

Chapter 20

RECOMMENDED MITIGATION ACTIONS

The following mitigation actions propose direction for implementing the concepts of this document over the next five years. Each is an area of concern within the County of Marquette that should be mitigated or corrected to prevent future damage or loss of property due to flooding. The actions are listed according to need. Need was determined from responses by local units of government and awareness from information exchanged at meetings listed in Chapter 1.

Cost-benefit review of potential projects will take place at implementation. Costs will include money provided both locally and through grants by FEMA, the State of Michigan, and other sources. Costs will also include opportunity costs, or the value of alternatives forgone to achieve the mitigation activity. Benefits will include reductions in:

- Loss of life, injury and pain
- Property destruction and damage
- Community and infrastructure disruption
- Interruption of business
- Loss of culturally and historically important items
- Money spent on disaster relief

Benefits also include increased public awareness of hazards in the community, leading to better decisions.

1. Storm Sewer Separation (City of Ishpeming)

Description of problem: An area in the City of Ishpeming exists where storm and sanitary sewers are still combined, creating problems during periods of high run off. The problem exists in the Eighth Addition/Palms Book area adjacent to US-41

Description of Action: Project includes the separation of storm and sanitary, new culverts and rebuilding of catch basin.

Lead Manager Assigned: City Manager

Schedule to Initiate Action: upon approval of plan

Potential Sources of Technical Assistance: State Hazard Mitigation Program, State NFIP Program.

Potential Sources of Financial Assistance: FMA, USDA Rural Development

2. Stormwater Maintenance (Ishpeming Township)

Description of problem: Clear cutting and sand erosion from mismanaged development has caused poor drainage systems that have affected some residents with runoff from other properties.

Description of Action: Ishpeming Township should be encouraged to develop a storm water management plan. They should also be encouraged to adopt “Site Plan review” procedures for all future development that includes a review by the Marquette County Drain Commissioner.

Lead Manager Assigned: Township Supervisor

Schedule to Initiate Action: During the next Marquette County Planning Commission review of a proposed rezoning in Ishpeming Township.

Potential Sources of Technical Assistance: Marquette County Resource Management and Development, Marquette County Drain Commissioner.

Potential Sources of Financial Assistance: Ishpeming Township General Fund

3. Creation of True Drain System (Forsyth Township)

Description of problem: There are no storm drains on the western part of the community. There are a number of old catch basins that detain water but are not connected to a true drain system.

Description of Action: Create a true drain system for Forsyth Township

Lead Manager Assigned: Township Supervisor

Potential Sources of Technical Assistance: State Hazard Mitigation Program, State NFIP Program.

Potential Sources of Financial Assistance: FMA, USDA Rural Development

4. Mitigate Flooding of the Chocolay and Carp Rivers (Chocolay Township)

Description of problem: Ice blows in a blocks discharge, causing flooding events upriver.

Description of Action: Remodel mouth of Chocolay River to allow enhanced flow of water into Lake Superior.

Lead Manager Assigned: Township Supervisor or special flood mitigation specialist

Schedule to Initiate Action: Submit request within 30-days of plan adoption

Potential Sources of Technical Assistance: State Hazard Mitigation Program, DEQ/Land and Water Division

Potential Sources of Financial Assistance: Request that the State Division of Emergency Management provide funding to the DEQ under the Technical Assistance provisions of the FMA program.

5. Elevate homes along Compeau Creek within the Middle Island Point Campers Association (Marquette Township)

Description of problem: Homes adjacent to the creek in the Middle Island Point Association receive flooding. One home has been elevated so far.

Description of Action: Elevation of insured residential structures in accordance with 44 CFR 60.3, Flood plain management criteria for flood-prone areas.

Lead Manager Assigned: Township Supervisor

Potential Sources of Technical Assistance: State Hazard Mitigation Program, State NFIP Program

Potential Sources of Financial Assistance: FMA

6. Remove the Carp Intake Dam (#158) north of Lindberg's gravel Pit on CR 480 (Sands Township)

Description of problem: There is a concrete abutment with a 30-foot drop that collects trees and debris causing a back up of water and flooding.

Description of Action: Project includes the removal of Carp Intake Dam #158

Lead Manager Assigned: Township Supervisor

Schedule to Initiate Action: Submit a written request 90 days

Potential Sources of Technical Assistance: State Hazard Mitigation Program, State NFIP Program, Michigan Department of Natural Resources

Potential Sources of Financial Assistance: Request MDNR to remove the DAM.

7. Lake Independence Dam (Powell Township)

Description of problem: The dam on Lake Independence is no longer used to generate power and is now used to protect the land value along the edge of the impoundment. The soil that surrounds the lake is saturated. Many homes have been flooded. Also, the CR 550 bridge acts as a second dam but the soil around the bridge is saturated and because of pressure from the water (i.e. flash flooding) could make the bridge unstable.

Description of Action: Work with the Drain Commission to determine the usefulness of the Dam and Mitigate pressure on the bridge.

Lead Manager Assigned: Drain Commissioner

Potential Sources of Technical Assistance: State Hazard Mitigation Program

Potential Sources of Financial Assistance: not needed

8. Whetstone Brook (City of Marquette)

Description of problem: A large detention area has been created between the US-41/M-28 Bypass and the City of Marquette Service Center. Development has been occurring in the basin. High storm water could be a problem in the future. Concern was expressed that any blockage of runoff at an inlet to the creek would result in flooding of the Front Street (City of Marquette) and US41&M-28 Bypass intersection and adjoining highways.

Description of Action: The drainage basin has had flooding problems in the past. Whetstone Creek/Brook drainage district was created in March 1982. Consideration is being given to opening the mouth of the brook. Returning the lower portion of the brook to its natural state is part of the City's Lower Harbor Development Plan.

Lead Manager Assigned: County Drain Commissioner

Potential Sources of Technical Assistance: Drain Commission, DEQ watershed management plan

Potential Sources of Financial Assistance: State Hazard Mitigation Program

9. Urban Flooding in Marquette City and Township:

Description of Problem: Most citizens are not aware of what can cause a drainage problem, which leads to property flooding. The most common form of urban flooding is water topping curbs. Improperly designed curb cuts can also channel water along driveways, funneling it into garages and basements. In some instances, the back up of water could be the result of the height of catch basins or the grade of the adjacent street. In others, it could be due to volume

exceeding the capacity due to addition of impervious surfaces after construction of the system or elimination of a natural detention area.

Description of Action: The homeowners need to be educated about placing leaves in the ditches. This action reduces their efficiency. Possibilities for public awareness campaigns include intervention by the county and city authorities to implement mandatory ditch cleansing. Try to implement better building codes for driveway construction. There also needs to be a Storm Water Management Ordinance.

Lead Manager Assigned: Marquette County Emergency Management

Schedule to Initiate Action: Following adoption of the plan

Potential Sources of Technical Assistance: Drain Commission, DEQ, Marquette County Resource Management and Development, Marquette County Roads Commission

Potential Sources of Financial Assistance: None

10. Cliff's Seventh Addition Subdivision (City of Ishpeming)

Description of Problem: In 1985 and in 2002 there were many basement flooded in Cliff's Seventh Addition subdivision.

Description of Action: Creek dredging and better maintenance of railroad ditches and culverts and separation of storm and sanitary sewers are recommended to alleviate this problem.

Lead Manger Assigned: Ishpeming City Manager

Potential Sources of Technical Assistance: State Hazard Mitigation Program, State NFIP Program, and Michigan Storm Water-Flood Plain Association

Potential Sources of Financial Assistance: City of Ishpeming