuity of operations/ government plans.
- Develop a database inventory of critical facilities (county-, local-, and privately-owned), including fire and police stations, medical facilities, and major public buildings important for emergency response and recovery, and critical lifeline transportation and utility nodes such as bridges, water treatment plants, wastewater treatment plants, high voltage electric substations, and hazardous materials facilities.
- Develop and maintain relationships with organizations that can provide technical information and/or assistance in the areas of hazard identification and risk assessment.

Actions

Action items are the specific steps (projects, policies, and programs) that advance a given objective. They have concrete outcomes that can be evaluated, typically in terms of a simple assessment of whether the action is “completed” or “not completed.” A representative and illustrative sampling of Polk County mitigation planning objectives include (but are not limited to) the following:

- Conduct Needs Analysis and Feasibility Study for Safe Rooms at Central Elementary and North Polk Jr./Sr. High School (Alleman)
- New Roof for Altoona Fire Station, which has Flat Roof (Altoona)
- Sanitary Sewer Capacity Improvements SE Area Relief Sewer (Ankeny)
- Generators for Sewer Lift Stations: Grant, Mallard, COVE, 32nd St, 2nd St, Lagoon-Main Lift Station (Bondurant)
- Construction of 3 Regional Storm Water Detention Facilities at: 100 St. and Indian Hills; 156th St. and Hickman Rd.; Douglas Rd. and Berkshire Rd. (Clive)

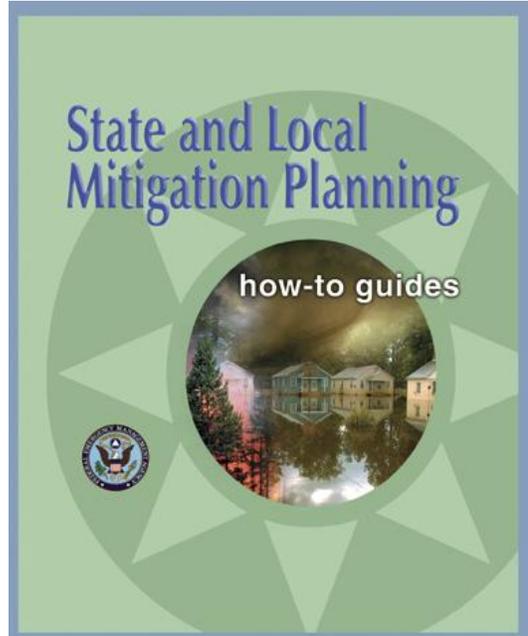
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- Inventory, evaluation and repair of flood gates located in river levees throughout the City (Des Moines)
- Generator at City Water Plant (Elkhart)
- Elevate bridge on North James St, north of wastewater treatment plant (Grimes)
- Conduct Flood Impact Study on Merle Hay and Beaver Creek Area (Johnston)
- Improve ditch and culvert drainage in NW part of town (Mitchellville)
- Creation of Storm Water Utility (with taxing and bonding authority) (Pleasant Hill)
- Structural enhancements to Mile Long Bridge (Polk City)
- Elevation of Driving Surface and Creation of Drainage System for NW 66th Ave. Over Des Moines River (Polk County)
- Development of New Lagoon at Sewer Station to Mitigate Overflow in High Rains (Runnells)
- Walker Johnson Park Creek bank stabilization (Urbandale)
- Backup Power Generators Replacements: Public Works Facility; Fire Station 22; Fire Station 21; Law Enforcement Center (West Des Moines)
- Harden City Hall to meet FEMA 361 Community Shelter Specifications (Windsor Heights)

Section 1.4: Planning Process

Section 2 provides details about the process that was used to develop this Plan. The process closely followed the guidance in the FEMA 386 series of planning guidance, which recommend a four-step process for developing mitigation plans.

- **Step 1:** organizing resources, is described in Section 2: Planning Process. The section includes details about who was involved, the processes that were used to establish leadership and advisory groups, and public and other outreach and involvement efforts.
- **Step 2:** the risk assessment, was completed by PC EMC and the local Steering Committees. The Risk Assessment is in Section 4 of the Plan, and is accompanied by a Hazard Identification.
- **Step 3:** development of the Mitigation Plan is described in Section 2: Planning Process, and Section 5: Mitigation Action Plan. As noted above, Section 2 includes details about the planning process while Section 5 includes specific details about the identification and development of mitigation goals, objectives, and actions based upon Section 4: Hazard Identification and Risk Assessment).
- **Step 4:** implementing the Plan, is described in Section 5: Mitigation Action Plan, which includes details about who is responsible for implementation of specific strategies and actions; and in Section 6: Plan Monitoring and Maintenance, which describes long term implementation through periodic updates and reviews.



Section 1.5: Adoption and Approval

The PC EMC approved this Plan on May 20, 2009. Following adoption, the Plan was submitted to FEMA Region VII on June 4, 2009. FEMA reviewed and approved the Plan. Subsequently, the participating municipalities also adopted the Plan, submitted their adoption resolutions to FEMA and received their own approval notifications.

Section 1.6: Plan Implementation and Maintenance

The implementation process is described as part of the specific actions in the Mitigation Action Plan in Section 5.

A plan maintenance process is established in Section 6 that includes:

- a method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle,
- a process by which local governments incorporate the plan into other planning mechanisms such as comprehensive or capital improvement plans when appropriate, and
- a discussion on how the community will continue public participation in the plan maintenance process.

The PC EMC and local Steering Committees have established that the plan is a “living” document. It will be used, supported, and kept current to reflect the community’s goal of protecting lives and property.

Section 6: Plan Monitoring and Maintenance further describes the schedule and procedures for ensuring that the Plan stays current. The section identifies when the Plan must be updated, who is responsible for monitoring the Plan and ensuring that the update procedures are implemented. This section provides a combination of cyclical dates (oriented toward FEMA requirements) and triggering events that will initiate amendments and updates to the Plan. The PC OEM is responsible for monitoring the Plan and initiating the cyclical update process.

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Summary

It is hoped that this public version plan will provide the reader with an understanding of Polk County Emergency Management Agency and participating agencies' roles in mitigation efforts.

The Multi-Jurisdictional Hazard Mitigation Plan Public Version was developed for public distribution and excludes specific information that is protected from disclosure under the Freedom of Information Act (FOIA) and similar State and local disclosure laws, and from use in civil litigation and regulatory actions.

Access to the full plan is restricted and contains Security Sensitive Information that is For Official Use Only.