AMENDMENT

Amending the approved 2012 Hazard Mitigation Plan

October 15, 2014

Section 1
PLAN, BACKGROUND, AND PURPOSE

1.1 Overview
The Carver County Multijurisdictional Hazard Mitigation Plan (HMP) as written fulfills the requirements of the Disaster Mitigation Act of 2000, which is administered by the Federal Emergency Management Agency (FEMA). The act requires all Hazard Mitigation Plans be updated every five years. This is an amendment to the approved 2012 Hazard Mitigation Plan.

This amendment is being put together because of the June 2014 rainfall we encountered in a short period of time. The rainfall covered the entire county and ranged from 9.26 inches to 13.65 inches. Most of this rain fell within a couple of days. Carver County had areas with road wash-outs, bridge wash-outs and culvert damage.

1.4 Purpose
The purpose of this amendment is to identify risk and vulnerability to Carver County and to formulate a plan of action to reduce damage and loss of life from these natural disasters. This amendment shall serve as a benchmark for future mitigation activities and will identify mitigation goals and objectives for Carver County and its cities and townships.

Realizing that identifying our community's risk and working collectively toward the prevention of disaster in our community is in everyone's best interest, Carver County Emergency Management has taken the lead on this amendment.

Section 4
RISK AND VULNERABILITY ASSESSMENT

4.1 Update to the Risk and Vulnerability Assessment
There has been one significant event since the approval of the May 2012 Hazard Mitigation Plan. In this event, we had rain over the entire county which ranged from 9.26 inches to 13.65 inches. The deluge of rain happened in June of 2014, which lead to saturated soils, soil erosion, and flooding throughout the county.

Flooding is identified in the HMP but does not identify landslides/slope failure, property acquisitions/structure relocation, water supply/wastewater treatment, and bridge/culvert replacement, specifically. All four of these areas are identified in the amendment.

- Landslide/Slope Failure – the rainfall event saturated the soils in Carver County to the point that hill sides, Creek banks, and river banks were weakened. The slopes and the soils started to fall. Some of these slope failures impacted homes, trails, and water ways.

- Property Acquisition/Structure Relocation – this is something that we did not have in our HMP from the beginning. This was brought to light when we had a slope failure impact a home in Chanhassen. The property owner lost approximately 65 feet of earth when the slope near the property failed and continues to deteriorate at a slower rate each time it rains.

- Water Supply/Wastewater Treatment – The June 2014 rainfall impacted the Norwood Young America (NYA) wastewater treatment facility shutting it down for days. The water runoff from the rain filled the ditch next to the treatment plane which backed up onto the property. The City tried to sandbag the facility but could not keep up with the rising water. One building had water covering pumps and electric-powered circuitry. The depth of water was estimated at 13 feet deep. Another building had approximately 6 feet of water, covering pumps and electric-powered circuitry.

  The other City impacted was Mayer. The City of Mayer found sanitary storm sewer manholes that were submerged in water for several days. This created inflow & infiltration issues for the wastewater treatment facility. The high wastewater alarms started to sound in several lift stations along with the plant itself. The wastewater treatment facility started to flood so the City had to go into by-pass to save the wastewater treatment facility from totally flooding out.

- Bridges/Culverts – The June 2014 rainfall impacted several bridges and culverts through-out Carver County. Some of these bridge repairs/replacements and culvert replacements are not being covered by the disaster declaration. One culvert in Watertown Township is not being covered but sustained enough damage that the weight limits had to be reduced. This is an old wood box culvert with a roadway above. The township would like to see this replaced with a new culvert so traffic can resume at normal weights.

4.2 Risk and Vulnerability Assessment Process

The following natural and technological hazards were identified in the amendment:

- Landslides/Slope Failure
- Property Acquisitions/Structure Relocation
- Water Supply/Wastewater Treatment
- Bridges/Culverts

4.3.6 Landslide/Slope Failure

Hazard Identification
Landslide/Slope Failure is the downward falling or sliding of a mass of soil/earth from a steep slope.

Hazard Profile
Data on the probability and frequency of occurrence of landslide/slope failure is limited with recent research. Carver County experienced its worst landslide/slope failure in June of 2014 when we had several inches of rain. This rain saturated the soil which made the slopes unstable.

Assets Exposed to Hazard

- **Property Risk/Vulnerability:** Landslide/Slope Failure in this event has affected approximately 11 properties that we have been made aware of. The Cities affected by these Landslide/Slope Failures are the Cities of Carver, Chaska and Chanhassen. The structures on these properties are in danger of earth moving across the structure or the earth moving away from the structure.
- **People Risk/Vulnerability:** In evaluating vulnerability of the population in Carver County the risk/vulnerability includes the entire population since there is no way to determine the impact/magnitude of a landslide/slope failure.
- **Environmental Risk/Vulnerability:** Risks to the environment are high when rain falls at a fast rate in a short period of time. The soil saturation could lead to soil erosion, which could mean the loss of vegetation and change of water ways.

4.3.7 Property Acquisitions/Structure Relocation

Hazard Identification
Property acquisition and structure relocation projects involve the voluntary physical relocation of an existing structure to an area outside of a hazard-prone area and, typically, the acquisition of the underlying land. Relocation must conform to all applicable State and local regulations. The property must be deed-restricted in perpetuity to open space uses to restore and/or conserve the natural floodplain function.

