

CHAPTER 6: HAZARDS



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6.1 Introduction

The City of Decorah Hazard Mitigation Plan Update was officially adopted, per resolution of the Decorah City Council, on April 5, 2010. Upper Explorerland Regional Planning Commission assisted the city in the preparation of the document after a grant funded from the Federal Emergency Management Agency and Iowa Homeland Security and Management Division was secured. Decorah Community School District, Jackson Junction, Spillville, Fort Atkinson, Calmar, Ossian, Castalia, Ridgeway, and the unincorporated areas were all a part of the Hazard Mitigation plan. The plan makes an objective analysis of what hazards present a risk to the community, records what mitigation measures have been historically implemented to combat those risks, and finally lays out a number of action steps that could be pursued in order to make the city a safer place to live, work, and visit.

6.2 Flooding

The Upper Iowa River has a profound impact on development in Decorah. Specifically, development in the floodways, as designated by the Federal Emergency Management Agency (FEMA), is prohibited. Figure 12 is a FEMA created Digital Flood Insurance Map (DFIRM). Decorah has experienced severe flooding from the Upper Iowa River resulting in property damage to homes and businesses. The four largest floods on the Upper Iowa River at Decorah occurred in 1941, 1961, 1993 and 2008, for which the estimated peak discharges were 27,200 cubic feet per second (ft³/s), 20,200 ft³/s, 20,500 ft³/s, and 34,100 ft³/s respectively.

6.3 Flood Control

The primary system of flood control in the city is from the U.S. Army Corps of Engineers (USACE) Dry Run Flood Control project. Additional locally constructed levees include those along Valley View Drive and Luther College.

The existing USACE project was authorized by the Flood Control Act approved June 22, 1936, and modified by the Flood Control Act approved August 18, 1941. The project provides for diversion of Dry Run into the Upper Iowa River by means of an earth dike across Dry Run one mile southwest of Decorah and a diversion channel 3,200 feet in length through high ground to the Upper Iowa River in Decorah (locally known as “The Cut”). The project was designed to provide protection for areas within the city limits of Decorah against the maximum probable flood on Dry Run and against a flood on the Upper Iowa River equivalent to about twice the maximum flood of record. The project was completed on December 9, 1950 and turned over to local interests on January 12, 1951.

Surface drainage, from the various sub-drainage areas in the city, is conveyed through the levees by a system of culverts. The culverts vary in size from 30-inch to 84-inch diameter pipes. All the culverts have flap gates to prevent high flood water from the Upper Iowa River backing into the protected interior areas of Decorah.

In the 1977 study report, the USACE proposed to improve the interior drainage by identifying areas of backwater flooding, and establishing easements near the levee, by providing sluice gates at all outlets to the river, and by providing three pumping stations at central locations along the levee. Three pumping stations, the Dry Run pumping station, the Roberts Lake pumping station, and the Ice Cave Road pumping station were recommended to pump accumulated backwater over the levee when the flap gates are closed during periods of flooding on the Upper Iowa River. The proposed improvements were not implemented due to USACE Benefit Cost Analysis and lack of funding.

During the prior planning period at least two major flood events occurred including the new record flood of 2008, exceeding the previous record flood of 1941. Other significant local, state and national flood events resulted in many changes related to the Decorah Flood Control System.

Included among these are a more comprehensive levee safety and inspection program administered through the USACE, remapping of 100 year and 500 year flood plains by FEMA, a USGS Flood Plain Study initiated by the city, and an extensive evaluation of current levee conditions through a Levee Accreditation Study conducted by the city and consultants as required by FEMA.

In addition to this the city joined the National Flood Insurance Program (NFIP) in 2008.

6.2 Hazards Summary

Flooding is the primary hazard for the City of Decorah, and significant effort has been put forth recently to improve Decorah’s preparedness in the event of another major flood. Additional hazards of concern are tornados, winter storms, and other severe weather events.

6.3 Hazards Policies

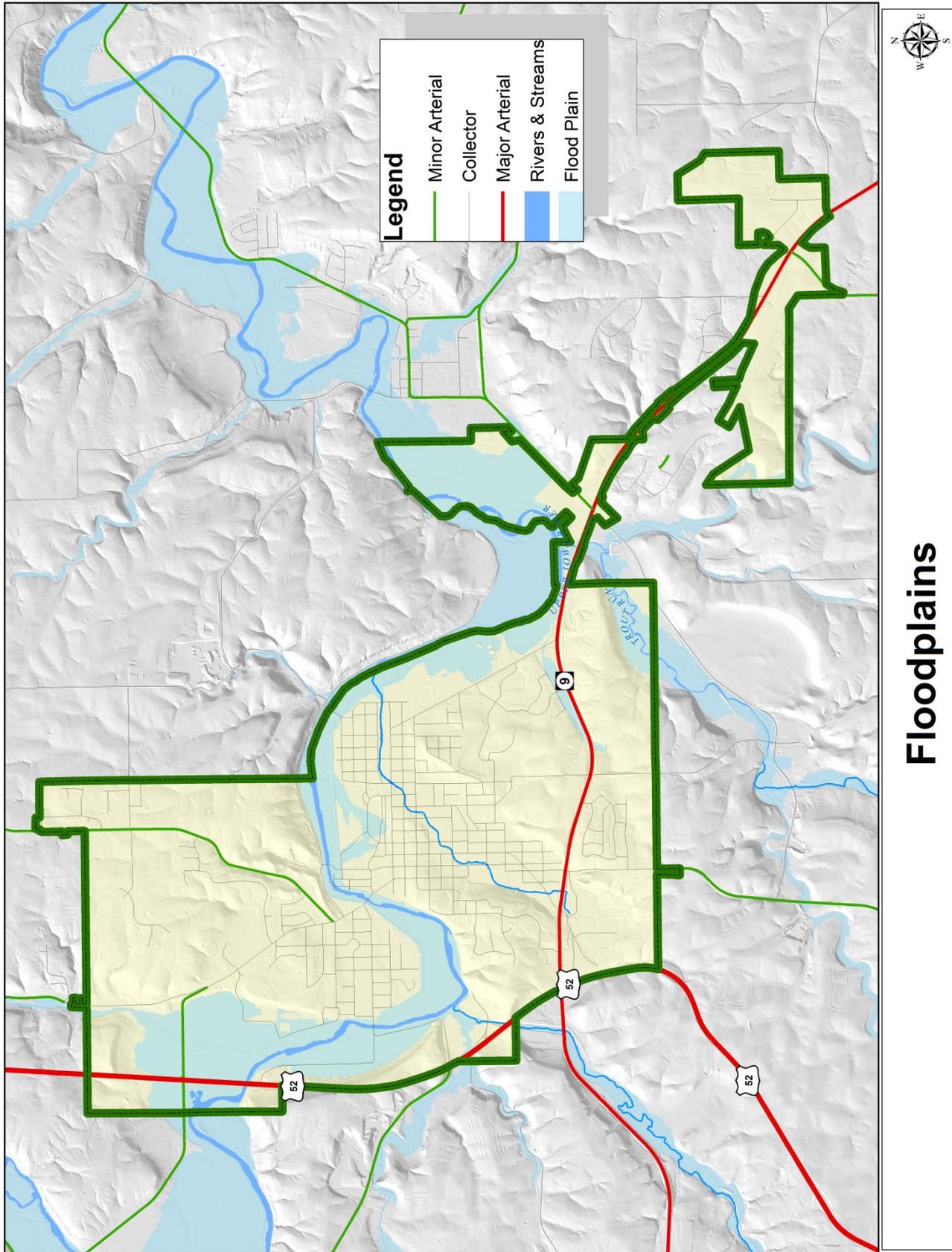
- The protection of the floodplains of the Upper Iowa River, Dry Run, Trout Run Creek and other tributary stream channels, and embankments from incompatible development will be given high priority.
- Storm drainage easements for Dry Run and other drainage channels and storm sewers should be established.
- An ordinance more restrictive than the requirements of the NFIP should be considered that addresses development within established flood limits. This ordinance should be established using the City's accepted flood map. Full or partial prohibition should be considered for development in wetland and flood limit areas.

The Hazard Policies below are taken from the Mitigation Action Worksheets, Winneshiek County, 2011. The Mitigation Action Worksheets are available in full in the Winneshiek County Comprehensive Plan.

- Establish and maintain well-equipped and well-trained emergency response capabilities with active partnerships
- Provide increased flood mitigation efforts and enhancements, including levees
- Purchase, install, upgrade, and maintain warning and alert notification equipment and/or system(s)
- Purchase, upgrade, maintain and implement compatible regional interoperable portable mobile communications systems
- Develop, upgrade, enhance, and protect infrastructure, and/or critical facilities
- Purchase and install generator(s) and additional power supply equipment
- Encourage pre-disaster planning, providing awareness and education of hazards to the public and potential resources for assistance
- Create and maintain a communication network for rainfall and flood gauge reporting along water sources
- Establish and stock community shelter location(s), designing and constructing if [additional] site(s) sought
- Develop and enhance technology resources
- Construct and stock FEMA-compliant tornado safe room(s)

- Develop, implement, and keep current city, county, school, fire station, and other regional planning documents; maximize code/ordinance enhancement and enforcement
- Purchase, install, maintain, and upgrade fiber optic cable, equipment and related technology to allow for reliable movement of communication and data
- Promote Winneshiek County Multi-Jurisdiction (MJ-9) Multi-Hazard Mitigation Plan to the public
- Provide increased awareness to National Flood Insurance Program (NFIP) participation, encouraging [continued] participation
- Develop and construct safer routes for all traffic modes including, the education of residents on the maximization of these routes
- Acquisition and demolition of damaged structure(s) and property
- Evaluate sinkholes through engineering studies and implement appropriate safety protocols

Figure 12: Floodplains



Floodplains