Hazard Profile
The approved HMP from May 2012 does briefly talk about prioritizing properties for reconstruction and/or acquisition/removal. This is found under 4.3.3 flooding, at the bottom of page 4.35. The sentence does not talk about relocation of structures, so we wanted to add this as a viable option.

Assets Exposed to Hazard

- **Property Risk/Vulnerability:** Property Acquisition/Structure Relocation has affected one home in the City of Chanhassen adjacent to a landslide/slope failure from the June 2014 rains/flooding. We have added this hazard to the Hazard Mitigation Plan for future structures that are impacted by flood plain changes or landslides/slope failures.
- **People Risk/Vulnerability:** In evaluating vulnerability of the population in Carver County the risk/vulnerability includes the entire population since there is no way to determine the impact/magnitude of a Property Acquisition/Structure Relocation.
- **Environmental Risk/Vulnerability:** Risks to the environment are minimal. This process would involve the movement of structures from one location to another or possible total demolition.

4.3.8 Water Supply/Wastewater Treatment

Hazard Identification
This is being added because of the June 2014 rain events in Carver County. The Norwood Young America wastewater treatment facility sustained damage from flood waters that shut down the plant. This impacted the city by having residents minimize the use of water, which reduced wastewater. The facility sustained large amounts of water in two of the facility buildings which took out pumps and electrical equipment. This shut down the plant which forced the city to bypass normal facility treatment operations.

The Watertown Wastewater Treatment Facility is another facility that has been impacted in the past. In 2011, the Crow River reached the height of 16.44 ft., but the National Weather Service was forecasting the crest to reach the 1965 flood numbers of 19.23 or higher. This forecast prompted the city to start building a levee system around the facility to reduce the impact of the river water into the facility and shutting it down.

The City of Mayer has a Wastewater Treatment Facility that was impacted by the rain events of June 2014. The facility was put into bypass mode because there was too much inflow & infiltration of fresh water into the system from sanitary sewer manholes submerged under water. This bypass mode does not allow the wastewater treatment facility to treat the wastewater properly.

When looking at power outages, there is a great impact to water supply facilities along with wastewater facilities. The impact is total shut down of facilities if not backed up with generator or another source of power.

Hazard Profile
The reduction or complete loss of either of these facilities would impact more than 50% of a community. This would be a catastrophic event to the community. The loss of water supply to a community affects the residents, businesses and the local fire department.

The loss of a wastewater treatment facility would also impact the residents and businesses because wastewater would not be treated in the normal process.

Assets Exposed to Hazard

- **Property Risk/Vulnerability:** The flooding of the wastewater treatment facility in Norwood Young America affected several thousand people during the June 2014 rain/flood event. This type of flooding event has the potential of affecting wastewater treatment facilities all over Carver County.
- **People Risk/Vulnerability:** Residents and business are the ones affected by the shutdown of a wastewater treatment facility and even a water-supply facility will affect residents and business along with the fire department for fire suppression.
- **Environmental Risk/Vulnerability:** The environmental issues would be untreated wastewater being passed through or around the wastewater treatment facility because it is not working properly. The potential of raw sewage flowing into rivers, lakes, and marshes is high when there is a failure.

4.3.9 Bridges/Culverts

Hazard Identification
Through-out the county there were bridges and culverts that sustained damages form the June 2014 flooding event that was not eligible for disaster funds. The bridges and culverts were damaged enough that weight restrictions were added. Communities would like to upgrade these bridges/culverts to mitigate further damage or total destruction of the bridge/culvert.

Hazard Profile
The loss of a bridge/culvert in some areas of the county would be critical. This is not the same impact for more urban areas of the county. However, this is an impact that affects the community for the duration of the repair or replacement.

Assets Exposed to Hazard

- **Property Risk/Vulnerability:** Risks/ Vulnerability to the property are minimal. The removal process and reconstruction process would be monitored.
- **People Risk/Vulnerability:** Residents in the area or people that travel in the area are affected. The bridges that are damaged may be put under weight restrictions. The older bridges are in rural areas where there are farming activities. Some of these activities require large truck or tractors for hauling. Adding weight restrictions to these bridges may have a large impact on the farming industry in those areas.
- **Environmental Risk/Vulnerability:** Risks/ Vulnerability to the environment are minimal. The removal process and reconstruction process would be monitored.

5.2.1 Flooding

Landslide/Slope Failure

- **Mitigation Goal #5:** To improve landslide/slope failures that impact public and/or private infrastructure.
- **Objective #5:** Improve the landslide/slope failure areas so no further erosion will impact public and private infrastructure.

Property Acquisition/Structure Relocation

- **Mitigation Goal #6:** To acquisition or relocate structures that are in danger of structural damage due to flooding or landslide/slope failure.
- **Objective #6:** Purchase structures or move them to another location to eliminate structural damage due to flooding or landslide/slope failure.

Water Supply/Wastewater Treatment

- **Mitigation Goal #7:** Reduce the potential of total failure of these facilities.
- **Mitigation Goal #8:** Reduce inflow & infiltration into the sanitary sewer system.
- **Objective #7:** Assist these facilities in planning by looking at flooding, power outages, back-up systems, etc.
- **Objective #8:** Assist Cities and Townships with inflow & infiltration issues.

Bridges/Culverts

- **Mitigation Goal #8:** Replacement of failing/damaged bridges and culverts.
- **Objective #8:** Assist Cities and Townships with bridges and culverts that are in need of replacement to improve weight limits, safety of vehicles passing over, and water passage.